

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
860	1	I'm the General Manager of the Stevinson Water District. I'm here testifying on behalf of the landowners in the Stevinson Water District and the Merquin County Water District, approximately 1,300 acres of irrigated land, including the town of Stevinson. It's a disadvantaged community.	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.
860	2	In 1890, my ancestor built an irrigation canal 26 miles long from the San Joaquin River east of Los Banos to the confluences of the Merced and San Joaquin. Our land is located at those confluences that have received service water for 120 years. The canal is earthen and connected to Bear and Owens Creek and a number of sloughs and large wetlands. We've been told by agencies that we're now jurisdictional, even though it's a man-made canal. This is, you know, part of the job, you know? You know, we're being regulated, that's fine. But our supply is being threatened at the same time with this proposal. And it's – you know, when you get less water, it's going to impact the wetlands that we also have. And in my mind, not only agriculture but the wetlands and the species that occupy it are being threatened in our area, so they deserve the same protection as the salmon.	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.
860	3	One-third to one-half of our water is groundwater, so we rely on the conjunctive use of groundwater. And we've become increasingly efficient in our application of water as the scarcity of the resources have dictated. These efforts are decreasing aquifer storage and decreasing the ability to rejuvenate our groundwater, making groundwater sustainability more difficult in absence of surface water, the only way to create sustainability outside of fallowing land. So it's really putting us in a difficult situation. I've been working very closely with Merced County in the development of GSAs and the sustainable job that we have, and it's a huge job. We're creating an entirely new bureaucracy of managing groundwater that didn't exist before, and it's very daunting. You know, as I've gotten into it I realize that our jobs are just starting to get very, very difficult. So this proposal is, frankly, very scary in the job that we have to do going forward. Certainly, unless we've got some kind of surface water, the only way to achieve sustainability is fallowing. And, you know, you know that you won't see significant fallowing right away. But I can guarantee, in ten years this valley is going to look very different as a result of the sustainable – groundwater sustainability legislation.	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.
860	4	This proposal, if implemented, will increase the loss of -- this loss of ag ground, and also the jobs in related industries. So it is quite challenging, to say the least.	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.
860	5	I wanted to point out with respect to the decline in the salmon population, as has been mentioned before, there are many factors involved. And that the decline, it just appears to be that these -- it's unclear as to the actual, you know, cause of it all. The Lower San Joaquin tributary system may never achieve optimum temperature levels due to climate change for reversing this decline in salmon. I think particularly, you should go farther south. This temperature problem is going to be increasingly difficult to find any kind of significant numbers of salmon that are going to make it. Certainly, as you go farther north in California the job of large sustainable salmon populations are much easier. But as you go farther south, particularly with climate change, you know, that there's a limit to what you can expect as far as salmon populations are concerned.	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.
860	6	And when you clearly see this audience and the difficulties that we're faced with, with the sustainable groundwater and everything else, you see can how you've got us in a real vice grip here. We really don't know -- our future is very uncertain.	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.

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861	1	<p>I come to you in opposing this plan. I attend business in both Merced Irrigation District and Turlock Irrigation District’s jurisdiction, so I became, for many reasons, aware of the possible impact of the Supplemental [sic] Environmental Document. I’m also a volunteer at MID El Rancho Committee, so I am aware of the district’s continuous balancing act for water supply costs for increased system efficiency and water rights.</p> <p>When discussing the SED, we can’t escape noticing the tremendous hike in demand imposed on our limited resources where Merced River is no more than a speckle in terms of impact on the Delta or its fishery. We can’t help but to tie the dwindling California share of the Colorado River, the WaterFix and SGMA with the SED as timing is just conspicuous enough to raise eyebrows.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
861	2	<p>Our community carried the burden of constructing and maintaining the tremendous water infrastructure without relying on the state or federal government on funding. We covered all aspects of these undertakings: dam; reservoirs; hydro plants; recreational facilities; distribution systems; drainage system; electric distribution system; even the roads, to the projects. Now the state wants to plug this matured and clockwork-functioning project for their benefit with no compensation. Better yet, or for narrow purpose of serving others in the state and ridding all other local investments undertaken by MID and locals as acceptable sacrifices, again, without compensation.</p> <p>Interestingly, dams get a bad reputation, yet the state wants to utilize them for a fisheries benefit, over again, inexplicably with no compensation. This last storm generated a tremendous runoff in Exchequer Dam, combined with other tributaries. It would have inundated portions of the City of Stockton and a number of the communities on the way. Nobody appreciated this silent sentinel and the locals responsible for the health of their own line. With the SED, it seems we are surrendering the project, or more like it is being hijacked by supposedly stronger powers.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
861	3	<p>We [City of Livingston] propose the state and potential direct and indirect beneficiaries from the SED additional water releases to construct their own reservoir to achieve the proposed flow mandates. Even if we are to entertain the proposed document, we would like to understand the need for flows in the Merced River based on an actual tested scientific basis, not the ongoing speculations.</p> <p>As for the Delta, we would like to see an analysis of impacts of water quantity and quality, absent any exported water, throughout Southern California, the coast, or the Bay Area, before we make any additional releases from the Merced River Basin. Eleven hundred additional fish can’t possibly require two-thirds of Millerton Lake behind Friant Dam, which incidentally is on the San Joaquin River but miraculously off the hook. I have heard that more than an additional 1,100 salmon already made the trek up the Merced, so goal achieved. The SED could afford to wait, at least on the Merced.</p>	<p>While a new reservoir could allow some retention of water from wet years for later use in dry years, it would not create more water. The feasibility, effectiveness, and environmental consequences of constructing new reservoirs in response to the plan amendments is considered in Chapter 16, Evaluation of Other Indirect and Additional Actions. Please see Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, for information about development of alternatives for the water quality control plan amendments. Please see Master Response 3.1, Fish Benefits, regarding fish benefits of the alternatives. Regulations affecting Delta exports will be considered as part of the Sacramento Bay-Delta watershed update.</p>
861	4	<p>Please consider a more palatable approach for the volumes needed for the salmon, similar to the concepts introduced in Merced ID’s SAFE Plan. Conduct thorough studies to determine the validity of salmon that has been, corresponding to any flows committed. Return any unneeded volumes of water back to Merced ID after those studies are concluded. Even if monthly flows are dedicated to salmon outflows, the months of February and June should not be included as Merced ID indicated on many occasions, are the lower possibility for salmon to be moving during these months.</p>	<p>Please see Master Response 2.4 Alternatives to the Water Quality Control Plan Amendments, for responses to comments regarding alternatives to the plan amendments. Refer to the section that discusses the Merced Irrigation District Salmon, Agriculture, Flows & Environment Plan (S.A.F.E. Plan). Please see Master Response 1.1, General Comments, for responses to comments that acknowledge the concerns of community members, leaders, and elected representatives.</p>

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		<p>I don't mean to come strong as I say all this with utmost sincerity, with my livelihood hanging in the balance. If water is needed by other interests, then let them build their own project and better water recycling, groundwater recharge and ocean desalinization.</p>	
862	2	<p>I never had a year in my whole lifetime with zero allotment of irrigation water, like we had in 2015. And so I very strongly support the work that the MID has done in their SAFE Plan, and I hope that you give that really strong consideration.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
863	1	<p>You have heard of the travesty that will occur if the proposed proposition of this water take goes through. I pray today that you will have heard our message and that you will stop what you're doing and work in a holistic manner to find the solutions for everyone.</p> <p>And I'd also like to bring it to the attention that when you're looking at a holistic approach, there's more than one solution. And in Sacramento, in the Sacramento River the ammonia that is being let out in the river that effects the plankton and every ecosystem on that river is one of the major causes of our loss of salmon. So let's stop the ammonia pollution in the Sacramento River first, and do all the things that we can do before you destroy all of the people in our communities.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
864	1	<p>Hetch Hetchy Valley was dammed and flooded a hundred years ago. Our mission is to restore Hetch Hetchy Valley and deal with the San Francisco water system. We think we can do it without them losing any one drop of water that they would be taking from the Tuolumne, whatever comes out of this process, and we hope to have the chance to show that to you.</p> <p>Hetch Hetchy Valley is just north of Yosemite Valley, on the Tuolumne River, as I said. It's the only time in American history we've allowed one of our national parks to be so destroyed. And, now, it's an important part of San Francisco's water system. And we'd like to show that they can get their full Tuolumne River supply by diverting it further downstream, using their other reservoirs and recharging groundwater better.</p> <p>We are very interested in the solution and we believe that a solution, particularly on the Tuolumne, in our case, might make it easier, actually, for us to show that it's economically in our interest to restore Hetch Hetchy Valley.</p> <p>So, I'm going to basically focus on three things right now. I'm going to show a little bit of a different perspective on how the Tuolumne is managed. I'm going to talk about some missed opportunities of San Francisco, and its customers, to develop local water supplies, and just touch on that. And then I'm going to talk, be a little critical of what San Francisco said three years ago. And I don't know what they're going to say January 3rd, when you see them in Sacramento, or what they're going to put in writing.</p> <p>So, first of all, water rights on the Tuolumne in wet years are almost evenly divided between San Francisco and the Turlock and Modesto Irrigation Districts. But in drought years, almost all the water goes to the irrigation districts.</p> <p>Storage is also about evenly divided San Francisco has Hetch Hetchy as well as Cherry and Eleanor Reservoirs upstream. San Francisco has about a third of the Don Pedro Reservoir dedicated to a water bank. And Turlock and Modesto are always very clear that it's water pre-delivered to them, so it's really their water. It's a complex issue, I won't get into that anymore. I see it a little differently. San Francisco did pay for half the cost of constructing</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>

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		<p>Don Pedro. And then, if we just look at a couple of year examples here [ATT 1], what happens between February and June in terms of diversions. Some water is diverted directly to cities and farms for consumptive use. Other water's diverted to storage.</p> <p>Here's what happened with Turlock and Modesto on the left, and San Francisco on the right, in 1991. '92 was a different story. San Francisco actually lost a little bit of storage. In '93, if you look after the six-year drought, San Francisco diverted almost a million acre-feet of the river's flow into storage. So, that's water that otherwise might have gone down the Tuolumne, if you think about what the State Board might be doing, in a year like 1993. Again, '94 different story.</p>	
864	2	<p>We support the State Board in its very difficult and very challenging effort to balance beneficial uses. We don't take a clear position or a precise position on exactly what that decision is, but we respect the Board, and the staff, and the very difficult challenge ahead.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
864	3	<p>San Francisco, in the last couple of years, actually have done some good things locally with groundwater. They've started -- they've reestablished their west basin withdrawals annually, about 4,500 acre-feet. That's something they were doing, actually, about 80 years ago, and that's a good thing. That comes out every year and helps them with Golden Gate Park, and not have to use Tuolumne River water for that. So, kudos to San Francisco, they did something right.</p> <p>And, also, they've done a great thing with essentially groundwater banking just south of the City, in Colma and Millbrae, where they've established another 62,000 acre-feet, basically, of storage. Those people take surface water in wet years and in dry years, everybody gets to access that. So, those are positive things the City has done.</p> <p>Some of their customers, in particular, have not done such things. I'm going to pick on Palo Alto for a minute. Palo Alto, when they started getting Tuolumne River water they said, hey, this is great, we can shut down our wells. We don't need to manage our groundwater anymore. And that's right in there -- I guess it's the 2010 Urban Water Management Plan.</p> <p>Hayward, the same thing. There's 21 other cities, some of them don't say it quite so clearly, as blatantly as this. But I think if you look, you would find, that once they started getting that Tuolumne River Water they shut down a lot of their efforts to retain their local supplies. And, now, they're kind of scrambling to try and figure out how they can do better. But I would recommend the Board put pressure on them to do that.</p> <p>Finally, when we did have the first part of this year, three years ago, I sat stunned in the boardroom, in Sacramento, when I heard San Francisco's presentation. It was a hydrologic presentation, done by -- oh, I'm sorry, Dan -- Dan somebody. And then, an economic presentation by Dave Sunding. And it was a draft Brattle Group Report. I don't think it's quite been published.</p> <p>But their estimates of impacts were astronomical, way beyond the pale of anything that I've heard in my almost 30 years of involvement in California water issues. They said that there could be economic impacts of \$49 billion per year, which broke down to about \$415,000 an acre-foot of water.</p> <p>And we wrote a detailed letter to the State Board, at the time, and I don't anticipate they'll</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>

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		<p>come back with that sort of assertion on January 3rd. I'm interested to see what they will hear. But I would suggest that the State Board look at whatever those assertions are very, very carefully.</p>	
864	4	<p>[ATT1: Restore Hetch Hetchy Presentation to State Water Resources Control Board: Amendment to the water quality control plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary December 19, 2016]</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>
865	1	<p>I want to precede any comments I make to you with an unequivocal and unqualified statement, that myself and everyone in this room behind me stands willing to fight to the bitter end to protect our community's water supply and our economy, if we cannot find a compromise. Our community is not prone to protesting or shouting to garner attention; just the opposite. I believe this community represents some of the most moderate and humble people you'll ever find. In fact, I think until recently, many of the people holding signs outside this morning or that drove tractors here today, would have welcomed you into their home and offered our shared interest in improving the viability of salmon in the river. We are reasonable.</p> <p>So what has changed? What has changed is we have heard from your own staff in recent weeks that the very plan that intends to divert water away from our community, destroying our drinking water quality, our household incomes, our economy, and our way of life uses, in your own staff's own words, a flawed model.</p> <p>In recent weeks we have learned that in addition to your own staff using a flawed model, we can expect 1,100 more salmon under the Bay-Delta Plan. That leaves all of us wondering: What is actually being proposed here and why? Eleven hundred salmon for 1,000 family livelihoods is an unacceptable price to bear by one of the most disadvantaged communities in the state.</p> <p>The logical conclusion of all this is what many have said for some time now, the Bay- Delta Plan is nothing more than a document being used to justify a water grab. This document does not help salmon, it simply forces our community to pay for others' mismanagement of the Bay-Delta, now a channelized shadow of a former estuary that has been reclaimed for housing and agriculture.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. Please see Master Response 3.1, Fish Protection, regarding SalSim. For further discussion regarding the consideration of beneficial uses please see Master Response 1.2, Water Quality Control Planning Process.</p>
865	2	<p>This community and this irrigation district put forth an alternative approach in the Merced River SAFE Plan that includes immediately improving flows at the times that it makes sense for migrating salmon, reducing predation on the Merced River, restoring habitat and modernizing the Merced River Salmon Hatchery. Every single one of these measures have been promoted at various times and through various forms as a means of improving salmon survivability.</p>	<p>Please see Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, regarding information about the S.A.F.E. plan. Non-flow measures, such as those described in the comment—if based upon the best available science and analyses demonstrating they would improve conditions sufficiently to support and maintain native fish populations and meet biological goals—may be used to support a change in flows within the adaptive range of the plan amendments as described in Master Response 2.1, Amendments to the Water Quality Control Plan; Master Response 2.2, Adaptive Implementation; Master Response 5.2, Incorporation of Non-Flow Measures; Chapter 3, Alternatives Description; and Appendix K, Revised Water Quality Control Plan. This comment does not make a general comment regarding the plan amendments or raise significant environmental issues.</p>
865	3	<p>I believe our community, although frustrated and fearful of your intent, is still willing to put its best foot forward. This community also cares about the environment, the Merced River and the well-being of the Merced River salmon. If that is your true intent, I urge you, without any further delay, to stop the insanity and sit down with our district to begin immediate discussions about the implementation of the Merced River SAFE Plan. If your true goal is to help the salmon, we will work with you. However, if your real intent is to</p>	<p>Please see Master Response 1.1, General Comments regarding the public outreach process and voluntary agreements. Please see Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, for responses to comments regarding alternatives to the plan amendments.</p> <p>Please see Master Response 3.1, Fish Protection regarding the scientific justification of the plan</p>

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		<p>simply rob our community of its water, we will fight you every step of the way. We have no other choice. We are fighting for the lifeblood of our community.</p> <p>I will share, in closing, that following the disclosures we have seen in recent weeks of flawed models and a benefit of a mere 1,100 salmon, your credibility and your intent has become increasingly suspect. I urge you to do what is right for the community and what is right to support Merced River salmon. That means rolling up your sleeves and sitting down with MID to discuss implementation of the SAFE Plan.</p>	<p>amendments for protecting fish and the SaSIM modeling included in the SED.</p>
866	1	<p>My family's been farming the same piece of land for 137 years. By increasing the water flows down the Merced River, you're all but assuring my family's next generation will not be afforded the same opportunities that were afforded to me by the hard work of the people who sit here behind me. In closing, there are other people in this room that do agree with this plan. I'd like to challenge each of those people tonight, when they sit down for dinner, to remember where their food comes from. Please consider our District's plan. We believe that's what's best.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
867	1	<p>I live on the west side of Merced County. And I will tell you that I am not as directly affected by what I consider to be the water grab as a lot of the folks behind me, but I'm indirectly affected because we are a community and a county.</p> <p>And so one of the things that strikes me is as in typical government fashion is that we try to fix one problem, but we create an even huger problem left behind by it. And I do encourage you guys to make the folks that all showed up here, took time out of their busy schedules, at least make us feel that this is worth something, it was worth our time to come and see you guys. Because my past experience in dealing with any of these commissions that I've spoken at is that they listen to our comments and we get some nods from you guys, but then they kind of go and do what they want to do anyways.</p> <p>Because it's really not a fair negotiation when you guys have set the bar so high, and then now you're willing and want us to start at a number. Your number is 40, it could be 50, it could be 30, and in reality, probably 10 or 15 is what actually works. So as long as everybody is willing to negotiate fairly, I think that there are no bigger environmentalists than farmers themselves. I'm a dairyman by trade. That's what I do for a living.</p>	<p>Please refer to Master Response 1.1, General Comments, for general comments on the plan amendments and discussion of the environmental issue commonly raised. Please refer to Master Response 8.2, Regional Agricultural Economic Effects for information regarding dairy producers in the plan area.</p>
867	2	<p>I think it was said earlier that it's our livelihood. It's in our best interest to take care of our waterways. It's in our best interest to take care of our ground and our water management and air management, we do all those things. But it's just you just keep taking a little bit more, a little bit more, and it becomes harder and harder to stay in business. Because at the end of the day as a business owner, if I go out of business, I put families2 out of business and they go on the system.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues and for general information regarding the economic effects and economic analyses disclosed in the Recirculated SED (primarily Chapter 20, Economic Analyses).</p>
868	1	<p>My family owns, and we daily operate, a dairy here, in Merced County. To that end, we employ 29 Merced residents, who support their families and the local economy through their wages.</p> <p>I'm also a husband and a father of six children, ranging in age from 19 to 4. I sincerely hope there is an ag economy here, in Merced County, in which they may be able to participate someday.</p> <p>I'm also very involved in my community, church and school. Our children attend Providence</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>

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		<p>Christian School and Stoneridge Christian High School.</p> <p>I currently serve on the Building Committee for a new campus for these schools. We're building a \$25 to \$30 million Christian school campus here, in Merced. All of this money will be privately raised through generous supporters of Christian education.</p> <p>We're building this school to educate young men and women to not only be civic leaders, but to also be those who will conduct their lives with honesty and integrity. Most importantly, we strive to provide a Christian faith as their foundation on which to base their lives and future decisions.</p> <p>A large portion of our funds raised are from the ag community, even though our student population represents the community demographics, as a whole. A negative impact to this group of donors puts negative pressure on our fundraising abilities.</p> <p>At our new campus, we get our drinking water from a well, from a private water company, Meadowbrook Water. It's all groundwater. If they have to go deeper for drinking water, it will not only cost more but, as you know, as you get into different strata, there's different quality issues in the water.</p> <p>This is the drinking water for our students. Please don't place this increased river flow impediment as a hurdle to what we are trying to build for future generations of Merced families.</p> <p>I beg you to consider the students of our communities. I am told that 70 percent of the property tax base in Merced County is from agriculture. By taking this additional water, our ag economy will be directly impacted, and I fear the population and, therefore, our student body will be adversely impacted.</p>	
868	2	<p>I'm also very involved in the SGMA process in our subbasin. By the diversion of surface irrigation water out of our subbasin, the math for groundwater sustainability will not work, without even more cutbacks or stoppages to agriculture.</p> <p>We have participated, in good faith, in the SGMA GSA process. We have a large enough task in front of us, already, without this added burden of even less water for our valley. Please don't pull the rug out from underneath us, as we try to create a sustainable model for water in our basin</p>	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
868	3	The ramifications of these decisions will have long-lasting effects on not only the jobs lost in agriculture, but also the community as a whole.	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.
868	4	I understand there will be years where the farming community may not even notice this extra water was sent down the river. Those are not the times we worry about. As we have painstakingly realized over the past few years, everyone must cut back their use of water except the river flows. In a natural state, without dams, would the Merced River have been running in the fall of 2015?	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.
869	1	The San Joaquin tributary rivers that we're talking about here, as people in the room probably know better than I, used to be two-way, mega highways for nutrients and sediment for many millennia. They carried tons and tons of sediment and nutrients downstream and deposited them in floodplains here, in the Central Valley, and in the Delta.	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.

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		<p>And I would argue that the farmlands, that we're farming today, are in part due to the fact that the rivers created those rich, fertile soils, and provided the groundwater, over many millennia, that we've been using up, now. And conversely, the rivers provided a means to transport huge, huge millions of salmon and steelhead upstream, and brought enormous amounts of nutrients from the ocean in that direction, which nurtured a whole ecosystem in the mountains, and the headwaters, and the foothills in between.</p> <p>While I have the utmost awe and respect for farming families, and the farming lifestyle and tradition, I think we have heard a lot of language here today that obscures the truth. We've heard a lot about taking water. Well, we humans have been taking water from the environment for many, many decades.</p>	
869	2	<p>We've talked about a created drought. Well, the whole estuary system, from the rivers through the Delta, through the San Francisco Bay, into the ocean, that system has been in a super drought in many years, out of the last 40 years and almost half of those years, due to diversions for storage, and pumping.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
869	3	<p>I would say that if the water system in California is broken, maybe we broke it; by bad decisions that, at the time, maybe have seemed normal and reasonable, but we have continued to take more, and more, and more. We have planted permanent crops, where they perhaps shouldn't be planted, based on the assumption that there would always be water for them. We have planted in saline soils. We have over pumped the groundwater. We've not charged enough for water that corresponds to the value of that water in our ecosystem. And it sounds oddly, to me, as though we are now blaming the salmon and the Water Board for the groundwater over-pumping, and for the future subsidence that might occur, and all the other practices and choices that have been made. And we're asking the ecosystem, and the smelt, and the salmon, subspecies to make the ultimate sacrifice of extinction so that we can continue those practices. And I would like to object.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
869	4	<p>I've listened long and hard here, and I've taken to heart what everybody has said. And I sympathize with the economic pain. It's not all due to the fact that there hasn't been enough water. Water's the basis for life. It's not about 1,100 fish. And it's not theoretical. We're talking about extinction. We are all tied together, humans and the ecosystems, in one giant, interdependent web, and it's a limited pie of water, and there's not going to be any more, folks. I'm sorry. We can build dams as much as we want, but there isn't going to be any more water to put in them. And, so, it's a limited pie and we all have to learn how to divide it up and take smaller pieces for all of us. For urbans, for rural, for industry, for everyone.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
869	5	<p>I strongly support the Board's desire to try to provide more flows for the ecosystems. Please aim for the 60 percent of unimpaired flows. And let's, please, stop blaming and punishing the environment and give back some of the water to try to create conditions for restoring the health of the ecosystems.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
870	1	<p>When you look at it and the problems that you guys have to deal with, there's a question to me as to why their ammonia, by all the cities, counties, sewage departments around the Delta and the rivers. You're looking at tens of thousands of tons per day.</p> <p>CHAIR MARCUS: Yeah, those are being updated. Particularly, we did a decision, what, almost two years ago, and Sacramento is upgrading theirs, and they were absolutely the largest. So,</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>

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		<p>that's in process. That's a good point.</p> <p>MR. BERTRAM: Sacramento, as of this month, is still at 10. According to Costa they're fining them. We're not doing anything with that.</p> <p>CHAIR MARCUS: No, they're upgrading right now, but it will take a while, but it's in process.</p> <p>MR. BERTRAM: Yeah, they've gotten years to do it. Farmers are given two years, three years, tops, before we have to change our tractors, before we have to update our equipment, change the closed systems to keep the County happy. We don't get that. You have one of them, you've caught, you've caught Sacramento. There's still 299 others that are still untouched. Why can't we get something -- you guys have contact with your Legislators. Why not contact them and have them start working on that, instead of working on the farmer that's trying to make a buck.</p>	
871	1	<p>As a School District Superintendent, I have dealt with the loss of wells due to concentrated salinity because of pumping the water that's underground, a dynamic that will undoubtedly impact all school districts in the valley if we rely on more groundwater pumping.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
871	2	<p>As an educator, I just have one question for your consideration: Why is it that the children that live and study in our watershed are less important than the children in the rest of the state? Because that is exactly what you've done in this report, you've made a decision to value children that live in areas that essentially have no watershed over the children and families that have chosen to work in the heartland of California. This decision punishes people that work to support the lifestyles of the coastal elites, and we are very tired of this treatment.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
871	3	<p>Tourism and technology alone will not keep California a financially viable state. This state has always depended on the power of flawed planning process that doesn't really examine the values underpinning these decisions is unconscionable. You need to stop and think about those values. It's time to stop and rethink what you are doing to the children and families in this region.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
872	1	<p>Merced College has 9,500 full-time equivalent students which are made up of 12,000 or more unduplicated individuals. They are the sons and daughters and grandchildren and the - grandchildren, sons and daughters of the employees of the people who stand behind us. And the kind of hit that this would represent to our economy, \$230 million, 1,000 jobs has, pun intended, a downstream effect on young people and families who are trying to better themselves by going to school. Far too many of our students, over half, qualify for financial aid. Far too many have income insecurity, housing insecurity, even food insecurity in such a food-rich region.</p> <p>And when you talk about consequences and the effects of what this would do, I want to echo what the elected official said about the challenge to our economy and put the face of my students on that challenge.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
873	1	<p>Welcome to Merced. As you can see, this is kind of an emotional issue, not just for farmers but for the entire community. And that's one of the things we need to talk about, I'm just going to give you some general statistics on Merced Irrigation District and not bore you with a bunch of slides with maps and stuff. But our water rights are, as people talk about, they're</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>

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		<p>senior. They go back to 1857. We have direct diversion and storage rights on the Merced River. It's a locally owned and paid for hydroelectric and reservoir project.</p>	
873	2	<p>[Merced Irrigation District's] average family farm size is 50 acres [ATT1], and we produce over 50 crops in this area, 130,000 acres irrigated in the district: 175,000 in the basin receive water from Merced Irrigation District in some way, shape or form; 5,000 of that is a National Wildlife Refuge that we give 15,000 acre-feet of water to per year. Stevinson Water District, we have an agreement with them where we have to provide water to them first, 25,000 acre-feet per year. We also put water in the river for Merced River riparians. And as you've heard, we provide groundwater recharge benefits to this 500,000 acre groundwater basin. And everything we do protects drinking water quality in the basin.</p> <p>So the entire basin, and that's why you see the entire community here, depends on MID's senior water rights and stored water in some way, shape or form.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
873	3	<p>I just want to give a quick reminder, at the last Water Quality Control Plan in 1995, we indicated that we needed some flow and water quality standard at Vernalis, the southern edge of the Delta. And we were able to bring everybody together and implement that Water Quality Control Plan with the Vernalis Adaptive Management Plan, which was an over ten-year water release scientific program on all the tributaries. So I think Merced has demonstrated a reasonable history of working with folks. And I think, to the Water Board's credit at the time, that they did the same thing.</p> <p>And I think it's important to the discussion we're talking about, flows from 1992 to, you know, some year present. Due to VAMP and other water transfers that Merced had done, we've released twice the volume that we've been required to by regulation down the Merced River since 1997, including spring out-migration flows and fall attraction flows.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues or make a general comment regarding the plan amendments.</p>
873	4	<p>I want to mention that the first draft of this SED that came out, we had plenty of public process. We [Merced Irrigation District] had State Water Board staff and folks out to Merced and did some tours. And we pointed out some of our major concerns regarding groundwater assumptions, land idling assumptions, lots of other things. And to the Water Board's credit and the Water Board staff's credit, they did go back to the drawing board and the drought kind of got in the way of us all--in the middle there.</p> <p>But one thing we did notice about the second draft is, although we have been asked for hard data, we haven't had a sit-down with anybody to explain what that data means. As it's being suggested, water operations are complex on rivers, et cetera. Well, they're just as complex for the way we manage the river and our water supplies and our conjunctive water management practices, and those things need to be explained as to why the data may be the way it is and not just interpreted in some other fashion. I think that's important.</p>	<p>The State Water Board has posted comments received in response to the 2012 Draft SED, and as stated in the Executive Summary of the Recirculated SED, Section ES 3.3, Recirculated CEQA Document, the revision to the SED contains substantial changes to the 2012 Draft SED based partly on the comments received. State Water Board staff conducted two days of field tours with MID staff on September 17–18, 2013, and met with MID staff on October 31, 2013 to discuss groundwater issues. In addition to the two comment letters submitted by Merced Irrigation District on the 2012 Draft SED and MID's presentation at a March 20, 2013 workshop, the State Water Board requested additional technical information from MID on September 4, 2015. MID responded to that request on October 6, 2015. MID has had several opportunities to interact with State Water Board staff to provide and explain any pertinent data, assumptions, or interpretations related to the Recirculated SED. Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for a discussion regarding the reasonableness of the modeling used in the SED's analysis. Please refer to Master Response 1.1, General Comments regarding the programmatic nature of the SED's analysis.</p>
873	5	<p>[Merced Irrigation District has] had some recent experience with public process that gives us some reason for hope. As probably everybody here is aware, we're going through the Federal Energy Regulatory relicensing processing. In that public process, we spent \$28 million in seven years on process and studies. We put together our FERC application based on the science and studies. And FERC issued a draft Environmental Impact Statement based upon that information in theirs that included a flow schedule for the Merced River.</p> <p>From there, we had more public input, comments, response to the draft EIS, and we had a public meeting in Merced, much attended, like this, much emotional, like this, but also, as</p>	<p>Please see Master Response 1.1, General Comments, regarding the public outreach process.</p>

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		<p>you'll get from the rest of our team, a lot of science and understanding of the local system and how our water rights work, how the river health has been taken care of. And we believe, to FERC's credit, they took that input, went back to the drawing board, as being suggested here, as I read on your website and your process that that's the intent, and they came back with a final Environmental Impact Statement with some modified flow schedule that we believe was reasonable and balanced to protect the fisheries. And it was a decrease from what the draft proposed.</p> <p>And so I think it's important to frame that in that we hope that this process will result in the same, our input, science and knowledge will be received as vital input into this Water Quality Control Plan process, but only time will tell. I look forward to ending these public meetings, getting our written comments in, looking to May on when a new draft might come out.</p>	
873	6	<p>I'm General Counsel for Merced [Irrigation District]. The SED and implementation of it is required to be based on substantial evidence. When developing and balancing a water quality objective the Board is required to consider and balance all of the different competing demands for water. In going through the more than 3,000 pages of the SED, it doesn't look like the Board seriously looked at or paid consideration to the demands or uses for water by Merced Irrigation District or our customers, nor seriously considered impacts on our community or across the valley.</p>	<p>Please refer to Master Response 1.1, General Comments, for a discussion of substantial evidence. Please also see Master Response 1.1 and Master Response 2.1, Water Quality Control Planning Process, for responses to comments that discuss the State Water Board's consideration of beneficial uses. The SED considers the demand or uses for water by various users, including Merced Irrigation District, within the context of environmental resources and Appendix B, State Water Board's Environmental Checklist. The impacts to these resources are evaluated in Chapter 9, Groundwater Resources; Chapter 10, Recreational Resources and Aesthetics; Chapter 11, Agricultural Resources; Chapter 13, Service Providers; and Chapter 22, Integrated Discussion of Potential Municipal and Domestic Water Supply Management Options. In addition, Chapter 20, Economic Analyses, evaluates economic effects related to agricultural production and local fiscal conditions, municipal and industrial water supplies and affected regional economies, hydropower generation, revenues and the regional economy, fisheries and regional economies, recreational opportunities, activity and the regional economy, and the potential costs of complying with salinity water quality objectives in the southern Delta. For additional information, please refer to Appendix G, Agricultural Economic Effects of Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results.</p>
873	7	<p>The Board has specifically declined to address a number of other factors that could achieve the same goals as the SED in its flow-only approach but without such a large use of water, including improving availability of habitat, addressing predation, who knows how many illegal diversions of water in the Merced River or in the Delta.</p>	<p>The State Water Board also recommends a suite of non-flow measures complementary to the flow objectives for the reasonable protection of fish and wildlife. Please see Appendix K, Revised Water Quality Control Plan, for a list of the recommended non-flow measures, and Chapter 16, Evaluation of Other indirect and Additional Actions, Section 16.3, Lower San Joaquin River Alternatives–Non-Flow Measures, for a description of these actions and their associated cost and potential environmental impacts. In addition, for a discussion on non-flow measures and the State Water Board's authority related to these measures, please see Master Response 5.2, Incorporation of Non-Flow Measures.</p>
873	8	<p>Regardless of how the Board intends to implement the SED, whether it's through a Water Rights Order or an order under section 401 of the Clean Water Act, without going through these things the Board can't show that the SED is based on substantial evidence, especially in light of the extreme impacts that it's posing to our community.</p>	<p>Please see Master Response 1.1, General Comments, for a response to comments regarding substantial evidence and the plan amendments.</p>
873	9	<p>Merced Irrigation District is being proposed to be held responsible for maintaining flows on the Merced River, not just immediately downstream of our reservoir but all the way to the confluence of the Merced and the San Joaquin, which is more than 50 miles away from the last point in the river that we have any sort of control or authority at all.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p> <p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding the water quality control planning process and for a discussion regarding the responsibility for achieving water quality objectives, which will be determined in future proceeding(s).</p>
873	10	<p>The SED represents a violation of SGMA. As you've heard, a number of folks are concerned with that. The Board is proposing to require, for example, that MID release as much as half a</p>	<p>Please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act for a discussion on potential increases in groundwater pumping, SED consideration of SGMA, and groundwater</p>

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		<p>million acre-feet of surface water in a wet year for the benefit of a very small handful of fish, and a very small handful of fish on the Merced River.</p>	<p>recharge. The SED does not violate SGMA because SGMA requires local public agencies to sustainably manage groundwater basins that are subject to SGMA without causing “undesirable results” (Water Code § 10721(x)). The SED and plan amendments do not require or encourage increased groundwater pumping. The SED analyses reflect that the historical local response to reduced surface water availability has been to choose to increase groundwater pumping; therefore, the SED was required to analyze this reasonably foreseeable action and its impacts on the groundwater basin from this local response.</p> <p>SGMA was passed by the legislature in 2014 to address overdraft issues and associated negative impacts to groundwater basins from overextraction. SGMA requires local public agencies in the plan area form groundwater sustainability agencies (GSAs) by June 30, 2017 and draft groundwater sustainability plans (GSPs) by 2020 for critically overdrafted basins and 2022 for all other basins. GSAs have 20 years to implement GSPs and achieve sustainability. GSAs are now formed in the plan area, but GSPs have yet to be drafted or implemented. The State Water Board acknowledges reaching sustainability in these overdrafted basins will be challenging, but the plan amendments do not conflict with SGMA. Instead, knowledge of the plan amendments during the GSP drafting phase allows for integrated planning of scarce water resources that does not trade impacts between surface and groundwater.</p> <p>Chapter 9, Groundwater Resources, 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. 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. Moreover, 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, and implementation of SGMA and conservation measures.</p> <p>For further discussion regarding the scope of the SED, and the requirements of CEQA and program-level review, please see Master Response 1.1, General Comments.</p> <p>For a discussion regarding the plan amendments as they relate to disadvantaged communities, please see Master Response 2.7, Disadvantaged Communities.</p> <p>For a discussion on connectivity of subbasins and the State Water Board approach to capture inter-subbasin effects in the analysis, please see Chapter 9, Groundwater Resources, Section 9.4.2, Methods and Approach.</p> <p>For a discussion on the reason why the LSJR flow objectives would not jeopardize municipal water supply, please see Master Response 3.6, Service Providers.</p> <p>For a description of the environmental background, including observed subsidence near El Nido and within the plan area and greater San Joaquin Valley, please see Chapter 9, Groundwater Resources, Section 9.2.1 San Joaquin Valley Groundwater Basin and Subbasins.</p> <p>For a discussion on the results of the groundwater impact analysis, please see Section 9.4.3, Impacts and Mitigation Measures.</p> <p>Please see Master Response 3.1, Fish Protection, for information regarding the scientific justification for flow requirements as protective of fish species. The commenter states that the State Water Board is proposing to require MID release “half a million acre-feet of surface water in a wet year” for “a very small handful of fish on the Merced River.” It is unclear which analyses the commenter is referencing for the cited number, because it is not provided. However, Table ES-14 does provide mean annual February-June instream flow in</p>

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			<p>the plan area by water year type. The unimpaired flow estimate for the Merced River in a wet year is 575,000 acre-feet. That represents a baseline flow in a wet year (i.e. without the plan amendments) of 541,000 acre-feet and an average annual increase in response to implementation of plan amendments of 34,000 acre feet, which is a 6% change. Moreover, the flow objective provides reasonable protection for fish and wildlife not only on the Merced River, which is an important salmon-bearing stream, but to multiple species through to the Delta such as sturgeon, steelhead and others.</p>
873	11	<p>The only real means that the Board has given to [the Merced Irrigation District] community to continue to survive is to pump more groundwater. As everybody in the state, especially within our community, has become painfully aware over the last few years, groundwater is a very limited resource. Our groundwater basin in particular is overdrafted, and it's been identified by DWR as critically overdrafted. And we believe that it's illegal and it puts our community in an impossible situation when, on one hand, we're being asked to pump more groundwater, but at the same time, we're being required to pump less groundwater.</p>	<p>Please see response to Comment 873-10</p>
873	12	<p>The State Water Board's violations of CEQA are a fatal flaw for the SED. The stated purpose of CEQA is to transparently and clearly disclose to the public what a project is, first, and then disclose the potential significant impacts that could result from the project. And we believe that the Board has not been clear or transparent in describing the project in the SED.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan for responses to comments regarding the project description of the plan amendments.</p>
873	13	<p>The SED includes significant discussion about concepts, like flow shifting and adjustments to minimum storage requirements in Lake McClure. However, as best we can tell, neither of these have been included in the project description, nor analyzed for their environmental impact. In fact, our team asked State Water Board staff at its technical workshop if those concepts were to be included as part of the project in a regulatory requirement that the district would have to meet it. The answer wasn't very clear, but we understood the response that they would not be regulatory requirements. However, and to the contrary, we read the SED pretty plainly to include them as tools that's intended to be used by the Board.</p> <p>Both of these things, flow shifting and the adjustments to minimum pull, is an illegal taking of storage space in Lake McClure. And they will have significant impacts on the environment, significant impacts to our ability to store water and use water, among other things. And the fact that those have not been included in the project description nor analyzed is not appropriate.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan regarding the adequacy of the project description and Master Response 1.1, General Comments, regarding the programmatic nature of the SED's analysis. Please see Master Response 2.2 Adaptive Implementation regarding the adequacy of the adaptive implementation description.</p>
873	14	<p>It makes it very difficult for [Merced Irrigation] District and the public to develop comments when we're not clear exactly what the project is or what the impacts really are. The reality, however, is that we have to do our best to try and figure out what the Board has proposed and what they're proposing. And we do that because there's a limited amount of time for us to prepare our comments. But unfortunately, we've had to make a number of significant assumptions in putting those comments together.</p> <p>I have a slide here [ATT1:ATT3] that goes through some of the assumptions that the district has had to make, both in preparing our comments today and our written comments. And as you can see, there are significant assumptions about key aspects of the SED. But we go into much more detail than that in our written comment.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan regarding the description of the project description of the plan amendments. Please see Master Response 1.1, General Comments, regarding general information about resource impacts and program-level analysis.</p>
873	15	<p>[MR. MCMURRAY:] I want to take a minute and go into what is, in my opinion, probably the most egregious aspect of what the Board is proposing to do in the SED. In a normal Water Quality Control Planning process, after the Board goes through and develops its plan the</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding implementation of the Bay-Delta Plan and water quality certification and the Federal Energy</p>

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		<p>Board would go through a water rights analysis and make determinations as to who would be responsible for meeting the requirements of the new plan.</p> <p>However, on the other hand, you have Merced Irrigation District and our sister agencies on the Tuolumne going through the process of relicensing our hydroelectric facilities. The normal 401 process is intended to ensure that impacts to water quality in the area of our project and that result from our project are mitigated for. Here, however, rather than going through a water rights proceeding, the State Board has clearly said it's going to implement the SED by imposing its authority under the 401 certification process.</p> <p>CHAIR MARCUS: Just to clarify, I mean, I don't want to either argue with you, I want to understand how you perceive it, but the recommendation that we would try and coordinate with the 401 was to try and be helpful to folks. We would implement through Phase 3, which would be a full on water rights provision. But this would all be through conversation with you all.</p> <p>I mean, clearly, there's a need for more communication because you may be supposing things that aren't intended. My understanding was that framing was just to try and be helpful, so that you wouldn't have duplicative proceedings. At least that was the intent.</p> <p>MR. MCMURRAY: I understand. However, we believe that the Executive Summary of the SED, as well as information in the SED itself, it's pretty clear that the Board intends to implement through the 401 certification process. And it does include a program of implementation, and we go into that in great detail in our written comments.</p> <p>So implementing through the 401 process, we believe is not appropriate. It deprives MID of our ability to participate in the implementation of the SED, as well as our constitutional right to due process because if the State Water Board implements through the 401, it can, theoretically, skip over the time and effort that it would take to go through the water rights proceedings and implement the requirements that it wants, regardless.</p>	<p>Regulatory Commission (FERC) process.</p> <p>Through section 401 certification, a state may regulate a hydropower facility's activities, not just its discharge, to ensure compliance with applicable water quality standards. (PUD No. 1 v. Washington Dept. of Ecology (1994) 511 U.S. 700, 711-712.) Thus, section 401 grants states broad authority to impose any conditions on a certification necessary to assure compliance with water quality standards or other appropriate requirement of state law. (33 U.S.C. § 1341(d); PUD No. 1, supra, 511 U.S. at pp. 711-713.) Under this provision, the flow objectives and related requirements provide a basis for appropriate certification conditions that will ensure compliance with water quality standards. (PUD No. 1, supra, 511 U.S. at pp. 714-715.)</p>
873	16	<p>The SED clearly violates the water rights priority system that has been established in California for more than 100 years. Merced Irrigation District holds some of the most senior rights on the Merced River, some of those dating all the way back to 1857. It's simple Water Rights Law, that when a call on water is made or if there's a water shortage, polar junior water rights are supposed to give up that water before more senior water rights are impacted. We don't believe that the SED respects that.</p> <p>And, in fact, we believe that the State Water Board has done exactly the opposite by focusing on senior water rights holders and the owners of the rim reservoirs for these water releases. There's no indication that we've found that there's any other water rights holder going to be required to release any water, stop illegal diversions, for example, or require anybody else at all to contribute to this. We don't believe that it's right, and it's not legal. And the impacts to our water rights are substantial, both in terms of quantity and duration.</p>	<p>Please refer to Master Response 1.1, General Comments, for information regarding water rights as they apply to the State Water Board authority, and Master Response 1.2, Water Quality Planning Process, for information on the water rights priority system.</p>
873	17	<p>I'd like to follow up just a bit on this point related to the impact to Merced IDs pre-1914 water right. And so this slide [ATT1:ATT6] is an example of an analysis that we performed to look at that impact. So you can see a dashed blue line here which represents the daily inflow into Lake McClure, the natural flow of the system. And I've adjusted this natural flow by the riparian demand on the Merced River, per information contained on the State Board's website that was collected and used during recent curtailments in the 2014-2015 droughts.</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, and SED Appendix K, Revised Water Quality Control Plan, for a description of the distinction between the Water Quality Control Plan and water rights proceedings. The nature and extent of water rights holders' responsibilities to meet objectives will be considered in a future proceeding. Please see SED Chapter 5, Surface Hydrology and Water Quality, for estimates of water supply impacts for each tributary system that result from the plan amendments.</p>

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		<p>The yellow line here represents that same inflow reduced by 40 percent. So this would be the volume of water that's required to flow downstream to meet the compliance with the flow alternative suggested in the SED.</p> <p>In this area that's between these two lines is the hashed area or the impact to the pre-'14 claim on the Merced River for MID. And this is the area that's also underneath of what is the historical main canal diversion for this particular year, and that's the green line. That green line is used to represent that there's a demand within MID for this water at this time of year. So a reduction of the available natural flow to meet the 40 percent of unimpaired flow requirement results in the impact to the pre-1914 water rights of MID.</p> <p>We performed this analysis over 45 years, using the historical data. And what we found in doing so was that there is an impact to that pre-1914 claim in approximately four out of the five years, or about 80 percent of the time, and across all water year types, from critical years through wet years. And that more than half of that impact by volume occurs in June; and June is the month when it's most likely that there would be an impact. So this is important in the sense that it's in effect and, I think, goes beyond an emergency action being effected upon MID's pre-'14 water rights.</p>	
873	18	<p>[MR. BERGFELD:] I think there is some water right implications associated with a requirement that would make MID store water within Lake McClure for the later beneficial use of fish and wildlife purposes. And that really goes beyond anything that I'm familiar with in terms of the water right term or condition on other water right holders in the state, and obviously is not the intended purpose or the purpose that the community constructed New Exchequer Dam and Lake McClure for.</p> <p>CHAIR MARCUS: This is something that's come up. There's been a requirement in the code, I'm not talking water rights now, I guess it's public trust, but there's been a provision in the code that later was codified in the 5700 series, that when you put a dam you promise to keep fisheries in good condition below the dam. How does MID look at that requirement?</p> <p>MR. SWEIGARD: Well, maybe I can answer that question. I grew up in this area, and I've fished the Merced River from top to bottom since I was a little kid. And I think our opinion is we're trying to find out what's actually broken. We believe that ecosystem restoration needs to be done. We believe that the hatchery is there for a reason. But look, we're not saying that we don't need to do something for fish. But I think we all have a fundamental disagreement on exactly how to go about that.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments regarding Fish and Game code 5937. Please see SED Chapter 7 for additional information regarding aquatic resources.</p>
873	19	<p>I'd like to move a little bit to the water supply impacts associated with the Lower San Joaquin River flow alternatives in the SED. So this slide [ATT1:ATT9], I'm using for context. What's illustrated here in the numbers are the average annual unimpaired flow, per the Department of Water Resources Unimpaired Flow Report, of the major rivers at their rim dams or specific locations illustrated on the figure of the rivers tributary to the Bay-Delta, as well as the valley floor areas.</p> <p>And you can see that the Merced there is highlighted as approximately 1 million acre-feet of average annual unimpaired flow. And that represents a relatively small contribution towards the overall 29.3 million acre-feet of unimpaired flow into the Bay-Delta, and is also approximately 16 percent of the unimpaired flow for the San Joaquin River Valley, when you include the main stem of the San Joaquin River. And I use that in context, that while there is</p>	<p>This comment provides a description of the relatively small volume of water originating from the Merced River. 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. While the contribution of the Merced River to the Delta as a whole may be relatively small, flows in the Merced River are important for conditions within the Merced River and the LSJR.</p>

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		<p>a significant amount of water in the system, the Merced is a very small portion of that.</p>	
873	20	<p>[About] the flow requirements that are included in the SED, this figure illustrates three different regulatory conditions [ATT1:ATT10]. One is the current requirement, and those are the blue bars. It's what MID operates to presently. The second are the requirements that were determined through the FERC relicensing process, a multi-year process where MID contributed significant resources towards the development of these final</p> <p>8 flows that FERC determined were protective of the fisheries.</p> <p>And then finally are the flow requirements as specified in the State Board's SED at 40 percent of the unimpaired flow. And you can see a change from the existing requirements, there's a significant increase, anywhere from 6 times the existing requirement in wet years to approximately 2.2, more than double the requirements in critical years.</p>	<p>The comment is not raising significant environmental issues. Please refer to Master Response 1.1, General Comments, for responses to comments that support or oppose the plan amendments or an LSJR alternative. Also refer to Master Response 3.1, Fish Protection, under regarding the need for and expected benefits of a more variable flow regime.</p> <p>See Master Response 2.4, Alternative to the Water Quality Control Plan Amendments, for discussion of FERC flows as alternatives and compared to the LSJR alternatives, and Master Response 1.2, Water Quality Control Planning Process, regarding authorities and regulations governing the water quality control planning process as it relates to water quality certification and the FERC process.</p>
873	21	<p>When you simulate how those changes in the minimum flow requirements would translate into a change in MID's ability to divert water at their canals, you can prepare a figure that looks like this [ATT1:ATT11]. And this is the average annual, by year type, MID canal diversions, when we simulate these, three different regulatory requirements. And of particular interest are over on the far right in the dry and the critical years.</p> <p>There's already an existing shortage on the order of 150,000 acre-feet in an average annual critical year. When we implement or we simulate the operation under what's proposed in the SED, that increases by more than a factor of two, to approximately 350,000 acre-feet in a critical year, and creates substantial shortages in dry years, as well, on the order of 250,000 acre-feet from the demand line that I've illustrated there above those two years, which is approximately 500,000 acre-feet.</p>	<p>Water year supply results based on the WSE model for LSJR Alternative 3 for Merced ID are very similar to those presented by the commenter. These are presented in tabular form as "Irrigation District Diversion" in Attachment 1 to Appendix F.1, pages 37-39.</p>
873	22	<p>I'd like to talk about some of the operational issues associated with trying to operate a reservoir to the flow requirements as they're specified in the SED [ATT1:ATT12].</p> <p>First, the flow requirement specified as a seven-day running average, the minimum flow, which would mean that for the February through June period the minimum flow requirement would be changing almost daily, if not on a daily basis. I think that would provide significant challenges to operating a reservoir, to meet a flow requirement of that nature. As well as the fact that the compliance point would be 50 river miles downstream of MID's last point of control on the Merced River, down near the confluence with the San Joaquin.</p> <p>There are also information or there are requirements in the SED that an annual operations plan to implement the adaptive adjustments described would be required to be filed in January, which would be challenging again or problematic in that there's very little known about the water supply in early January, such that I think it would be more of a requirement to speculate as to how the river may operate than a requirement to specify how it's going to work. There are issues associated with the flow shifting beyond the water right issues. But the SED is not clear on how that would interact with Merced ID's flood control requirements and their required flood space in the reservoir.</p>	<p>Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for a discussion of the reasonableness of the models used to evaluate effects of a sub-monthly objective as well as flood control constraints included in the WSE model. Please also refer to Master Response 1.1, General Comments, regarding the programmatic nature of the SED's analysis.</p>
873	23	<p>The implementation in through the Bay-Delta isn't described in the SED. And so it's difficult to know how this water coming down the Merced River will actually make it into and</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the project description and protection of flows provided by the LSJR plan amendments in the tributaries, the LSJR, and the Delta. Please see sections that address the project description and the</p>

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		<p>through the Delta.</p> <p>There are some technical issues in the analysis that was performed in support of the SED. It's difficult to know exactly what the project is at times because, while it does include a Lower San Joaquin River flow and a south Delta salinity, it also includes the Program of Implementation which the SED references the need for carryover storage requirements. It references the adaptive adjustments. But those things are not necessarily described in adequate detail to perform an analysis to understand the impacts.</p>	<p>program of implementation for additional information about project definition, intent of downstream flows, and carry over storage requirements.</p>
873	24	<p>The analysis that's been done in applying some of these things, such as the carryover requirement and the flow shifting, when it's unclear as to whether they are included in the project or whether they would be a requirement or not, it makes it appear that the modeling is done to look at the environmental impacts that would occur when you push more water out of the system in February and June, and then eliminate some of those impacts through some of these other mechanisms that may or may not be part of the project. It's very clear.</p> <p>And I think your staff has come to the recognition that requiring more flow February through June can create temperature impacts in the river in other times of the year. But then we model an analysis that includes some of these other things, that it's not clear whether they're part of the project. And it tends to eliminate those impacts, as opposed to disclose them.</p>	<p>Please see Master Response 3.2, Surface Water Analyses and Modeling, for responses to comments regarding modeling and the LSJR plan amendments. The plan update includes both narrative and numeric LSJR flow objectives. The adaptive implementation provisions of the program of implementation, described in Appendix K, and the modeling that was done to show the potential effects of the project, are intended to attain both the narrative and numeric objective. The modeling therefore includes flow shifting needed to reduce or eliminate adverse temperature effects, particularly for higher percents of unimpaired flow.</p> <p>Please see Master Response 2.1 Amendments to the Water Quality Control Plan, regarding the carryover storage requirements.</p> <p>Master Response 2.2, Adaptive Implementation, provides additional description and examples of how adaptive management may proceed and the bounds under which it may do so.</p>
873	25	<p>There's some significant underestimation of the water that would be exported at the federal and state pumping plants in the south Delta when we increase the Lower San Joaquin River flows. And that's included in the analysis, but I think the analysis has missed the current requirements that limit export restrictions through these periods, such that it's underestimating how much would be exported. And that means that it's overestimating how much would become Delta outflow.</p>	<p>Please see Chapter 5, Surface Hydrology and Water Quality, which provides a summary of the export and Delta outflow analysis. Additional detail is provided in Appendix F.1, Hydrologic and Water Quality Modeling. The export restrictions considered in the analysis were those that were in place under baseline (2009) conditions. Please see Table F.1.7-1 for a list of regulations and those that were most likely to restrict exports.</p>
873	26	<p>My duties include the operation of New Exchequer Reservoir and the conjunctive management of groundwater, which I've been working intimately with other water purveyors in the Merced Groundwater Basin since 1997. I'll be using some of the samples that were used in SGMA, for instance, to talk about the groundwater help as far as SED is concerned. So I'll be talking about the loss of groundwater levels, water quality, storage subsidence and saline water intrusion, in this case it's from the San Joaquin River [ATT1:ATT14].</p> <p>So the SED, in our opinion, did not do enough work under the programmatic analysis to look at water rights implications, which is migration of groundwater out of the basin. And groundwater availability will be decreased because less recharge. Groundwater quality, especially drinking water, will be impacted to the 150,000-plus population in this basin, which are disadvantaged communities, also. And the recharge goes away, as you know, with Merced ID not having enough water to run. And subsidence, which is going to be quite dramatic [ATT1:ATT15]. And this is a very important point for the staff to look at very carefully because it may be undoable when it starts, as it's going now.</p>	<p>Please see response to Comment 873-10</p>
873	27	<p>I want to show you [ATT1:ATT16], on the left you see in red the about 30,000 acres of land that relies on groundwater all the time, and the blue relies on MID, and that's 100,000 acres. With the SED to the right, you'll see that the entire 130,000 acres will have to rely on</p>	<p>Please see response to Comment 873-10</p>

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		<p>groundwater to produce their crops.</p> <p>This is an important slide [ATT1:ATT17]. The colored area shows the Merced Groundwater Basin, roughly. And in the middle, smack in the middle of that is the Merced Irrigation District. And Merced Irrigation District is surrounded by negative characteristics all around. So to the north and south, you can see these extreme cones of depression. To the west, you have saline water under the San Joaquin River. And then to the south, there's subsidence. And you also see in blue up to the northwest is the recharge area, which is quite limited. And, actually, half of the recharge would go back to the Merced River, so we don't have a lot of opportunities there.</p> <p>And so basically Merced Irrigation District is the linchpin that is holding that whole area. Otherwise, you'll have quite a collapse.</p>	
873	28	<p>This shows the contours [in the Merced Subbasin], as shown on DWR [ATT1:ATT18]. And basically, we ran a cross-section through the cones of depression south and north and through the City of Merced, just to show you that the blue line here is basically the groundwater static levels and hydrostatic levels. And you can see how the groundwater is migrating into the right [ATT1:ATT19], which is the Chowchilla Groundwater Basin, and to the left, which is the Turlock Groundwater Basin, along the cross-section, which would add a new challenge as far as water rights goes because the Chowchilla Basin is within the Friant Unit, which is not impacted. Yet Merced Irrigation District is providing water under the SED for the San Joaquin River, and yet groundwater is also escaping to the Friant Unit.</p> <p>Another thing that I want you to appreciate is that there is about a 200-foot difference in groundwater elevation between the City of Merced and the cone of depression to the south.</p>	Please see response to Comment 873-10.
873	29	<p>This is another picture that I wanted you to see which shows what we call the Corcoran formation [ATT1:ATT20], which is a clay layer that bisects the system; the aquifer system above it and below it--confined and confined. The point of this graph is under the SED the groundwater above the Corcoran will basically diminish to a point that it is not going to be useful.</p>	Please see response to Comment 873-10
873	30	<p>This slide [ATT1:ATT21] shows the impacts on groundwater quality, which is quite serious. And to the left, the lighter colors show lower concentration. And we're only looking at salinity here, not specific other chemicals. But on the right side, you can see how it gets darkened, especially around the City of Merced in the middle and the Cities of Atwater and Livingston along Highway 99.</p> <p>We've taken a graph of the City of Merced [ATT1:ATT22]. You can see that by year 2020 the groundwater quality would be at 1,000 parts per million, which is the threshold for drinking water.</p>	Please see response to Comment 873-10
873	31	<p>This is...the extent of subsidence that we have [ATT1:ATT23]. Subsidence is encroaching to the City of Merced, south of the City of Merced, which is the most disadvantaged area of the City of Merced. Now we're going outside the rural areas into the cities [ATT1:ATT24]. That means the impacts are going to be impacting foundations, plumping, sewer systems for residential folks, plus the infrastructure for the city, plus the state infrastructure, such as Highway 99, and more importantly, from a water perspective, a continued loss in capacity for the aqueducts moving water from Northern California to Southern California, and the</p>	Please see response to Comment 873-10

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		capacity of the floodways, such as the San Joaquin River Bypass, which eventually would impact the water supply in Friant as more flood control would be needed.	
873	32	I want to say that the timing of the SED couldn't have been more difficult and any worse. Because having the SGMA, and also coming after a drought, to implement this immediately is going to basically break first the areas that have the most senior water rights.	Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues or make a general comment regarding the plan amendments.
873	33	<p>I want to talk a little bit about some of the numbers you've seen in the SED, and particularly the purported benefits to the fall-run Chinook river escapement. I understand those numbers may change in the future, but right now we can only go on what's in the SED. Also, a little bit about the reliability of those numbers, where we see some issues. And then the goals. How does the SED actually meet the goals of some of the purported goals in it.</p> <p>I find when looking forward, it's always good to look back a little bit. So I what I looked at was what is the Bay-Delta fall-run escapement historically, and what's the Merced River contribution to that? So this is a slide [ATT1:ATT25] that has escapement, fall-run Chinook escapement on the vertical access, and years from 1975 through 2015 on the horizontal access. And what you can see is this tremendous variability, which is to be expected and we all appreciate. What you can also see is that the total escapement, which is around 280,000 fish on average--taking an average on something like this a little misleading but it is a number we can use--is around 280,000 fish. And the vast, vast majority of those come out of the Sacramento River.</p> <p>When I you look at it down at the San Joaquin, the San Joaquin River contributes historically over that period about 12,000, 13,000 fish, and Merced is about 4,000 of that fish. So Merced's contribution to the Bay-Delta escapement fall-run is about 1.7 percent. If you assume that you could double that, even triple it, you probably wouldn't have a huge impact on the Bay-Delta fall-run escapements.</p> <p>So I looked forward, I looked ahead and said, what does the SED say? And the numbers aren't particularly easy to find in the SED. But we have heard a number thrown around quite often, around 1,100 fish. And that is the number that's in the SED, and it's for the San Joaquin River escapement, not for Merced. So I took a look at that and did some simple math. I think that somewhere in the SED the numbers are there, or maybe in one of the model outputs, but we haven't been able to find it yet. So just doing some simple math, if you looked at the historic contribution of the Merced to the San Joaquin River out migrants or escapement, it's about 37 percent. If you multiple 37 percent times that 1,100, you get about 400 fish.</p> <p>But you also have to remember, of that 400 fish, we all know that about 80 to 90 percent of those fish that escape from the Merced River each year are hatchery-origin fish from the Merced River Hatchery or elsewhere. So 80 to 90 percent, that's a huge proportion. That leaves 10 to 20 percent that are naturally produced. So if these numbers are right, their proposed project would generate somewhere between 40 and 80 naturally-producing fall-run Chinook salmon that would escape of the Merced. That's sort of the large context for us. And we looked at that, and we've spent a lot of effort getting to those numbers because there's obviously a cost going on in terms of water supply and other economic impacts, what's the value in the Merced?</p>	<p>See Yoshiyama et al. 1996 (as cited in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives) and Yoshiyama et al. 1998 (as cited in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30) for a historical perspective of salmon in the San Joaquin Basin including the Merced River. The commenter is correct in recognizing that salmon production in the Stanislaus, Tuolumne, and Merced Rivers has been extremely poor since large water use and infrastructure began (see Appendix C). It is also important to note that spring-run Chinook salmon were likely to historically be more abundant in the San Joaquin Basin compared to the Sacramento Basin (see Yoshiyama et al 1996), but are now only found in the Sacramento Basin.</p> <p>See the discussion in Section 19.5, Final Discussion of Benefits Analysis, of Chapter 19 regarding the importance salmon in the San Joaquin River Basin to reduce extinction risk to Central Valley salmon. Also see Carlson and Satterthwaite (2011) as cited in Chapter 19.</p> <p>The commenter has also recognized that natural production in the Merced River is very poor under existing condition and that most of the adult salmon that spawn in the Merced River are from other rivers (see Kormos et al. 2012 as an example). This is another indication that conditions for the offspring of salmon that spawn in the Merced River are poor. This also suggests that the Merced River acts as an attractive nuisance or population sink. The intent of the plan amendments is to improve the very poor conditions in the Merced River during the spring time period when juvenile salmon and steelhead are rearing and migrating.</p> <p>See Master Response 3.1, Fish Protection, regarding the use of SalSim and the benefits of the plan amendments.</p>
873	34	In the SED there's some other statements, and I'm just going to hit on some of these [ATT1:ATT26]. One is that this production would help buffer the system from catastrophic	See Master Response 3.1, Fish Protection, regarding SalSim. Additionally, some of the largest benefits from

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		<p>events, such as in the last drought. I don't think 1,100 fish or an extra 400 fish out of the Merced is going to do a whole lot of buffering if you go through another drought, like we had. It may have some benefits, but I don't think it's going to significantly buffer those impacts.</p> <p>Also, the SED doesn't do much of a job looking at the Central Valley steelhead critical habitat in the Merced River. As Lee has pointed out, when you put out a lot of water in the spring, the water temperatures tend to board up in the summer. There is some shifting of flow. But again, we couldn't figure out how that flow shifted or what predicated it or how it would be determined. So now looking at that shifting, you can see that the water temperatures go down. And an ESA-listed species for critical habitat, there's really not many, if any, steelhead in the Merced, but the critical habitat gets significantly affected, which is a serious concern when you're talking about ESA-listed species.</p> <p>Also, the effect on reservoirs fisheries isn't particularly well-documented.</p>	<p>the plan amendments are related to habitat improvements during drought years.</p> <p>See Chapter 7, Aquatic Biological Resources, for evaluations of potential impacts on steelhead in the Merced River and other fisheries evaluations. Steelhead are expected to benefit from the plan amendments as discussed in Master Response 3.1 and Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30.</p> <p>See Master Response 2.2, Adaptive Implementation, regarding the use of adaptive implementation to maximize benefits for native fish.</p> <p>We disagree with the commenter's suggestion that there are no steelhead in the Merced River. Microchemistry evidence presented by Zimmerman et al. (2009) indicated the presence of trout with anadromous mothers in the Lower Merced River.</p>
873	35	<p>There's a couple of major things that the SED focuses on in supporting. One is Bay-Delta, obviously these fish going through the Bay-Delta, and another one is floodplain. I'm going to talk about both of those. In terms of Bay-Delta, we didn't see a whole lot of analysis there. And I have heard comments saying that increased flows to the Bay-Delta will help escapement.</p> <p>Well, there's actually some pretty interesting data from the Mossdale to Dos Rios to Jersey Point from 1996 to 2006.</p> <p>It showed that basically survivorship, regardless of flow, went down as fish escaped through the Bay-Delta. So the concept that more flow into the Bay-Delta will lead to more escapement isn't particularly supported by the science. And I think what you'll see is that there's a lot going on in the Bay-Delta besides just flow, and that's basically what you have to look at. But the broad statement, put more flow at Vernalis, better escapement, needs to be supported much better in the SED [ATT1:ATT27].</p> <p>Also, the thermal temperatures, the impact that water temperatures in the San Joaquin aren't particularly conducive to putting fish out of the Merced into the San Joaquin is a problem. And some of the data seems to--some of the statements in the SED seem to gloss over that. For instance, when you look at some of the information, it shows that the core rearing temperature of the seven-day average daily maximum for rearing wasn't met in May in the San Joaquin, and yet that wasn't brought up too much.</p> <p>And also, it fails to meet the smoltification criteria in April, May and June. And again, that wasn't particularly discussed in the SED, which would have contributing factors to a decrease in fish getting--in overall escapement.</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding temperatures in the San Joaquin during February-June. See Section 3.6 of Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, for an analysis of flow effects on fish survival and abundance.</p> <p>Studies conducted more recently also show the positive benefits of flow (e.g. Sturrock et al. 2015; State Water Board 2017; TID and MID 2013, USFWS 2014; Zueg et al. 2014).</p>
873	36	<p>In terms of floodplain, floodplain is a very tricky concept in fisheries. And a lot of people confuse it, so we've often found that you really need to define it very, very carefully. Floodplain has a lot of denotations and connotations across society [ATT1:ATT28]. The SED doesn't define floodplain. When it says it's going to increase more increase of floodplain, it says that's good, but it doesn't say where the floodplain is or why that is good. It doesn't--we can't find anywhere in the SED how it documented that this was going to--how much more area was going to be inundated and why that was good, or to even figure in the Merced what exactly was going to be done. So that seemed to be a real weakness</p>	<p>Please see Master Response 1.1, General Responses, for responses to comments that do not raise significant environmental issues associated with the analysis contained within the SED or request a modification to the plan amendments. Please refer to Master Response 3.1, Fish Protection, for information about the adequacy of modeling to support the floodplain analysis. Master Response 3.1 also discusses expected benefits from increased floodplain inundation, including, but not limited to, increased food availability and decreased exposure to predators, and provides examples of increase in floodplain weighted usable area (WUA) versus flow for the Merced River.</p>

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		<p>concerning that as sort of a core something that's relied on significantly to say that this additional flow will result in this additional benefit.</p> <p>So you really need to look at things like nutrients, food productions, the quality of the floodplain. And then you have to be very specific of what floodplain you're talking about. Because if you look in the Merced, at least in the upper areas of the Merced that we're talking about where a lot of the production occurs, you're looking at an area that looks a little bit like a moonscape. It's mostly rock. It's the result of an awful lot of dredger mining and windrows.</p> <p>This photograph I'm showing is from the Merced River to the bottom of the photograph is about a half, three-quarters of a mile [ATT1:ATT29]. So you can put a lot of water up there and you're not going to get the same benefits you would if you were to have a floodplain that had a lot of organic material, a lot of good vegetation, things like that. That's not the Merced River. And when you do analyses like that, you have to be careful that you consider the specificity, not just make generalities.</p>	
873	37	<p>I'm just going to touch on some of the areas that we saw that we thought were some technical improvements that could be made. The first one is basically, using a monthly time step model is a little bit difficult when you're coming up with justifications, biological. You're using that to come up with temperatures. Then you're using those temperatures to come up with maximum temperatures to develop criteria and to say whether you meet those criteria.</p> <p>One failure that we felt in the Merced, at least, was that the Board did not use some models that the Board ordered Merced to do on water balance and water temperature that were daily time steps, in fact, some even sub-daily time steps. We thought you could have done a much better job using the best available science than relying on a monthly model [ATT:30].</p> <p>Also, your evaluation of significance criteria for temperature, in some places it said one degree Fahrenheit change was considered a significant improvement, if you will. Well, that's a nice general concept. But if you're starting at a starting temperature of 80 degrees Fahrenheit and you drop it to 79, the fish probably really don't care. So how that's applied needs to be much more rigorous. And I would suggest different significant criteria than a one degree Fahrenheit change.</p>	<p>Please see Master Response 1.1, General Responses for responses to comments that do not raise significant environmental issues associated with the analysis contained within the SED or request a modification to the plan amendments.</p> <p>Please also see Master Response 3.1, Protection of Fish and Wildlife, for information about the use of modeling to support the analysis and further information on temperature analysis.</p>
873	38	<p>It was very hard to figure out how the alternatives were analyzed overall in the SED, so I think that could be improved from a fishery standpoint. And I apologize for not being more specific, but the generalities I'm giving you is because that's what we're dealing with. It was hard to find the data and dig down into it.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. Please also see Master Response 1.1 regarding the length and complexity of the SED. The LSJR alternatives are analyzed for potentially significant environmental impacts throughout chapters 5 through 17, with corresponding supporting technical information contained in appendices. A range of unimpaired flows, that correspond to those assigned to the LSJR alternatives, are evaluated in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, to disclose benefits to native fish populations including temperature and floodplain inundation. Chapter 18, Summary of Impacts and Comparison of Alternatives, presents a summary of the impacts disclosed throughout the SED by alternative and by geographic region, as well as incorporates information from Chapter 19 when discussing the environmentally superior alternative (Section 18.2.3).</p>
873	39	<p>The steelhead issue and the ESA-steelhead, that we don't believe there's steelhead in the Merced River, but there certainly is critical habitat [ATT1:ATT31]. And certainly the NMFS will weigh in strongly on this. And it's uncertain how NMFP will look at it and say, okay,</p>	<p>The California Central Valley (CCV) steelhead DPS includes all naturally spawned populations of anadromous O. mykiss below natural and manmade impassable barriers in the Sacramento and San Joaquin rivers and their tributaries (63 FR 13347). NMFS considers all O. mykiss that have physical access to the ocean</p>

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		<p>you're going to improve springtime temperature for a non-listed fall-run Chinook salmon with an impact to an ESA-listed critical habitat. So that's a pretty important point when you figure out how you're going to implement the SED.</p>	<p>(including resident rainbow trout) to potentially be CCV steelhead and treats these fish as CCV steelhead. The lower Merced River from Crocker-Huffman Dam to its confluence with the San Joaquin River was included in the designation of critical habitat for the DPS (70 FR 52488). Rainbow trout have anadromous and resident forms that are sympatric and capable of producing offspring with a life history that is different from their own (Seamons et al. 2004; Christie et al. 2011; Zimmerman and Reeves 2000). The State Water Board acknowledges that resident rainbow trout dominate the phenotypic life history strategy in the Merced River. However, we disagree that there is no evidence of an anadromous life history, based on the otolith microchemistry evidence presented by Zimmerman et al. (2009) indicating the presence of trout with anadromous mothers that spawned in the Lower Merced River.</p> <p>Please see Master Response 3.1, Fish Protection regarding year-round-flow objectives.</p>
873	40	<p>There's a lot of statements that aren't well-founded [ATT1:ATT32]. For instance, there's a discussion about how the reservoir changes affect fish in the reservoirs. And I think there's a seven-foot criteria used. I think it's a 15-foot, actually. When we looked at the references that documented that, they actually don't say 15 feet, they say closer to 1 foot. So there's inaccuracies. And all the analyses are based upon using those references.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either do not make a general comment regarding the plan amendments or raise significant environmental issues. As described in Chapter 7, Aquatic Biological Resources, Section 7.4.3, Impacts and Mitigation Measures, under Impact AQUA-1, a monthly drop in reservoir surface elevation of 15 feet or more was used to evaluate the frequency of events that could have adverse effects on warmwater fish species, based on the spawning preferences of largemouth bass. This criteria was based on typical spawning depths for largemouth bass that were identified in the cited references as ranging from the surface to about 15 feet (PG&E 2000; USBR 2011).</p> <p>USBR's (2011) San Joaquin River Restoration Program EIR described the typical range of spawning depths for largemouth bass in Millerton Reservoir as being from the surface to a depth of 15 feet, and used this depth range to evaluate impacts to warmwater fish shallow water habitat (see Section 5.4.4, Project-Level Impacts and Mitigation Measures, Impact FSH-15 and Impact FSH-18 of the EIR).</p> <p>PGE's (2000) Hydrodivestiture EIR used the same significance criteria as the SED: an evaluation threshold of a change in reservoir elevation of 15 feet, and fluctuation of elevation over the evaluation threshold in at least 10 percent of the spawning period months for the period of record (see Section 4.4.6.3 Analysis Methodology – Storage Reservoirs of the Hydrodivestiture EIR). This significance criteria was used in the analyses of warmwater fisheries impacts at Lake Britton on the Pit River, Lake Almanore, on the Upper North Fork Feather River, Butt Valley Reservoir on Butt Creek (tributary to Upper North Fork Feather River), Englebright Reservoir on the North Yuba River, Lyons Reservoir on the South Fork Stanislaus River, and Bass Lake on Willow Creek (tributary to the San Joaquin River).</p>
873	41	<p>I heard someone say earlier, developing goals and objectives would be one of the mission statements for the technical group. That's a very important step in implementing any biological plan.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 3.1, Fish Protection, for responses to comments regarding the Program of Implementation and biological goals. Please also refer to SED Appendix K, Program of Implementation.</p>
873	42	<p>One of the guiding goals was to develop viable native fish populations. Well, it seems that the SED confuses abundance with viability. And viability and abundance are not the same thing at all. So I think there needs to be more of a discussion on that. And also, as I said, there must--you really should be looking at the Merced, at least, a lot more closely on the structure, not only just flow but structure. Each of these tributaries is very, very different. So when you make summary statements, they don't apply to each of these.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding biological goals, the Stanislaus, Merced, and Tuolumne Working Group, and adaptive implementation. Specifically refer to the section describing the program of implementation for additional information about biological goals which identify abundance and viability as distinct biological metrics.</p>
873	43	<p>As a public agency and a general manager of one, we've been in the same situation and gone through the public process and come up with a better viable alternative and solution. And so just keep that in mind. I know sometimes it feels like you're being attacked, but, you know, these are emotional issues. But we also believe we have some good valid input that</p>	<p>Please see Master Response 1.1, General Comments regarding the public outreach process.</p>

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Ltr#	Cmt#	Comment	Response
		needs to be taken into account.	
873	44	On the 401 concept, that's been on the State Water Board's website for quite a while. So absent somebody clarifying that, you know, the State Water Board intends to negotiate with us on the 401, et cetera, the way it reads and the way it reads in the SED, maybe we're paranoid, but it comes across as, hey, we're going to use this tool to get what we need.	Please see Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding CWA section 401 water quality certifications.
873	45	<p>We've talked about economics quite a bit. I just want to put out there that we [Merced Irrigation District] have a PhD-level work product that indicates in Merced County that the impacts are going to be \$230 million a year and almost 1,000 jobs. I would suggest that the State Water Board and staff use that as they develop their information moving into May. I have some more detailed information in here as to what was left out and why we think it should be included, but we'll put that in our written comments.</p> <p>And also, the three counties are doing an economic analysis on the regional impacts that I think will be done pretty soon, and will also be a valuable tool for you folks to consider.</p>	Please see Master Response 8.2, Regional Agricultural Economic Effects, for discussion of the economic analysis performed by Merced Irrigation District.
873	46	At Lake McClure, we deliver water to approximately 900 homes in two communities. And they provide \$1.8 million in property taxes to Mariposa County. I've seen no mention of that anywhere. And we're not required to deliver them domestic water. So that is something that, depending on the outcome of all these proceedings, could be something that needs to be reevaluated. And we also have approximately 240 houseboats on Lake McClure that provide about \$300,000 in annual property tax revenue to Mariposa County. So I think at some point they're going to want to weigh in on this also.	Please see Chapter 20, Economic Analyses, Section 20.3.6, Effects on Recreational Opportunities, Activity, and the Regional Economy, for discussion of how reservoir storage levels affect reservoir recreational activities.
873	47	<p>We've heard a lot about the discrepancies on the benefits of two salmon for this plan. And look, I think absent having details and a detailed plan and this vague adaptive management process, this is what we're left with, we're all left to guess as to what's going to happen. And that's not a very--that doesn't give us a warm, fuzzy feeling at all. It's not how you--you can't manage an irrigation district that way, I can tell you that. And I can give you some examples.</p> <p>So if you put yourself in our shoes, you know, we're faced with this. The State Water Board is suggesting they're going to run some water leger [sic] from January to February to June and it's going to be this number. And they may or may not release that water in that time period, and they may or may not want to carry that water over into storage in our reservoir to release at some other date in time for some purpose that we may or may not even know what it is. And as you've heard, that has impacts to temperature, et cetera. It has impacts to our water supply.</p> <p>And then there's a suggestion that, well, we're going to increase the minimum pool in New Exchequer to 300,000 from its current 115,000 acre-feet. That, in most years, gives us no access to 185,000 acre-feet of water supply that is our water supply. We've been putting it to reasonable beneficial use. We own the reservoir. And again, that's going to be problematic for us to come to an agreement on.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a description of the plan amendments, including carryover storage and adaptive implementation (see also Master Response 2.2, Adaptive Implementation, for more detail on adaptive implementation).</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the WSE as an appropriate tool to evaluate water supply effects and potential environmental impacts for the programmatic analyses contained in the SED, and a discussion of carryover storage as represented by the model.</p> <p>Please see Master Response 3.1, Fish Protection, regarding temperature effects on fish.</p>
873	48	I've told you how much money we've spent on relicensing. We have to make a debt payment. And we obviously had to make some assumptions to generate that debt on hydro revenues and we did that, we did our job. But adaptive management leaves us with no way to quantify what our hydro output will be, what the revenue might be, so that we could	Please see Master Response 1.1, General Comments, for responses to general comments about economic considerations. Annual hydropower generation in the plan area is dominated by the total volume of water flowing out of the rim reservoirs. Adaptive Implementation may affect timing of reservoir releases, but would have little effect on the total annual volume. As a result, effects of adaptive implementation on hydropower economics are unlikely to be substantial. Please see Master Response 2.2, regarding

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		make those payments, on top of just, you know, running the district.	implementing adaptive implementation and the STM working group. For further information regarding hydropower effects and hydropower economic considerations, please see Master Response 3.2, Surface Water Analyses and Modeling, and Master Response 8.4, Non-Agricultural Economic Considerations, respectively.
873	49	Nobody really likes to talk about the benefits of reservoirs, but these reservoirs keep rivers alive during droughts, during late summer seasons, almost, you know, in most years. And quite frankly, we release stored water downstream that benefits a lot of other economies through water supply. That hasn't been evaluated and the change in that timing.	It is unclear what is meant by "the benefits of reservoirs". As described in Chapter 5, Surface Water Hydrology and Water Quality, and Appendix F1, Hydrologic and Water Quality Modeling, the WSE model was used to evaluate potential changes in storage, water supply, and river flow under each LSJR alternative as compared to baseline. The WSE model accounts for changes in timing of reservoir releases under each LSJR alternative. Chapter 20, Economic Analyses, describes the requirements of the State Water Board to consider economic effects and, as such, the State Water Board used WSE model results to inform the consideration of economics associated with reservoir releases (e.g., hydropower and recreation).
873	50	You've heard the mention of the SAFE Plan quite a bit. I'm not going to have time to go into all of the details. But suffice it to say that we have a better idea for Merced River salmon. It's MercedRiverSAFEPlan.org.	Please see Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, regarding information about the S.A.F.E plan. This comment does not make a general comment regarding the plan amendments or raise significant environmental issues.
873	51	<p>[Merced Irrigation District is] willing to embrace our FERC flows immediately, and that's significantly more water than we're required to release right now. There is absolutely habitat restoration that needs to be done. And we generally have agreement with the Department of Fish and Wildlife, that between Snelling and Crocker-Huffman Diversion Dam, there's about five-and-a-half miles that should be the target.</p> <p>We've done extensive 2D ecosystem modeling on how exactly that should be done and all the benefits derived for the salmon's lifecycle while they're in the Merced River. You should absolutely take a look at that. I mean, that, to us that's real science, and we're putting it out there for everybody to see.</p>	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.
873	52	<p>The hatchery is there for a reason on the Merced River. The hatchery was not built when we built to make up for any project impacts. If there's a discussion about access for fish to historical spawning habitat, that hasn't existed since the early 1900s. In 1903 the Crocker-Huffman Diversion Dam was put in place and that passage is gone. The best habitat is under Lake McClure. That's not going to change. That hatchery was put there to enhance salmon populations in the San Joaquin Basin. We need to modernize the hatchery. We need to have it suit its purpose.</p> <p>And then, of course, we need to address predation. Whether people agree with me or not, I think there's plenty of information out there that shows predation is a problem, even the own actions of California Department of Fish and Wildlife by shipping salmonids from hatcheries to the Delta shows that there's a little bit of a concern on their part also.</p>	<p>Please refer to Master Response 3.1, Fish Protection, for discussions of the role of hatcheries and of predation.</p> <p>Also refer to the SED's Appendix C, Section 3, Scientific Basis for Developing Alternate San Joaquin River Flow Objectives, and to Master Response 5.2, Incorporation of Non-Flow Measures and Non-Flow Measure Analyses, for discussions of non-flow measures. As explained in those sections, it is not within the State Water Board's authority to perform non-flow related mitigation options. The final Program of Implementation will include recommendations to other agencies to take additional actions outside of the State Water Board's purview to protect SJR fish and wildlife beneficial uses. Those actions will include non-flow activities including, but not limited to: habitat restoration (floodplain restoration, gravel enhancement, riparian vegetation management, passage, etc.), hatchery management, predator control, water quality measures, ocean/riverine harvest measures, recommendations for changes to flood control curves, and barrier operations.</p>
873	53	<p>Perception is a major issue. I mean, it really appears to us that this is a hostile takeover of a locally-owned and paid for reservoir project for the state by the state for the benefit of others, including the environment. And it appears that way because we're trying to figure out the science used to justify it. And it feels like a huge block of environmental water has been identified as needed, and we're going to back into the solution using salmon as the poster child for this analysis. And we really are having a hard time getting away with that.</p> <p>You heard Senator Cannella mention legislation targeted at kind of pulling the rug out from underneath the districts if they choose to challenge Water Quality Control Plans for their</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. In addition, please see Master Response 1.1 regarding the plan amendments, the purpose and goals of the plan amendments, and the relationship of the plan amendments to other plans, programs, and agencies.</p> <p>Please see Master Response 3.1, Fish Protection, regarding the scientific basis for the plan amendments.</p>

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Ltr#	Cmt#	Comment	Response
		legality. It's not a Water Board issue specifically, I don't know, maybe it is, but it's definitely a mistrust of Sacramento issue, and these things all tie together.	
873	54	People maybe would not like to hear this, but, you know, [MID] did not destroy the Delta. We didn't channelize the Delta, we didn't pave the Delta, we didn't put farms in the Delta and build levees, but we're being asked to make up for that. And, you know, this community, I get this question all the time, is what makes a Delta farmer better than a Merced farmer? Where's the Delta's contribution to this problem? Why do they get a hall pass for developing the Delta when we're constantly under reevaluation of our water rights and Water Quality Control Plans, and what are we doing wrong?	Please refer to Master Response 1.2, Water Quality Control Planning Process regarding the State Water Board's approach to the Bay-Delta Plan updates in independent proceedings as well as other information regarding the authorities and regulations governing the water quality control planning process.
873	55	<p>[Merced Irrigation District] believes that the SED has got a lot of problems, and implementing it is going to be a major challenge. You know, I want to make clear on the SAFE Plan that there's been some talk about a good starting point, et cetera. Look, what we're saying is that's our best foot forward. We've told the state that from the beginning. We're willing to put flows in the river and do these other things now.</p> <p>Your only other alternative is a regulatory and legal process that, everybody has a different time estimate, I would say a decade or longer before anything gets done. And we think that that's a waste of time in negotiating to something. When you've got something in front of you right now that could do something, we don't see the reason for not taking advantage of that situation now. And with that, it seems the further we go along on these discussions about settlement, even the way the settlement is framed within the SED document, there's this neat little box for settlement that's been established, and you've got to fit in this box. We're not looking at settlement that way.</p> <p>I know that it's been said that it's got to be within this range, et cetera. We don't feel like we need to be put in that little box. And we think that everybody else needs to have a little bit more of an open mind. A settlement is where all parties come off their hard positions and realize they're not going to get them, absent their best day in court. And that's kind of what this feels like, is the way that this settlement process seems to be establishing itself is a lot of requirements, and we have to have this and we have to have that, which is everybody else's best day in court and not ours. And so this perception issue is a major deal.</p>	Please refer to Master Response 1.2, Water Quality Control Planning Process and Master Response 2.1, Amendments to the Water Quality Control Plan regarding implementation of the plan amendments. Please refer to Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments for a discussion regarding the adequacy of the range of alternatives evaluated. Please refer to Master Response 1.1, General Comments regarding voluntary agreements and other commonly raised environmental issues.
873	56	This adaptive management thing is absolutely terrifying. It does not give us any good feelings. And we're struggling to find out what the benefits are actually going to be. We've seen water leave regions and never return. The fish are still struggling. Fish have gone up and down. It seems like the fish in the Delta have been in peril for decades, and they continue to be in peril. Maybe they always will be. Maybe it's time for us to acknowledge that the Delta is what it is. We live in man-made system. And you've heard a lot of discussion about humans and I think, you know, we all need to be part of that.	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p> <p>For additional discussion regarding adaptive implement Please see Master Response 2.1, Amendments to the Water Quality Control Plan,</p>
873	57	[Merced Irrigation District is] willing to sit down and talk about the SAFE Plan. The devil's in the details, obviously. But absent that, I think we've got a lot of concerns. And you've heard it from the community here, they're going to probably demand of our board and our district that we defend our water rights.	Please see Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, regarding information about the S.A.F.E. plan. Please see Master Response 1.1, General Comments, and Master Response 1.2, Water Quality Control Planning Process, regarding water rights and the implementation of the plan amendments. This comment does not make a general comment regarding the plan amendments or raise significant environmental issues.
873	58	[ATT1: Merced Irrigation District's Public Comments]	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.

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
873	59	[ATT1:ATT1: MeID's Public Comments, slide 3: SED Does Not Comply with the Law]	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.
873	60	[ATT1:ATT2: MeID's Public Comments, slide 4: SED Does Not Comply with the Law]	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.
873	61	[ATT1:ATT3: MeID's Public Comments, slide 5: MeID's Assumptions of Board's Proposed Project]	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.
873	62	[ATT1:ATT4: MeID's Public Comments, slide 6: Violation of Due Process, Use of FERC Authority]	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.
873	63	[ATT1:ATT5: MeID's Public Comments, slide 7: Impacts to MeID's Pre-1914 Water Rights Claims]	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.
873	64	[ATT1:ATT6: Impact to MeID's Pre-1914 Water Rights Claims graph]	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.
873	65	[ATT1:ATT7: MeID's Public Comments, slide 9: Summary of Impacts to MeID's Pre-1914 Claims]	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.
873	66	[ATT1:ATT8: MeID's Public Comments, slide 10: Water Rights and Flow Shifting]	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.
873	67	[ATT1:ATT9: MeID's Public Comments, slide 11: Merced River as Delta Tributary]	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.
873	68	[ATT1:ATT10: MeID's Public Comments, Comparison of Minimum Flows graph]	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.
873	69	[ATT1:ATT11: MeID's Public Comments, Water Supply Impacts graph]	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.
873	70	[ATT1:ATT12: MeID's Public Comments, slide 14: Operational Issues]	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.
873	71	[ATT1:ATT13: MeID's Public Comments, slide 15: SED Has Multiple Technical Problems]	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.
873	72	[ATT1:ATT14: MeID's Public Comments, slide 16: SGMA Identified Undesirable Impacts]	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.
873	73	[ATT1:ATT15: MeID's Public Comments, slide 17: SED Did Not Analyze the Following Impacts]	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.
873	74	[ATT1:ATT16: MeID's Public Comments, slide 18: maps of area relying on groundwater pumping, before and after SED]	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.
873	75	[ATT1:ATT17: MeID's Public Comments, slide 19: Merced Sub-basin Existing Conditions map]	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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Ltr#	Cmt#	Comment	Response
873	76	[ATT1:ATT18: MeID's Public Comments, slide 20: Merced Sub-basin Existing Conditions map]	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.
873	77	[ATT1:ATT19: MeID's Public Comments, slide 21: Merced Sub-basin Existing Conditions graph]	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.
873	78	[ATT1:ATT20: MeID's Public Comments, slide 22: SED Impacts to Groundwater Availability]	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.
873	79	[ATT1:ATT21: MeID's Public Comments, slide 23: SED Impacts to Groundwater Quality]	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.
873	80	[ATT1:ATT22: MeID's Public Comments, slide 24: SED Impacts to Groundwater Quality graph]	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.
873	81	[ATT1:ATT23: MeID's Public Comments, slide 25: Regional Subsidence]	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.
873	82	[ATT1:ATT24: MeID's Public Comments, slide 26: Summary of SED Impacts to Groundwater Basin]	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.
873	83	[ATT1:ATT25: MeID's Public Comments, slide 27: Central Valley Fall-Run Escapement graph]	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.
873	84	[ATT1:ATT26: MeID's Public Comments, slide 28: SED Does Not Support Fish Conclusions]	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.
873	85	[ATT1:ATT27: MeID's Public Comments, slide 29: SED Does Not Support Habitat Conclusions]	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.
873	86	[ATT1:ATT28: MeID's Public Comments, slide 30: SED Inappropriately Relies on Floodplain Inundation Benefits]	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.
873	87	[ATT1:ATT29: MeID's Public Comments, slide 31: Dredge Windrow/Dredge Tailings Not Suitable Floodplain Habitat]	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.
873	88	[ATT1:ATT30: MeID's Public Comments, slide 32: SED is Not Adequate Technically]	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.
873	89	[ATT1:ATT31: MeID's Public Comments, slide 33: SED is Not Adequate Technically]	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.
873	90	[ATT1:ATT32: MeID's Public Comments, slide 34: Project Goals are Unfounded and Not Met]	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.
873	91	[ATT1:ATT33: MeID's Public Comments, slide 35: Closing Comments]	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.
874	1	I agree with Merced Irrigation District's plan. I think now is the time to implement that SAFE Plan. We can get water now, instead of fighting in court for years. I think they have a good 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.

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Ltr#	Cmt#	Comment	Response
875	1	I'm against a State Water Resources Control Board that will increase the flows to the Delta. This plan will have negative impacts on the entire San Joaquin Valley. It will lead to thousands of acres of productive farmland being fallowed. Which, in turn, can lead to greater soil erosion and the reduction of air quality in the Valley.	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.
875	2	This plan will greatly reduce the thousands of acres of wetlands and the wildlife habitat that they provide, all through the use of surface water. This includes both National and State Wildlife Refuges, many conservation easements that are currently in place, as well as the many private duck clubs in the area.	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.
875	3	I do not believe your Board and staff have taken the realistic view of my concerns because there has been no mention of them in any of the documents that I've seen, or comments in the previous meetings.	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.
875	4	There will never be enough water until you fix the real problem of not enough storage in the State, and for all the parties that are concerned.	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.
876	1	<p>In my review of the report, I saw a lot of variables that I didn't think were considered. Then, you know, when I hear the report from the gentleman earlier this morning, you did consider some economic effects. But the problem is, is you just glassed [sic] over them.</p> <p>I don't think that you really took it in your heart to see what the results of these moves are. You affect our ag, our ability -- these gentlemen, men and women here -- their ability to produce. You take their water away, you take their livelihood away. Not right. Many of these people are living on farms that their families have been building for generations. It's not right to take their water away so that they stop producing.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues or make a general comment regarding the plan amendments and general information regarding the economic analysis.</p> <p>Please also see Chapter 20 of the SED, Economic Analysis, and Master Response 8.0, Economic Analyses Framework and Assessment Tools; Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model; Master Response 8.2, Regional Agricultural Economic Effects; and Master Response 8.4, Non-Agricultural Economic Considerations, for additional discussion of economic effects of the plan amendments.</p>
876	2	<p>Industry; you've already heard that we're a poverty-stricken area. But I've got to tell you, you take the water away and we're going to lose more jobs. More people will fall into that poverty level. But what you don't realize is, that we're Merced and we've got some pride and we've got spirit. And we're not going to let you get away with taking us down.</p> <p>You know, like I said, everybody's said this so eloquently before me, I'll just leave you with one thing. Please think about people, not fish. You can do better than that.</p>	<p>Please see Master Response 2.7, Disadvantaged Communities, regarding the plan amendments as they relate to disadvantaged communities (DACs), consideration of DACs in the SED, and the State Water Board's technical and financial assistance programs for DACs.</p> <p>Please see Master Response 1.1, General Comments, regarding economic considerations in the SED.</p> <p>Please see Chapter 20, Economic Analyses, regarding consideration of regional economic effects due to implementing the plan amendments, which includes jobs and fiscal analysis in Section 20.3.</p> <p>Please refer to Master Response 8.2, Regional Agricultural Economic Effects regarding potential effects of the plan amendments on employment.</p>
877	1	<p>I'd like to challenge you, today, by taking a step back from following the agenda, and recommitting to the mission statement I observed on your website the other day. Which, in a nutshell, is to do what is best for California in regards to water. Forty million Californians and the sixth largest economy in the world depend upon that.</p> <p>And the impact that California agriculture plays is none less staggering when you consider that. I'd like to respectfully remind you that your decisions will have a vast and far-reaching impact on California.</p>	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
877	2	We've heard many differing opinions and viewpoints in the other hearings today, and the other hearings, but have you truly considered the potential impact on property values by this loss of 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.

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>No one wants to deplete the salmon populations or put them in peril, but it does make sense, and it is reasonable to be so -- is it so reasonable to be so focused on fish that we lose sight of one of our most important resources? The math simply does not add up. When you contrast the potential impact on California farmland and agricultural products that are in the billions, versus 1,100 salmon, this proposal just collapsed under that enormity.</p>	
877	3	<p>I would challenge you today to step back, take another look at that, and I would implore you to put this one aside and look at other, more reasonable, more well-thought solutions to this problem.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
878	1	<p>While we've been working hard to build our community into a thriving, desirable place to live, we also want to understand, and hopefully, you understand, that Merced County faces some daunting challenges. Over 81 percent of our population, in this region, lives in areas designated as economically disadvantaged, or severely disadvantaged. Merced County has held kind of an unenviable position, during the great recession, of being one of the top ten metropolitan areas with the highest foreclosure rates in the nation. Though the unemployment rate in Merced County has gone down and we anticipate, hopefully, for the future it to continue in that trend, it is, at 9 percent, twice what the State average is and what the national average is. It's still a dismal number. Even now, Merced County is only slowly recovering from the great recession. And, obviously, from this morning you got a sense. We may be poor economically, but we're not poor in spirit. And you probably got a sense of that spirit this morning.</p> <p>Under the proposed SED, our region and these disadvantaged communities are facing even bleaker outlook. We know that you've done an economic analysis that shows an economic impact of about 433 job losses, and \$64 million to the regional economy, over three counties. However, our economic analysis, and that information's just being made available, and we will share it with you, shows that the SED dramatically underestimates the economic impact. These independent analyses that show over 900 jobs lost, just in Merced County, alone. And the economic impacts of closer to \$231 million, just in our community.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues or make a general comment regarding the plan amendments and general information regarding the economic analysis.</p> <p>Please see Master Response 2.7, Disadvantaged Communities, regarding effects related to disadvantaged communities.</p> <p>Please see Master Response 8.2, Regional Agricultural Economic Effects, for discussion of the economic analysis performed by Merced Irrigation District.</p>
878	2	<p>According to Stratacon, Inc.'s economic analysis, San Joaquin County, Stanislaus County, and Merced Counties could be facing long-term impacts of over \$7 billion, over the 50 years. And much of this could be related to the fact that the loss of water impacts the value of the land that folks have, and then the economic impact in terms of to our local government.</p>	<p>Please see Master Response 8.2, Regional Agricultural Economic Effects, for discussion of the economic analysis performed by Stratecon, Inc. Also, please see Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results, for estimates of tax revenue impacts for local governments. Finally, please see Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model, regarding the scope of the agricultural economic analysis and property values.</p>
878	3	<p>Over the past five years, the communities in the San Joaquin Valley have been weathering one of the worst droughts in California history. Responses to the drought conditions have led to increasing groundwater pumping, wells going dry, the lowering of groundwater levels. At the same time, our water management agencies, in the Merced Groundwater Subbasin, a high priority, critically overdraft basin, has come together to address these issues under SGMA.</p> <p>Additionally, the County has implemented a well ordinance and a transfer ordinance of water, groundwater out of our community in attempting to address that issue.</p>	<p>The State Board Water appreciates the efforts that water management agencies in the Merced subbasin have made to address groundwater issues and comply with SGMA, including the County of Merced's 2015 groundwater ordinance.</p> <p>The existing groundwater overdraft conditions and resulting land subsidence in the Merced subbasin are legacy issues caused by unsustainable agricultural expansion; SGMA was passed by the legislature in 2014 to address overdraft issues. The State Water Board acknowledges that it will be challenging, but SGMA compliance cannot occur at the expense of reasonably protecting surface water beneficial uses; both groundwater and surface water must be protected.</p> <p>The SED and plan amendments do not require or encourage increases in groundwater pumping as a response to reductions in surface water. Rather, the SED reflects the historical response of water users to increase groundwater pumping when surface water availability is reduced. It will be up to local entities to determine the precise actions that would be taken in response to implementation of plan amendments, with</p>

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			<p>or without the future condition of SGMA. Comprehensively addressing both resources allows for integrated planning that does not trade impacts between surface water and groundwater and ensures long-term adequate drinking water supplies.</p> <p>The State Water Board appreciates the county’s willingness to share information and looks forward to working with the county on implementation of the plan amendments.</p> <p>For further discussion on groundwater overdraft as a legacy issue, groundwater recharge, and compliance with SGMA in the context of the plan amendments, please see Master Response 3.4, Groundwater Resources and the Sustainable Groundwater Management Act.</p> <p>Please see Master Response 3.6, Service Providers, for a discussion on the reason why the LSJR flow objectives would not jeopardize municipal water supply.</p>
878	4	Should the SED be implemented, surface water recharge, one of the most important tools for bringing the subbasin into sustainable condition, will be greatly reduced. Leaving, really, the only option, which is fallowing of property.	Please see Chapter 9, Groundwater Resources and Master Responses 3.4, Groundwater and the Sustainable Groundwater Management Act, regarding the relationship between the plan amendments and SGMA, potential reduction of surface water recharge that could result in response to implementation of the plan amendments, and SGMA’s description of “sustainable.” Please see Chapter 11, Agricultural Resources, regarding a discussion of potential impacts on agricultural resources and fallowing. Fallowing is one potential response to potential reductions in surface water supply. However, other possible responses include growing crops that require less water, as described in Chapter 11.
878	5	All of the benefits of this take are identified as potentially--and I, frankly, was using the 1,100 figure, but I’ll take MID’s number, which was 400 fish out of the Merced area.	Please see Master Response 3.1, Fish Protection, regarding SalSim and the benefits of the plan amendments.
878	6	<p>On November 29th, the State Water Board requested a little bit more information from us regarding land subsidence potential, and water quality impacts related to unimpaired flows [ATT1:ATT1]. First, I’d like to give a tremendous amount of credit to Michelle Sneed and others at U.S. Geological Survey, for many of the images and the texts that you’ll see.</p> <p>So, a very brief explanation of land subsidence. Where there’s pour space between particles, especially where they’re clay, these clay-like particles are shaped like small plates. When there’s pumping that occurs, it reduces the pour pressure between those plates, and those plates tend to collapse on top of one another, reducing the overall volume available for storage and reducing yield. The ultimate impact is the land deforms at the surface and creates a tremendous number of problems for us. And the largest problem that we have, where we would have the lack of surface water, would be groundwater storage capacity reductions.</p> <p>This image [ATT1:ATT2], also from U.S. Geological Survey, shows soil texture from borehole logs, throughout the Central Valley. The most dominant feature here is the blue tone, which clearly indicates that much of the soil beneath us, where our groundwater is derived, has a high clay content and is very susceptible to subsidence [ATT1:ATT3]. Flood protection and infrastructure is in question [ATT1:ATT4]. Natural resource impacts, also problematic.</p>	Please see response to Comment 878-3.
878	7	This particular slide [ATT1:ATT5] shows trends over time that, in essence, even in periods of non-drought conditions, subsidence can continue and does continue. These are satellite images [ATT1:ATT6], again from U.S. Geological Survey, between 2003 and 2010. The circle to the south is historic subsidence where, through surface water deliveries in the mid-1900s, late-1900s I should say, it resolved some of that subsidence problem through the	Please see response to Comment 878-3.

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		<p>Delta-Mendota Canal, in particular, as agricultural deliveries to the Tulare Basin.</p> <p>New subsidence has been observed, particularly in the last five years. And one of the problems that we have, and that we would be looking for, hopefully, in additional assessment in the SED, would be to look at subsidence on the eastern side of Merced County. As you can see, there's a large void there.</p> <p>So, it's a rather busy slide [ATT1:ATT7], but I think the important issue to take note is within the black box. That in the south central part of our County, near El Nido, the U.S. Geological Survey's recorded land subsidence of at least 21 inches in a two-year period. And that's a substantial amount of subsidence. It's affected our eastside flood bypass control structures. And it's impacted many surface water deliver, and other infrastructure conveyances, et cetera, in a negative manner.</p> <p>So, that same black box, if we take a little bit closer look at that, we've converted the metric to--in the larger color image, those values there are in inches [ATT1:ATT8]. So, you can see along the axis of A to A prime, going from north to south, you can see a fairly significant deformation in the bypass. And what that basically means is we no longer have the flood control that we had, previously. And trying to keep up with that is a costly endeavor, no doubt.</p>	
878	8	<p>As it relates to surface water delivery, [subsidence] work was done in 2003 to 2008, in the lower sections of the Delta-Mendota Canal. And, more recently, between '07 and '10. And the significant take-home message here is where subsidence has impacted the Delta-Mendota Canal [ATT1:ATT9], that loss of capacity there, in essence water can't run uphill, even though it's a very small amount of subsidence, only about 15 millimeters. That loss in storage capacity restricted flow to the San Luis Reservoir and water delivery was unavailable.</p>	Please see response to Comment 878-3.
878	9	<p>The future of land subsidence is probably the most interesting piece of this discussion [ATT1:ATT10], related to specifically the land subsidence in general. This is relatively new information from U.S. Geological Survey. And what the color map basically indicates is those tones that are lighter in pink, particularly along what we'll call the Chowchilla Alluvial Fan, and the Fresno Fan, which the Chowchilla is adjacent to us, to the south, where the Chowchilla River--excuse me, the Madera and Merced County boundaries adjoin.</p> <p>That because of those fine grain materials in that area, with just a small amount of pumping influence, those areas are exceptionally vulnerable to further subsidence. In the absence of surface water deliveries, the likelihood of more subsidence is quite high. And, so, over the last century, estimates are that we've lost probably close to 200 million acre-feet in storage.</p>	Please see response to Comment 878-3.
878	10	<p>Economics. This one is very difficult to estimate because, oftentimes, as work is performed they don't connect it to subsidence, itself. But in looking through some data, again provided by U.S. Geological Survey, Santa Clara Valley had costs to \$375 million that was documented. The San Joaquin Valley, to date, maybe \$145 million. Probably much more. And Long Beach, historically, over \$600 million.</p> <p>So, it's further broke down for the Santa Clara Valley. They did a great job of connecting subsidence to specific types of work, damage, and repair. When we add those up, to date in California, it's in excess of a \$1 billion impact from just the recorded subsidence, alone [ATT1:ATT11]. The question mark is what is the current cost in the San Joaquin Valley and</p>	Please see Chapter 20, Economic Analyses, Section 20.1, Introduction, and Master Response 8.0, Economic Analyses Framework and Assessment Tools, for a description how economics was considered in the SED and the tools used. As noted in Chapter 9, Groundwater Resources, Section 9.1, Introduction, "The impacts of the LSJR alternatives on ... risk of subsidence cannot be determined with certainty because groundwater conditions vary within each aquifer subbasin and water users would have varied responses to reduced surface water deliveries." In addition, SGMA would require local management actions over medium- and high-priority basins that are at highest risk. The management plan or potential actions by a yet-to-be formed local agency are highly speculative (please also see Master Response 3.4, Groundwater Resources and the Sustainable Groundwater Management Act). The groundwater analysis in Chapter 9 acknowledges that in some cases there could be additional subsidence without local action; however, given the unknown and

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		what will it be in the future with lack of surface water, and additional pumping?	speculative nature of the location and magnitude of effect, it is not possible for the State Water Board to quantify the potential economic effect.
878	11	<p>Harmful algal blooms and other components, biological components in surface waters are becoming more and more prevalent [ATT1:ATT12]. Although they're referred to as algal blooms, the materials that we're seeing [in] the San Luis Reservoir, for the first time this summer, at very, very high concentrations, are associated with a 25-year low in the San Luis Reservoir storage elevation.</p> <p>And the values that we saw out there for Microcystins, which are actually a cyanobacter--excuse me, cyanobacteria, are probably very close to 16, almost 17 times the action level for human health and animal exposure. So, the result of that was posting at the San Luis Reservoir [ATT1:ATT13], and some other local surface waters, where contact sports, swimming, animal exposures were not just dangerous, but toxic. And it's quite alarming to see that this is a possibility for surface waters were elevations in storage reservoirs are lowered and it is very concerning from a public health perspective.</p>	<p>In general, the higher instream flows of the plan amendments may help reduce harmful algal blooms. Please see Master Response 1.1, General Comments, for a discussion of harmful algal blooms in the Delta. The plan amendments would be unlikely to cause harmful algal blooms in reservoirs because, as described in Appendix K, reservoir storage would be maintained at levels that would help ensure that providing flows to meet the flow objectives would not have adverse temperature or other impacts on fish and wildlife. Furthermore, Phase 1 of the plan amendments would not result in reductions in San Luis Reservoir storage.</p>
878	12	<p>Loss of surface water. Reduced opportunities for surface water-reliant groundwater recharge. Without surface water we can't do recharge in a predictable manner. Increased dependence on stressed groundwater resources, and deterioration of groundwater and water, not just groundwater, but surface water quality, is also a possibility and a concern of ours. And land subsidence impacts to all kinds of conveyances, transportation, a variety of different infrastructure. We see many more wells that are groundwater wells, and other types of wells in the subsurface, that are being either compressed, or fractured by subsidence-related physical forces.</p>	Please see response to Comment 878-3.
878	13	<p>We talked about this the last time we were here, the disproportionate impacts to disadvantages communities is of great concern to us. The image [ATT1:ATT14] on the lower right is one of many residences in the County that receive tanked water, and it's a potential site, you know, could possibly see again, that we'd really like to avoid.</p>	Please see Master Response 2.7, Disadvantaged Communities, regarding the assessment of potential impacts of the plan amendments related to disadvantaged communities (DACs), the human right to water as it relates to DACs, and the State Water Board's technical and financial assistance programs for DACs.
878	14	<p>The real question for the staff is, if you have an interest, we would be more than happy to share more information on land subsidence, and water quality, and the impacts that it has had to our community, and the potential impacts, and data that we have, that we can share with you. That I think we could make, potentially, a better product in the SED.</p>	Please see response to Comment 878-3.
878	15	<p>[I am a] Farm Advisor with University of California, Cooperative Extension, here in Merced County. I work predominantly with farmers and consultants who work with the vegetable crops. So, most of my presentation seems to be geared towards that type of commodity. However, obviously, we also grow a lot of almonds, in orchards, and other things in the County, as well.</p> <p>The main purpose of my presentation today is essentially to probably remind you of something that you already know. But I think that it's important because soil salinity is not just an issue that only occurs on the west side of the valley or in the south valley. Sacramento does not have nearly the issues with soil salinity, even Stockton area. It starts to pick up significantly in and around Merced County. As you can kind of see by this map [ATT2:ATT1] that's there, that's showing the percentage of saline-impacted soils. As you go from north to south in the San Joaquin Valley, it starts to become fully red by the time you get down, you know, closer to Bakersfield. But it's starting to get yellow and red in our</p>	<p>This comment is summarizing information about soil and soil salinity in the plan area. Please see Chapter 11, Agricultural Resources, Section 11.2.1, Soil and Water Quality, for information on soil salinity. This comment does not make a general comment regarding the plan amendments or raise significant environmental issues. No further response is required.</p>

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		<p>community, as well.</p> <p>Now, this [ATT2:ATT3] is kind of zooming in more on just the east side part of the County. As you can see, the black lines here would represent Highway 99, kind of going in that diagonal, north/south direction. And then, Highway 140, going towards the west, from Merced to Gustine, for those of you who know where I'm talking about. The soil types in this area, to under that line are very saline. And we have a lot of issues with salt as a result of that. There are some soil types, to the north of that line, that also have some saline issues, though not nearly to the extent. So, it's not limited to just west side, west of the river, this kind of thing. Even though, of course, they have their saline issues, as well.</p>	
878	16	<p>Even though we are predominantly a granitic type of geology in this [Merced County] area, and we have access to good quality surface water, when it is available, we do have some soils that have the potential for having a high--a lot of salt. This is important because crops are--salt is bad. Basically, just like you and I can't drink ocean water, plants don't like salty water, either. Depending on the crop, some are more sensitive than others.</p> <p>Again, this is just predominantly showing vegetable crops [ATT2:ATT4]. We know this information for trees, as well, and for grapes, and for the agronomic crops, like corn, and alfalfa, and things like that. But they vary. So, there's very different kinds of tolerance to salinity, as you're probably well aware. Of which, some of the vegetable crops tend to be more sensitive than like corn, or alfalfa, or cotton.</p>	<p>Please see Chapter 11, Agricultural Resources, Section 11.2.2, Lower San Joaquin River Watershed and Eastside Tributaries, for information on irrigation and water quality. The Environmental Settings and Regulatory Background sections of Chapter 11 (Sections 11.2 and 11.3) were prepared by reviewing publicly available data and information including agricultural water management plans. The "Terrain and Soils" sections of the district plans do not state any areas with poor crop production due to water quality.</p> <p>For waters with salinities less than 5 dS/m, the conversion between part per million (PPM) and conductivity is approximately 640 PPM = 1 dS/m or 1,000 uS/cm (Ayers and Westcott 1994). Groundwater quality data in the Agricultural Management Plans report groundwater quality up to 600 PPM (approximately 0.94 dS/m or 937 uS/cm) for the majority of the plan area. For example, Merced ID states that generally total dissolved salts (TDS) tends to increase heading westerly with a range between 250 PPM to 600 PPM (Merced 2016). One area within the Merced ID with higher levels includes the western edge of the district where there are pockets of electrical conductivity greater than 2,200 uS/cm (2.2 dS/m or approximately ~1,400 PPM) (Merced 2015). Unfortunately Merced ID did not report the extent of the greater than values so the upper limit is unknown (Merced 2015).</p> <p>The use of groundwater, properly managed, for irrigation in parts of the plan area is not expected cause a problem for crop production, given the salinity information cited above, estimates of leaching fractions, and the types of crops grown in the plan area. The long-term use of a given water quality along with a consistent leaching fraction would result in a steady-state soil salinity (ECe) that can be estimated using a concentration factor (Ayers and Westcott 1994). For example, a leaching fraction of 15–20 percent is associated with a concentration factor of 1.45, which means that the ECe would be 45 percent higher than the EC of the applied water.</p> <p>Even the high end of the typical Merced ID range of EC values (600 PPM) could be used successfully for growing salt sensitive crops (e.g., beans), which require an ECe of 1.0 dS/m (Ayers and Westcott 1994). Assuming a river water salinity of 100 PPM (0.16 dS/m), groundwater salinity of 600 PPM (0.94 dS/m), a typical leaching fraction of 15–20 percent, and a concentration factor of 1.45 (Ayers and Westcott 1994), a grower could have almost 70 percent of the applied water be supplied by groundwater. If the crop was alfalfa, which has an ECe threshold of 2 dS/m for 100 percent yield potential then the grower could use 600 PPM water for the full water supply. These examples do not include precipitation or an assessment of the frequency of exclusive use of high quality river water, both of which would reduce soil salinity (ECe). These examples show that the groundwater quality in the plan area would not be expected to reduce production.</p> <p>This comment does not raise significant environmental issues.</p>
878	17	<p>This would be a general equation for talking about crop water use [ATT2:ATT5]. And you can even relate this to your efficiency of crop water--or water use. As in agronomy, or in agriculture, it would be the amount of water applied versus the amount of yield that you get. Okay? And, so, the depleted moisture, essentially, is our crop evapotranspiration.</p>	<p>Please see Chapter 11, Agricultural Resources, Section 11.2.2, Lower San Joaquin River Watershed and Eastside Tributaries, for information on irrigation and water quality. This comment does not make a general comment regarding the plan amendments or raise significant environmental issues. No further response is</p>

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		<p>Though we haven't--we need a leaching requirement in western irrigated agriculture.</p> <p>Then, you have your application efficiency. You divide this by your application efficiency which is, essentially, the way we water. That's our irrigation system. That's the way we deliver water. So, there are different efficiencies. What we have done, since this drought began, for all intents and purposes, is we've eliminated the leaching requirement from this equation [ATT2:ATT6], in order to save water.</p>	<p>required.</p>
878	18	<p>You have essentially entered into, for many crops in our area, and others throughout the State of California, you've gone to a system where you're deficit irrigating, more or less. Not everywhere, not always. We try to--we have several tricks up our sleeve to try to make this work, where you deficit irrigate at only certain times during the year, and things like that, to make this less impactful on yield, on how well the crop is growing. So, we've essentially eliminated that leaching requirement and we've just been going by ET, and we're trying to use as much efficient irrigation as possible. We've had a big increase in the amount of drip-irrigated use. Processing tomatoes in the past, when I started in 1998, we were probably at around, I'll say, 25 percent of the acres. Now, we're at over 90 percent.</p> <p>The problem is, is that all this deficit irrigation that we've been doing, or eliminating the leaching requirement, is starting to cause effects even in areas that do not have saline soil types. For example, on east side of Merced County you get orchards, now, that are starting to develop high loads of sodium and other salts in their leaf tissue, which is a reflection of, essentially, not being irrigated with enough good water [ATT2:ATT7].</p>	<p>Please see response to comment 878-16. This comment does not raise significant environmental issues.</p>
878	19	<p>You see this [ATT2:ATT8]? Welcome to Merced County. We're the area in the United States that produces sweet potatoes. And for everybody else, too, we are the area of the Western United States where you will get your sweet potatoes from, if you eat sweet potatoes. It's a big crop here. And it's one of the more sensitive crops to salt, not only from the direct impacts of during the growing season, but since this is a stored product it also affects how well they store. And you get this kind of deterioration. This is an abiotic disorder. This is not being caused by some kind of disease or something like this. This is actually cellular death, within the product, as a result of too much salt in the plant tissue.</p>	<p>This comment is providing information about sweet potatoes and salt. This comment does not make a general comment regarding the plan amendments or raise significant environmental issues. No further response is required.</p>
878	20	<p>We know that we can use good water as a way to leach salts out of the soil. So, basically, there are three ways that we deal with salts in agriculture, and leaching is one of them, and as you probably all know. This leaching requirement, leaching works a lot better when you have good quality surface water. As you can see from this diagram, which is just basically showing--this would be EC, which is electro connectivity, which how salty the soil is [ATT2:ATT9]. And then you apply some good quality water, in this case through a drip irrigation system, and the whole profile turns blue, which means that you've gotten rid of your salt. That's a good thing. That's what you want, if you want to have any kind of long-term sustainability of the agroecosystem.</p> <p>Now, we've done a lot of work. Not me, specifically, on this particular slide [ATT2:ATT10]. This is done by an irrigation specialist from UC Davis, by the name of Blain Hanson. He's done a lot of work on many different crops. Just an example in that, you know, if you can't leach, you get yield reductions. If you can leach, then you improve your yield. And, therefore, you improve your efficiency of your use of water.</p>	<p>Please see response to comment 878-16. This comment does not raise significant environmental issues.</p>
878	21	<p>Salinity is not just a south, a Southern California or a west side issue [ATT2:ATT11]. And I knew that you probably all realize this. But we use our deficit--we over-apply water to deal</p>	<p>Please see response to comment 878-16. This comment does not raise significant environmental issues.</p>

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		<p>with this salt issue. Which is, in and of itself, you know, just another layer of the nitrogen management issues that we have to deal with at the same time. It's just another thing we have to kind of think about.</p> <p>But the lack of canal watering is going to result in increased well water use. Increased well water use or deficit irrigation is just going to increase the amount of salinity in our soil. Which means that it just is this--it's just this vicious snow effect that's taking place. A vicious circle that we find ourselves in. We can't deal with the salinity unless we can irrigate. And we have to irrigate with good quality water. And we're not going to get that from a lot of wells, because the wells are salty, now, because they're not having the leaching. And it just goes on and on.</p> <p>So, low EC canal water is necessary for long-term crop productivity and long-term sustainability. We are seeing the impacts of not having enough surface water, even in our low-saline soils that are more common in the east side, east of the river here, in Merced County.</p>	
878	22	<p>The Delhi County Water District is the largest -- well, it's a district, it's a water and sewer district, and it serves the largest unincorporated area in Merced County, about 10,000 people. Less than 3,000 customers is the base. You know, obviously, it's enterprise fund. We try to run it like a business. We have a long-range, you know, capital operating and financial plan that we update every year for the District. The primary focus, of course, is fiscal, operational viability over time, and the continuity of service for the community. We're the ones that don't want anybody to turn on the faucet and see sand coming through it.</p> <p>One of our major concerns is the impact of uncertainty, of a huge issue like this, for the District. And we're kind of where the rubber meets the road. And we've dealt with, you know, the drought. We've adapted to that. We think, really, from a long-range planning perspective, SGMA is great for the State. You know, we're heavily participating in that and a lot of support of that. But, you know, we're like any district, we deal with water quality issues, problems with aging infrastructure, increasing operational demands [ATT3:ATT1]. I mean, this stuff never gets easier. It always gets harder.</p>	<p>Please refer to Master Response 1.1, General Comments, regarding the purpose of the plan amendments and the programmatic nature of the SED.</p> <p>Please refer to Master Response 2.7, Disadvantaged Communities, regarding resources to address or mitigate impacts related to disadvantaged communities.</p> <p>Please refer to Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, regarding groundwater and SGMA.</p>
878	23	<p>[Delhi County Water District is] like most small districts; we kind of face the problem of limited resources [ATT3:ATT2]. You know, case in point, although very successful, our conservation measures that we've taken during the drought, have had a significant impact on our revenues. Because a lot of our revenues in the past had come from over-charge--charging for over-use of water. Well, the community was great, they complied with our conservation measures and now we're losing out on the revenue. And we're losing out on that revenue and we're still in the midst of a five-year rate study, with rate increases every year, and we're not meeting our expectations in those areas. So, that's concerning to us.</p> <p>Most small districts operate with very limited reserves. Basically, we have reserves for cash flow purposes, for contingencies and exigency situations. And then, the remainder of our reserves are completely earmarked for infrastructure and capital replacements.</p> <p>And for anyone to have a viable business in the long term, you have to replace the infrastructure, the equipment. You have to keep your capital acquisitions in good shape. And there are certain segments of funding that they're sort of a different color of money. We can't spend our impact fee money for replacement of existing equipment and assets. That's earmarked, basically, for items that are related to growth and development. And we,</p>	<p>The comment is providing information regarding conservation measures, rate studies, and rate increases associated with providing municipal water. The State Water Board acknowledges Delhi County Water District's water conservation effort and ongoing commitment to demand management.</p> <p>Please see Master Response 2.7, Disadvantaged Communities, regarding funding and assistance sources and small public water systems. Please also see Master Response 8.4, Non-Agricultural Economic Considerations, for a discussion related to potential municipal economic effects and regarding water supply uncertainty and effects of the plan amendments on water supply infrastructure and planning, as well as water rates.</p>

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		like most small districts, are very cognizant of that factor.	
878	24	[Delhi County Water District is] really concerned that this proposal will impact a decade of capital and operational planning that has been ongoing. I have projects right now that are underway, that I'm sort of second-guessing myself on them. The Board, our Board, is rethinking those projects. We're concerned because producing--finishing a project that doesn't provide long-term value for the community, that's--I mean, that's sacrilege for us, you know, I mean and we're concerned of that.	Please refer to Master Response 8.4, Non-Agricultural Economic Considerations, regarding water supply uncertainty and effects of the plan amendments on water supply infrastructure and planning.
878	25	<p>We [Delhi County Water District] feel that we've already increased our rates. You know, we think that there is the potential for other, additional huge rate increases. If there is an economic impact in the area, our area is heavily supported by the agricultural sector. So, what happens is, if we get businesses that basically exodus, that leave the area, then we have--and we have residential customers that leave the area, too, and we have additional operational and capital costs brought on by this proposal, that the remaining customer base will essentially be--have the prisoner's dilemma, you know. They're going to get higher rates. There's going to be fewer customers to pay those higher rates and that's just going to drive the costs up, and may make the area just financially, operationally unviable for the future.</p> <p>That's kind of one of our biggest concerns. And not only on the operating end, on water, then basically that there's a peripheral impact on the wastewater operation, too, if those customers leave. So, you know, those are huge concerns, you know, for us.</p>	Please see the response to comment 878-23 regarding municipal water supply and economic considerations.
878	26	I've worked for cities that had plenty of staff. When we had a problem, we could muster the troops and put a team together, and tackle a problem and deal with it. Well, the scaling of staffing and the--on a small district basis is a totally different dynamic. I mean, you do not have the staffing capacity. It's not because you don't have really good staff, you know, it's because you just don't have the capacity to deal with it [ATT3:ATT3]. And right now many small districts are over-taxed, just dealing with the drought, dealing with SGMA, dealing with regulatory issues, as it is now. So, you know, that's a--it's a financial issue, but it's also an operational issue, too.	Please see the response to comment 878-23 regarding municipal water supply and economic considerations. Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. Please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, for information regarding SGMA.
878	27	<p>I'm representing the 70,000 pre-K-12 grade children, and students attending schools in [Merced] County [ATT4]. Of that 70,000, about 20,000 students are on campus, and get their water for drinking, for sanitation, and for restrooms from a well on their campus. And under the Board's proposal, I'm confident that these wells are going to go dry.</p> <p>But before the groundwater becomes nonexistent, I think school districts will probably spend millions of dollars of taxpayer money, intended to be spent on educating those students, on drilling new wells, bottled water, and Porta Potties. Because we know that, as a well goes dry, they're going to drill new ones and have to mitigate whatever they can do to get by. And I know that you're already in possession of this information from your Division of Drinking Water, outlining existing water challenges facing Merced County schools.</p>	<p>The plan amendments and the SED do not require or encourage increased groundwater pumping to replace a reduction in surface water. The SED merely reflects the historical local response to increase groundwater pumping when surface water availability is reduced. The existing groundwater overdraft is a legacy issue caused by unsustainable groundwater pumping to support agricultural expansion. Overdraft is what caused the wells at Le Grand Elementary School to go dry. If local water users choose to continue to pump more groundwater, with or without the plan amendments, overdraft will continue to increase.</p> <p>The legislature passed SGMA in 2014 to address the problem of overdraft in California's groundwater basins. However, SGMA compliance cannot occur at the expense of reasonably protecting surface water beneficial uses. Local entities will need to comprehensively address both surface water and groundwater based on the needs of all beneficial uses and users of water. This will allow for integrated planning of scarce water resources and a reliable long-term supply of drinking water for school children.</p> <p>For further discussion on groundwater overdraft as a legacy problem and SGMA in the context of the plan amendments, please see Master Response 3.4, Groundwater Resources and the Sustainable Groundwater Management Act.</p> <p>For information on the State Water Board's technical and financial assistance programs for disadvantaged</p>

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			<p>communities to address their drinking water issues (including the Drinking Water for Schools Grant Program for the purpose of improving access to, and the quality of, drinking water in public schools), please see Master Response 2.7, Disadvantaged Communities.</p> <p>Potential impacts of the plan amendments on groundwater resources are discussed in Chapter 9, Groundwater Resources, Section 9.4.3, Impacts and Mitigation Measures. However, quantifying the impacts of the plan amendments on groundwater resources at a programmatic level is speculative, because of the many site-specific mitigation actions that local water users could take in response to a reduction in surface water.</p> <p>Please see Master Response 1.1, General Comments, for a discussion regarding the scope of the SED, mitigation measures and the CEQA requirements for program-level review.</p>
878	28	<p>Some of our [Merced County] schools have received notices, from your Division of Drinking Water, acknowledging single sources of water and requiring the schools to, and I quote from your letter, "Develop a drought contingency plan to deal with possible shortages and outages." In light of these notices, it is clear that the Board knew of existing threats to the water supply and, nevertheless, proposed a plan that will make the challenge more difficult, especially in these drought years.</p> <p>Reducing the amount of surface water increases groundwater pumping and drops the groundwater levels. In 2004, Le Grand Elementary drilled a new well. And at that time, the water level was 174 feet. And, so, they had a new one and an old one. The old one went dry in 2015. And when they went to hook everything up to the new one, they realized that that water level was down to 271 feet. And as the slide clearly shows [ATT4:ATT1], in 11 years that groundwater level dropped 97 feet. That's almost 9 feet a year.</p> <p>Now, I know that in the San Joaquin Valley, over the last 30 to 35 years, maybe except for the drought, the water levels have been dropping about a foot a year. So, for this to be nine times that, during a very short period of time, really underlines the problems that we're facing in the Le Grand/Planada area. So, I'm thinking that it is important to know that that groundwater is going to disappear. And then, what do we do with those schools?</p>	<p>Please see response to Comment 878-27.</p>
878	29	<p>In one of the letters I sent to you, from our legal counsel, it said, "While recognizing significant, but unavoidable, environmental impacts within our client schools and students, the Plan fails to discuss mitigating these impacts in order to be in compliance with the California Environmental Quality Act."</p>	<p>Please see Master Response 1.1, General Comments, regarding proposed mitigation throughout the SED.</p>
878	30	<p>I consider your actions, thus far, as discriminating against mostly minority and low-income children. Dr. Tietjen talked about that a little bit, earlier on. He's going to be my successor. And, as well as an infringement on their right to a free public education, guaranteed by Article 9, Section 5, of the California Constitution. Please, make no mistake, and I want to be on the record that we are prepared to vigorously protect our schools and children, and will take any legal action necessary to do so.</p> <p>As an example of the reduction of water, I cite the Le Grand Elementary School. One of the other things that--and my concerns, I've just got a couple more minutes so I'm going to--but my concern, really, is one of the schools in our County, between Livingston and Atwater, out in the country, there's 114 schools in our County, but I am especially concerned about the Shelby School, used for severely handicapped or medically fragile students. I can't replace that school. They're on a well. They're surrounded by orchards, all irrigating with wells. And</p>	<p>As described in Master Response 2.7, Disadvantaged Communities, the concerns of disadvantaged communities and environmental justice issues are important to the State Water Board. The plan amendments do not discriminate against people on the basis of race, color, culture or income. The State Water Board is committed to the human right to water.</p> <p>As acknowledged in the SED, Chapter 22, Integrated Discussion of Potential Municipal Water Supply Management Options, the effects of reduced surface water supplies are not felt by communities equally, with "communities of color and low-income people living in tribal, rural, and farming communities often disproportionately [experiencing] impacts on drinking water." The recent drought highlighted this historical problem, which has been exacerbated by the expansion of permanent crops and increased number of groundwater wells in the areas near these communities in the plan area. As an example, described in both Chapter 22 and 13, Service Providers, identify Le Grand Elementary School, which has had a well go dry.</p>

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		<p>that well is--the level is dropping. Not as bad as Le Grand, because they're in a better water position, but it is dropping, and I think will eventually go dry.</p> <p>And, so, again, I said that I wanted to focus on my part of the world to let you know, and I wanted to put a face on what those students look like [ATT4:ATT2]. These are the students that are in that Shelby School. And they're severely disabled and, of course, severely handicapped.</p> <p>And they also, of course, are medically fragile. Even if I--if their well went dry, if they ran out of water, and I wanted to move them to, let's say, Stanislaus County, or somewhere else, I can't because most of these students can't be on a bus for more than 30 minutes. Most of them come to school with a full-time nurse. So, that's what--that's some of the difficulties I'm going to be dealing with, or my successor will deal with, as we continue to--if we continue down this path and we run out of water.</p>	<p>However, the city of Le Grand received emergency State funding for redeveloping its wells.</p> <p>The Sustainable Groundwater Management Act (SGMA) is designed to address groundwater overdraft and requires that the local Groundwater Sustainability Agency consider all beneficial uses and users of groundwater, as well as existing applicable laws, plans, policies and regulations. For more detailed discussion on historical groundwater use, groundwater resource impact analyses, the purpose and intents of SGMA, and compliances with both SGMA and the plan amendments, please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act.</p> <p>As discussed in Master Response 2.1, Amendments to the Water Quality Control Plan and Appendix K, Revised Water Quality Control Plan, the State Water Board will also 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. Actions may 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>Please see Master Response 3.6, Service Providers, regarding water for minimum health and safety needs.</p>
878	31	<p>There are just three questions or thoughts I'd like to see you answer in your final proposal [ATT4:ATT3]. And those really are, you know, specifically, what is the impact of the water take in this proposed plan going to have on groundwater in the near future? What can we expect? Are we going to have half of our County go dry? Twenty years from today, where are we going to be if this goes forward?</p> <p>With groundwater levels dropping, nine feet a year, like it did in Le Grand, what is the plan when schools run out of water? Your, is it 1,500 pages, I think it is, plan, doesn't address that. And how will that be mitigated? How are we going to do that? I don't know. I have no clue.</p> <p>How does this address--and then, I'd like to know how it addresses the California Environmental Quality Act guidelines?</p>	<p>Please see response to Comment 878-27.</p>
878	32	<p>The superintendents and boards of education would like an explanation, detailing how 1,100 salmon, and I realize that that's not a good number--</p> <p>You know, how do they have--at what point do they have a higher priority to interrupting the educational process of our County? Is it like half of them, or if we can quadruple the number we have now? I don't know what that is. Is it we're going to increase that, provide more water, increase the amount of salmon at what cost? What will be--where is it that the Board would draw the line and say, no, we can't go past that line. That's going to be too devastating to students that you just saw on there [ATT4:ATT2], or on other students throughout the County, or all of the other things as well. I think that that would be important for us to know so that we can continue to do long-range planning.</p>	<p>Please see Master Response 3.1, Fish Protection, regarding SalSIM capabilities. Please see Master Response 1.2, Water Quality Control Planning Process, for consideration of beneficial uses. Please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act; 2.7 Disadvantaged Communities, and 3.6, Service Providers for a discussion of ground and surface water supplies for municipalities and domestic uses.</p> <p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p> <p>Long-range planning of local schools is beyond the scope of what is required under CEQA or the State Water Board's Certified Regulatory Process regarding amendments to a water quality control plan. The State Water board acknowledges local schools have a number of non-environmental challenges they have faced in the past and they will continue to face in the future regardless of the approval of the plan amendments. The State Water Board acknowledges schools have a wide variety of considerations, including funding and appropriations from various sources, when they prepare for their long-range plan. Please refer to Chapter 22, Integrated Discussion of Potential Municipal and Domestic Water Supply Management Options and Appendix B, State Water Board's Environmental Checklist regarding schools.</p>

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878	33	I appreciate you and the Water Board’s hearing the four "S"s of concerns for us, subsidence, salinity, services and students. And we look forward to the further discussion as this matter moves forward in the future.	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.
878	34	[ATT1: SWRCB Proposed Updated to the Bay-Delta Water Quality Control Plan. Potential Land Subsidence, Water Quality and Supply Related Impacts in Merced County. 12/19/16. By Ron Rowe.]	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.
878	35	[ATT1:ATT1: Presentation Overview]	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.
878	36	[ATT1:ATT2: Land Subsidence in the San Joaquin Valley. A deep process: Aquifer-System Compaction]	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.
878	37	[ATT1:ATT3: 8,500 Central Valley Well Logs]	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.
878	38	[ATT1:ATT4: Land Subsidence Damages Natural Resources and Infrastructure]	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.
878	39	[ATT1:ATT5: Recent Land Subsidence]	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.
878	40	[ATT1:ATT6: InSAR-Measured Subsidence (2003-2010)]	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.
878	41	[ATT1:ATT7: InSAR Subsidence Measurements: Maximum Subsidence Area near El Nido, between Eastside Bypass and San Joaquin River]	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.
878	42	[ATT1:ATT8: Highest Impact from Land Subsidence: Merced County Eastside Flood Bypass/Flood Implications]	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.
878	43	[ATT1:ATT9: Land Subsidence Along the DMC]	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.
878	44	[ATT1:ATT10: Future Land Subsidence Trend?]	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.
878	45	[ATT1:ATT11: What is the Economic Impact of Land Subsidence in California?]	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.
878	46	[ATT1:ATT12: Harmful Algal Blooms (CyanoHABs)]	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.
878	47	[ATT1:ATT13: CyanoHABs: San Luis Reservoir Danger Notice]	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.
878	48	[ATT1:ATT14: Summary of Potential Impacts in and Near Merced County]	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.
878	49	[ATT2: Presentation by C. Scott Stoddard, Farm Advisor, University of California Cooperative	The commenter provided this attachment for reference purposes in support of their comments. Those

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		Extension]	comments are addressed in these responses to comments; therefore, no additional response is required.
878	50	[ATT2:ATT1: Soil Salinity]	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.
878	51	[ATT2:ATT3: General Soil Map, Merced Area, California]	The commenter is providing this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to comments; therefore, no additional response is required.
878	52	[ATT2:ATT4: Crop Tolerance to Soil Salinity]	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.
878	53	[ATT2:ATT5: Crop Water Use]	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.
878	54	[ATT2:ATT6: Crop Water Use]	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.
878	55	[ATT2:ATT7: "The 'Almond Doctor' Says Salt is Slowly Crippling California's Almond Industry"]	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.
878	56	[ATT2:ATT8: "Tip rot" in sweet potatoes increases as soil EC increases.]	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.
878	57	[ATT2:ATT9: Salts in soils are leached through the use of high-quality water.]	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.
878	58	[ATT2:ATT10: Effect of leaching fraction on yield]	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.
878	59	[ATT2:ATT11: Summary]	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.
878	60	[ATT3: Small Water Districts: Facing Significant Challenges. By Stan Feathers, Delhi County Water District.]	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.
878	61	[ATT3:ATT1: Operational Challenges]	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.
878	62	[ATT3:ATT2: Districts face significant fiscal challenges]	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.
878	63	[ATT3:ATT3: Staffing Impacts]	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.
878	64	[ATT4: Merced County Office of Education. By Superintendent Steven Gomes.]	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.
878	65	[ATT4:ATT1: Water Level, Le Grand Elementary]	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.
878	66	[ATT4:ATT2: Photos of students at Shelby School]	The commenter provided this attachment for reference purposes in support of their comments. Those

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878	67	[ATT4:ATT3: Three questions]	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.
879	1	I'm the President the Contra Costa County Farm Bureau and I noticed this afternoon when we took a lunch break, all of you were eating lunch. You had something. You had bread or you had meat or you had lettuce or tomatoes and stuff on your sandwiches. That's all based on agriculture. Agriculture's a very important part in California and it always will be. The more water you take away the less agriculture we have. Contra Costa County is losing a lot of its agricultural land, because we don't have enough water and the proper water to grow the fruits and vegetables that we need. The best corn in the United States comes from Contra Costa County, the sweet corn, everybody has it worldwide. But we need the water. Agriculture's not a bad guy. Agriculture is doing everything they can to conserve water, putting in drip irrigation systems. But everybody's says we're using 80 percent. That's not the case. We don't use 80 percent of the water. And the water we use produces food, so we all have nutrition. We have nutrition, so we have great families and a great future.	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.
880	1	I'm actually opposed to you wanting to take our water. I'm opposed to that. I strongly support SSJID's position. And I want to state that I've been following what they do for decades now. They've been great stewards of our water. Not only do they manage producing electricity, they provide water to our communities. I've gone to the treatment plan when they opened it up, the water treatment plant. I was impressed. They didn't have to do that. I mean, they keep doing things that they really don't have to do. And they have managed to balance in very difficult times, not only getting the water to our farmers, the water to our cities, recharging the groundwater. I was impressed when they took it upon themselves and they've spent millions of dollars on the science for fish. And I'm big on science. And they've also gone to great expense to install in some of the agricultural areas, pressurized delivery of the water, so that the almond trees could get just the right amount of water they needed, which is great because it saves a lot of water. Of course there's a downside to that because without the flood irrigation then our aquifers don't get recharged. So you can't have it all. And they're making it work.	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.
880	2	As a long-time realtor many of you probably already know that the Central Valley acts as affordable housing for the Bay Area. The housing is very expensive. I grew up there, but I've lived out here for nearly 40 years, and our population is exploding. And not only have SSJID, along with the City of Manteca of course, we still depend on wells for some of our water, but we still manage to save water. We have still saved water and we've added thousands of people to our community.	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.
880	3	I'm a person who is big on law and water rights. And we have strong water rights. And I think that really needs to be protected. And we're under assault from special interest groups from Sacramento to San Francisco and to the south. And South San Joaquin Irrigation District (SSJID) has held their head high and has performed excellently. I mean, I'm so proud of them. I get all choked up, but it's about water. That's what I wanted to say. I'm a simple resident, a business person. I'm trying to stay informed. And you should look to them, to SSJID, consult with them. They have spent so much time and energy to do the right thing and with the proper science.	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.

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881	1	<p>I'm the Co- Chair of the State Sierra Club Water Committee. I'm not here to speak for the Sierra Club, because I'm not advocating for anything. I just thought I'd do a little fact-checking on the claims of economic disaster that you've been hearing. I'm speaking to this little one-page chart that I've left you copies of. And I thought what would be useful instead of talking about modeling was just to look at two years in similar points on the economic cycle. And I picked 2006 and 2014, both of them about six years out from major economic collapses. The 2008 one being a more major collapse.</p> <p>The difference between these two years is that SFPUC water deliveries were 25 percent lower in 2014. So we're going to see the impact of a 25 percent reduction in water deliveries. Unemployment however, was down 15 percent in 2014 as compared to 2006. The NASDAQ, which is kind of a rough indicator of Bay Area economy was up 75 percent between 2006 and 2014. And the median home value, which is probably a better local indicator of the economy for the San Francisco Metro area, was up 10 percent between 2006 and 2014.</p> <p>So if I was kind of a radical I might say that the 25 percent decrease in water deliveries had a positive impact on the Bay Area economy. But I'm not going to say that. I'll just say it has no discernible impact on the Bay Area economy. I would urge you to look with skepticism on the claims of economic impact and look at history. A similar history might enlighten us about the Central Valley. The 20th Congressional District in the San Joaquin Valley has been crushingly poor since the 1940s in years of plentiful water and no water. So take the claims of economic disaster with a grain of salt and a dose of history.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
882	1	<p>I'm a fisheries biologist, Founder of Fish Revolution and on the Board of SalmonAid. Fish Revolution works with chefs, restaurants, and other businesses in the greater Bay Area to implement sustainable seafood sourcing practices and to transform their seafood purchasing practices to ensure healthy oceans and business success.</p> <p>Wild salmon is not only an iconic California species, it is key ingredient on my clients' menus. And salmon is one of the most recognized and desired fishes that they offer. And wild salmon is really the only sustainable options for these businesses to choose. The problem is that local wild Chinook salmon is so hard to get, and the price is too high, and availability is too uncertain for many restaurants and businesses to rely on it for their menus. This is harmful to both their businesses and their sustainability goals.</p> <p>Restoring the San Joaquin River and her tributaries could lead to tens of thousands more salmon in the ocean every year -- even more if we go up towards the 60 percent recommendation. This would make supply of salmon more reliable, less expensive, and while keeping these economic benefits of salmon sales in our local area.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
882	2	<p>In most years, the San Joaquin has less than 30 percent of its natural flow. The Water Board's current proposal to increase that to only 40 percent is inadequate. The best science tells us that it's too low to support reliable salmon productivity in this valley.</p> <p>Please protect our wild salmon fishery, the restaurant and fish-related businesses like mine that rely on wild salmon by following the science to restore at least half of the flow to the tributaries to the San Joaquin.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
883	1	<p>I am a member of San Mateo County Democracy for America and Chair of the Social and Economic Justice Task Force. I led them in a study of water issues and we were surprised to</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general</p>

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		learn that there are five times as many water rights as there ever has been water in the State of California. And to learn that salmon habitat is water, plain and simple, that salmon flows coincide with water flows.	comment on the plan amendments or do not raise significant environmental issues.
883	2	The San Mateo County Democracy for America has taken a position against the twin tunnels.	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.
883	3	The County of San Mateo, the County Board has passed a resolution reminding everybody that the State Water Resources Board determined in 2010, that to protect the public trust resources in the Sacramento-San Joaquin Bay-Delta ecosystem, 75 percent of unimpaired runoff from the Sacramento-San Joaquin Watershed should flow out of the Delta. Also, in their resolution, they noted the need for regional self-sufficiency to reduce reliance on exports from the Delta. And they also noted that protecting the economic viability of industry and other businesses in the Bay Area was needed. And that part of this is protecting the shoreline of the greater San Francisco Bay-Delta ecosystem.	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.
883	4	I live in Menlo Park. In East Menlo Park where we have tons of jobs, the low-income residents are being driven out by rising rental costs. And if similar processes go on in East Palo Alto, the City Council may get money and the developers may get money, but similar processes will drive out the disadvantaged community. And I'm very concerned about this. I would urge you not to be overly persuaded by this particular sub-argument.	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.
884	1	<p>The [Delta] Independent Science Board was created as a result of the 2009 Delta Reform Act, as you're aware. And it's in existence to provide oversight on scientific research, monitoring and assessment programs. And its objective is to strengthen the science underlying Bay-Delta programs and the application of that science within the Bay-Delta. The Independent Science Board, as you may be aware, is reviewing and preparing comments on a draft Scientific Report that your staff has prepared for Phase 2 of the Water Quality Control Plan. My understanding is that the Independent Science Board that has released the draft of those comments is intending to finalize them on January 12th. The draft comments that were released in December present some fairly fundamental questions with regard to the Phase 2 draft Scientific Report.</p> <p>The Independent Science Board, in its draft comments, questioned why the State Water Board's draft Scientific Report only considers an unimpaired flow approach to setting flow regulation. They question the lack of quantitative treatment of any effects from non-flow stressors and questioned the limited description of possible methods for reducing effects of non-flow stressors. The Water Authority raised these questions, or noted these questions in its comments on the Phase 2 draft Scientific Report. And I note them today, because I believe these three questions--and there's others that they raise--are directly applicable in this Phase 1 process.</p> <p>The questions that the Independent Science Board has raised with regard to the draft Scientific Report for Phase 2 are questions that were raised in this Phase 1, when the draft Scientific Report underlying the documents that are before you today, were released for public comment. I do want to emphasize the first question that the Delta Independent Science Board has raised--the failure to consider approaches other than an unimpaired flow approach. To me this is a large and very problematic failure that exists in Phase 2, but it again is a problem and a failure in Phase 1.</p> <p>And you've heard and you've seen the results of the focus on unimpaired flow today, I'm</p>	Please see Master Response 1.1, General Comments, and Master Response 2.4, Alternatives to the Water Quality Control Plan, for responses to comments regarding development of alternatives for the plan amendments, the scientific basis for the plan amendments, and non-flow actions. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, Master Response 3.1, Fish Benefits, and Master Response 3.2, Surface Water Analyses and Modeling, for responses to comments regarding functional flow and percent of unimpaired flow. Please see Master Response 5.2, Incorporation of Non-Flow Measures, for responses to comments regarding non-flow actions.

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		<p>sure at the other hearings that you've attended. By focusing on unimpaired flow you set a paradigm that's--the question that's before you is how much water for fish versus how much water for people? This is a paradigm that has been employed for the past quarter century by the State Water Board. And it's a paradigm that's failed to provide the desired protection for beneficial uses. It places the State Board in an untenable position of choosing winners and losers. And it also places you in a position, if the desired results are not realized, for pushing for more water for fish at the expense of people.</p> <p>Science, policy and law support consideration of alternative approaches. Alternative approaches that may avoid the State Board being placed in the difficult circumstances I just noted. Alternatives that could be presented to you, but haven't yet are approaches that you've heard today from other speakers, like an approach that's based on functional flows. Other approaches are based on regression or statistical analyses. By following an alternative approach solutions focus on the needs of fish and the needs for people. It allows solutions that do not necessarily sacrifice one for the other. It allows solutions that do not place the heavy burden of flow, the burden that exists when you rely upon flow as a master variable. It allows solutions that consider flow, a call on non-flow measures to mitigate for non-flow impacts that have occurred within the system.</p>	
884	2	<p>The Phase 1 documents that are before you today conflate authority that you have under your water quality planning versus your water right planning. And because of the conflation of your authorities, if you adopt the update as proposed, you will be violating the law.</p> <p>The example I provide to you today concerns the Program of Implementation for southern Delta salinity objectives. Under the law, the Water Quality Control Plan and its Program of Implementation are not to assign responsibility for achieving objectives. The proposed updates and the Program of Implementation do just that. As examples, the Program of Implementation assigns to the Bureau of Reclamation requirements to meet south Delta salinity as a condition of its water rights. And that's on page 42 of the Program of Implementation. Page 43 has a similar statement obligating DWR and Reclamation to meet salinity requirements, as condition of their water rights. And page 45 has a condition on DWR and Reclamation's water rights with regard to operation of agricultural barriers.</p>	<p>Please refer to Master Response 1.2, Water Quality Control Planning Process regarding the authorities and regulations governing the process and Master Response 2.1, Amendments to the Water Quality Control Plan regarding implementation of the plan amendments. Please refer to Master Response 3.3, Southern Delta Water Quality, regarding DWR's and Reclamation's water quality responsibilities in the southern Delta.</p>
884	3	<p>You have concerns raised by the ISB [Delta Independent Science Board] in Phase 2 that are equally applicable to this Phase 1 and need to be addressed and more specifically, the failure to consider a regulatory approach other than an unimpaired flow approach. And you have the documents before you that conflate authority, your water quality and water right authority. These are significant concerns. Their significance however, is amplified by the fact that you're updating your Phase--you're conducting your Phase 1 update within a very complicated regulatory environment. An environment with multiple other regulatory processes underway, all of which are focused on similar resources, and all of which have similar goals.</p> <p>What the Water Authority recommends is that the State Water Board expand the analysis that's before you to address the concerns that I've highlighted. And to develop the Phase 1 documents to support or complement a unified institutional structure. That the State Board develop the Phase 1 documents to help bring a sense of order and singular purpose to the many processes that now exist within the Bay-Delta.</p>	<p>Please refer to Master Response 1.2, Water Quality Control Planning Process regarding the authorities and regulations governing the process. Please refer to Master Response 1.1, General Comments, regarding the programmatic nature of the SED's analysis.</p>
885	1	<p>I'm Executive Director of the Public Trust Alliance. It's a non-profit, which represents public</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general</p>

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		<p>interests in California's waters, which you devote a great deal of attention to.</p> <p>My brain is fried. I haven't understood a lot of what's been said and, you know, some people said, "We own it." And the thing is that things don't have value. People give it value. And when you have different people, they put different values on things. And so a lot of this is totally predictable differences in perception. People talked about different truths. And the scientific evaluation has to include an institutional analysis of where the uncertainties are coming from, because both camps of people and fish are claiming that their truth is the truth. And the thing is that both are the truths.</p> <p>And with that kind of thing when you have voluntary settlements, some things get traded away. And I think the process should be transparent enough, so that people can understand what's being traded away by whom and who disagrees with who. So I'm just saying at the end of a day like today, I'm blitzed.</p>	<p>comment on the plan amendments or do not raise significant environmental issues.</p>
886	1	<p>I'm a small business man. I'm a salvage contractor in Silicon Valley and I'm here today because I'm concerned about the river though, and its inhabitants. And as a way of expressing myself I wrote this following little story, which I hope you'll let me read.</p> <p>The human walked into the Court of the Honorable Ronald E. Salmon. "Why are you here?" the Judge asked. "We petition the Court to take a major portion of the water of the Sacramento-San Joaquin River Delta," the human answered. "What right do you request this?" "Well, we need it and we are more intelligent and more sophisticated than other species." "More sophisticated?" "Yes. We have advanced technology and communication and transportation and war. We have been to the moon."</p> <p>The Judge probed. "Has your technology benefited the earth and all its inhabitants?" "Well," said the human, "Many species have gone extinct and there's been some environmental destruction." "Some?" snapped the Judge. "It seems to me there's been a lot of environmental destruction. Have you at least benefited all humans with your technology?" asked the Judge. "Uh, no. Not exactly. There are many humans that have suffered. We could be doing a far better job with food, health care, energy and more. That's for sure."</p> <p>"My fine scaled friends have not harmed anyone," the Judge said. "They benefit many other species, both plant and animal kingdoms along the way. In fact, they provide many jobs to those of your species. How will the taking of this water affect my fine finned brothers?" the Judge asked. "Well," said the human, "It depends on how much water we take. Many, perhaps all of you will die. That's just the way it is," replied the human.</p> <p>"And you think this might help?" the Judge asked. "Well," said the human, "We have a lot of humans to feed." "As there is no other way?" asked the Judge. "Well," said the human, "This is the easiest way. We haven't necessarily explored all the other options."</p> <p>"You seem to be a very arrogant species," declared the Judge. "Wouldn't methods exploring all the other conservation measures before taking such a drastic step? I deny your petition. Don't come back 'till you have explored all the options and ensured the lives of all species and the health of our precious Mother Earth."</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
887	1	<p>I'm with the Modesto Police Officers Association. Our association covers 198 Modesto police officers and detectives, so I appreciate the opportunity to talk. The fact of the matter is that anything that affects our economy affects public safety and that's why we're here.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>

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		<p>That's why we're here to talk about that. Our fear is that anything that puts any type of restriction on our economy trickles down to us. Right now, we're down officers. Right now, we have the highest fatality rate of car accidents since the creation of Modesto. We are having trouble with our public safety already, and anything that will come down the trickle-down effect, that will hurt our public safety, is going to hurt the public. So, that's our stance on it. That's why we support everybody here talking against this for right now. I think there's different ways of dealing with it. I think people need to get together and find a common area, a more balanced approach.</p>	
888	1	<p>I just want to say that the TID and the Modesto Irrigation District were the earliest formed district in the country, 1887. And then along came Oakdale and Merced and South San Joaquin and so on. And everything went pretty nice. And then the federal government came and built the CVP, Central Valley Project, and changed things quite a lot. They basically did away with -- we talk about the San Joaquin River, but there's really no such thing. There's no water coming down the San Joaquin.</p> <p>When you talk about salmon support, it's a goner ever since the late 40s. And so, really, the tributaries have been the producer of water for any salmon on the so-called Tuolumne River. After the CVP came in, and they were completed sometime in the late 40s, then-Governor Jerry Brown's father, Pat Brown, was responsible for building the State Water Project. And that project, which is to send water down the east -- or, pardon me, the west side of the Valley, and on over the Tehachapis and into the Los Angeles Basin and further on down into the San Diego area.</p> <p>My point being, I guess, in talking about this particular thing, really, it was the state project that broke the back of the Delta system. That's when things really went south, an overdraft was created by the state by Governor Brown. Now, Governor Brown wants to fix it on the back of these tributaries of which there is n more San Joaquin River.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
888	2	<p>The question is, is you folks having these hearings as Phase One. And, really, Phase One should be the water rights hearing, which is Phase Two, because you're not going to get any water from anywhere if you can't get it from them according to water rights and unless you're planning on changing water right laws. But if you can't even change regulations regarding predatory fish that are imported, you can't change water right laws. I mean, how can you do that? It would be ...how could that possibly be possible?</p> <p>I'm just saying that seems a bit convoluted to me because why even talk to anybody if you can't have their water? I don't see how San Francisco wants to give their water up to Los Angeles. All I'm saying is, is my viewpoint is, if you need more water, the first thing you do is you shut off the junior water-right holder and see what happens to the Delta. That would be, of course, precipitous of the State Water Project. That being, I would cut the pumps off right at Bakersfield and see how much water you get in the Delta then.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
888	3	<p>I guess I'm just saying you're putting the people through a lot of worry right now. And unless you can change water rights in California -- and it's not just California. Then we get into the fact that as a property owner in Turlock, the land -- I don't own the water rights, but my land does. And that's a property right. So, that makes it a taking. You see? The federal courts won't go for taking.</p> <p>My viewpoint is putting water rights at the end of the proceedings is absolutely backwards because there's no way you're ever getting water rights from TID or San Francisco. I just</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>

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		don't see it. These are pre-1914 rights.	
889	1	<p>About three years ago, I put in a \$50,000 system, which is substantial for a little guy like me, and I went to micro-sprinklers to try to reduce water for the drought. But according to TID, under the proposal put forth, we would have had no water the past two years. And I've got trees out there that are three years old. I wouldn't have been able to survive. I would have had to put in a well. Right now, I guess there's a two-year lead on well drillers because they're all backed up.</p> <p>And, for me, it's just not an option. I live in the Denair area, which has been hit really hard. A lot of my neighbors' wells domestically have gone dry. And, right now, I'm just hoping that my domestic well will hold up. If this proposal goes through, I would have to sell my farm.</p> <p>My grandmother graduated from Ceres High in 1929. So, I think that was the first class. Her picture is still up in the high school library there. And my mother grew up on a peach ranch on Hatch Road there. They got a road named after her maiden name. But it would be a shame to lose my farm, but I'm pretty sure that's what would happen. I don't think I could afford a \$120-, \$130,000 industrial well after I just got done putting all the improvements in for our irrigation system three years ago.</p>	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
890	1	<p>I once made a 20-foot sturgeon art piece for a show to remind us that they used to be 20-foot long and they used to weigh 2,000 pounds right here in our Delta. And they're like a 240,000,000-year-old species that existed before the dinosaurs. And they are actually still here with us, but they're having a really hard time. They're very sensitive to our pesticides and our toxins. They bioaccumulate heavy metals because they live to be over 100 years old. They're just amazing. And they are very sensitive to oxygen levels and to temperature. So, you know, when the algal blooms, it really impacts them. But the biggest problem that they have is that they also go upstream to spawn just like salmon do, but they can't get past the dams. There's dams everywhere where they would normally go to spawn. And, so, what they're finding from current research is that they can only reproduce in years when there are high flows. They need heavy flows simply to reproduce, simply to be able to spawn in the lower reaches of their rivers.</p> <p>The reason is that they're -- because they're sensitive to oxygen levels, they need a lot of flow around the eggs, they need the flow to be clearing the silt out of the gravel so that the eggs literally don't smother, and they need that flow for the fry to be able to go down stream, and they need floodplains for the fry to be able to spend time and safety feeding and getting larger. Because they do go out to the ocean just like -- to the estuaries and the ocean just like the salmon do.</p> <p>So, they're really incredible. And you could say, "Well, who cares?" You know? I'm here saying, yes, let's maintain the flow you're recommending so that they can continue to exist. Well, who cares? Well, we actually should care because they're a key species that maintains the ecosystem health of the whole Bay-Delta. What they do is they control invasive species. They especially eat the overbite clam, which is a problem. And they bioturbate and oxygenate the sediment layer so it keeps it alive instead of going anoxic and becoming a dead zone. And, so, I submit that they have a right to thrive and that -- just because of the services they offer. And I hope that we will also serve the ecosystem by maintaining heavy flows for them.</p>	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.

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891	1	<p>What I see here today is an opportunity for us, everyone here, and the whole State of California to work together to find more efficient use of our water resources. On my Fulbright, I learned that Israel reuses about 90 percent of their wastewater for irrigation. We have an opportunity here in California to do that as well. We currently use less than one percent.</p> <p>If we have higher flow rates in our rivers, then we'll be forced to look to other water efficient -- efficiently use our water resources. It will create new jobs for people like me who want to be involved in California's water in the future.</p> <p>I encourage you to require half the natural flow from the Stanislaus, Tuolumne and Merced to get into the Bay-Delta, and push our State of California to invest in efficient irrigation and water recycling processes.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
892	1	<p>The fishing community, which has been a significant economic driver in California, has been devastated by what's been happening slowly over time to the salmon populations due to our unsustainable water diversions.</p> <p>There used to be 10,000 commercial fishing permits issued every year, and now it's less than 2,000. In 2008 and 2009, the fisherman selflessly and willingly agreed to cancel the fishing season entirely, canceling 2,000 jobs and causing a loss of a quarter billion dollars in annual revenue all to protect the resource.</p> <p>Respectfully, the agricultural community could and should be asked to put the public good first as well. Of course, economic considerations are important. Today, we keep hearing about the hurting economy in the Central Valley. Given that this plan is not yet in place, I would like to respectfully suggest that this plan maybe isn't the problem and there are larger forces at play.</p> <p>Regardless of this plan, agriculture is going to be forced to work on better management, water-efficient irrigation technologies and practices and replacing lower value water-intensive crops with higher value water-efficient crops. It's possible to grow more food with less water.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
892	2	<p>In California, water is a public trust resource, meaning it belongs to the people of California. We can all agree, I think, that food grown for Californians is a beneficial use of that water. I think that's a harder argument to make when we're talking about exports. And, currently, a lot of it is for export.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
892	3	<p>I think that Californians would agree that preserving such a high-quality local protein like salmon is a greater benefit than subsidizing corporations who are growing almonds for export, especially in areas where almond trees just aren't the most sustainable or suitable crop.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
892	4	<p>I want to wrap up by saying that, you know, your own scientists have suggested that 60 percent is what's needed to protect the resource. And I know that we've entered this post-science post-fact sort of era in the national scene, but I think that this is California, we've heard a call from the governor that California needs to be a stronghold of respecting science, and so I ask you to do that today.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>

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893	1	<p>Thank you for your work in damage control of the ecosystem. What we're talking about is just totally gigantic, so it's a very big job, and damage control is what I think it is. And it's doing the best with not too much to work with, which is what everyone here is noticing: They don't have enough to work with.</p> <p>I want to present as food for thought a very disturbing report, which I don't know if any of you have read, called, "Prolonged California Aridity Linked to Climate Warming and Pacific Sea [Surface] Temperature." This was published this year. And this notes that past drought - there was a past drought here of 5,000 years and another one of 300 years. That, right there, was a stopper.</p> <p>But the fact is that that has happened, and it occurred when there was warming. That warming, it seems to have been caused by the sun, or whatever it was, but it was a warming period. The droughts went away when the warming went away. And this has been shown by studies in the Sierra and all the lakes and so forth here.</p> <p>And, so, my point is just we're kind of in a bad place. And that was the bad news. And the good news is we're next to the Pacific Ocean, we have a lot of sun, we could start using alternative energy like solar and wind energy. We have one company now that has applied to put floating wind turbines off our coast, way out where the wind blows all the time. And since I come from a Navy family, I sure would like to see one of our big dry dock ships out there. I would love it if it was my dad's aircraft carrier doing desal out there powered by wind and solar, offering energy and combatting global warming.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
894	1	<p>I want to preface my remarks by saying that support for the Substitute Environmental Document does not mean a lack of concern for our Central Valley fellow Californians.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
894	2	<p>I'm not opposed to negotiations, as long as those negotiations are timely and they maintain an authentic balance of uses.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
894	3	<p>Population change and climate change are going to be tremendous and scary changes to the Central Valley no matter what we do. And we can try to allay them in some ways, but they're going to happen. I think probably the best thing we can do for the Central Valley in a lot of ways is advocate for significant state economic support for them.</p> <p>Whenever science leads to an unpalatable choice, a common tactic is attack the science. Cigarettes and smoking come to mind, sugar and diabetes, global warming, and now water.</p> <p>The SED has been subject to attacks before it was ever even put out, and they were organized and strategic to say, "This is how we have to kill this thing because we don't want it to happen." It's good science. It may have minor errors, everything does. But the science is authentic and it's accurate.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
894	4	<p>This Board has been accused of being disinterested in Central Valley opinions, but you've met with all their opinion leaders and now you've had three meetings in the Central Valley, and I might add, not one in the more populous Bay Area that might have a different perspective.</p> <p>I think the Central Valley has not been ignored. I don't think their problems are going to go away. I think they're real, but the solution is not to destroy the rivers.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>

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894	5	I just want to close by saying, if the alternatives proposed different ways to make ado with less water really worked, that would be fine, but they haven't worked. So maybe what it is, it's time to pass this, and then if the Central Valley can make them work, you have flexibility in that plan to give them more water as they demonstrate that it actually works.	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.
895	1	We first asked that you would come into our communities and, you know, hear what we have to say, because it's very difficult to go up to Sacramento, and you're here and I appreciate that.	Please see Master Response 1.1, General Comments, regarding the public outreach process for the plan amendments.
895	2	We asked that would give us additional time to comment on the Plan, and you've given us additional time. And I would argue, we need a lot more time, but thank you very much for the additional time.	Please see Master Response 1.1, General Comments, regarding the public comment period. Note that the public comment period was extended for a total duration of 6 months.
895	3	I spoke on this issue first about three years ago, and we keep talking about the same thing. And hopefully, after these impassioned pleas by all these folks that it would change your mind a little bit and really rethink this Plan. Your proposal to dedicate 40 percent unimpaired flows to fish and wildlife will devastate the district I represent. My district is a very big district.	Please see Master Response 1.1, General Comments, for responses to comments that acknowledge the concerns of elected representatives and other community members.
895	4	<p>It's an agricultural district which includes Stanislaus County, Merced County and a few other counties. And I introduced Merced to you. I want to introduce Stanislaus to you, as well. We have one-and-a-half times the state average for unemployment.</p> <p>One in five of us live in poverty in Stanislaus County, so we're an area that has lots of challenges. I've lived in this area for 47 years. I love this area, but we certainly have our challenges. The recession and drought has stressed our economy and our residents but, thankfully, agriculture has been a bright spot. Now this proposal stands to devastate an already troubled region. The significant damage to the region's economy would dry up, by some estimates, over 200,000 acres of farmland, causing an overall loss, economic loss of \$1.6 billion, and something in excess of 6,500 jobs. And these totals do not include the proposal for carryover water. I would argue, the carryover water is probably more destructive to our area than the unimpaired flows.</p>	Please see Master Response 1.1, General Comments, for responses to comments that make a general comment regarding the plan amendments and general information regarding the economic analysis.
895	5	If this Plan were adopted with the carryover requirement, TID would have provided zero water to all their farmers over the last two years, that's 150,000 acres, it would have provided zero water. That would be a disaster for our area.	Please see Chapter 3, Alternatives Description, for a description of the plan amendments. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the carryover storage requirements. Please see Master Response 1.1, General Comments, for a description of how the unimpaired flow requirements would only require that a fraction of the available water remain in the rivers. In addition, please see Chapter 21, Drought Evaluation, for an evaluation of the Water Supply Effects (WSE) model results that extend into the major drought years of 2014 and 2015. Figure 21-8d shows the estimated diversions for baseline and the three LSJR alternatives for the Tuolumne River. For 2014 and 2015, diversions for baseline and all three alternatives are low, but there is little difference between the baseline diversions and the diversions under the 40 percent unimpaired flow scenario. Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding a description the integration of carryover storage into the WSE model and the appropriate representation of baseline and the LSJR alternatives in the model. Please also see Master Response 3.2 regarding hydrologic modeling analyses presented by commenters.
895	6	This proposal would adversely impact hydropower production by taking water from reservoirs during the spring, which would leave less water available in the summer when it's critically needed to irrigate crops and take pressure off the state's power grid.	The SED identifies potential impacts related to a change in hydropower production in Chapter 14, Energy and Greenhouse Gases, and Appendix J, Hydropower and Electric Grid Analysis of Lower San Joaquin River Flow Alternatives; the analysis concludes that impacts would be less than significant (Impact EG-1). The SED identifies potential impacts related to a change of water supply for irrigation purposes in Chapter 11,

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			<p>Agricultural Resources, and Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results; the analysis concludes that under some LSJR alternatives impacts would be significant and unavoidable (Impact AG-1). For clarifying information regarding hydropower, please see Master Response 3.2, Surface Water Analyses and Modeling, and Master Response 8.4, Non-Agricultural Economic Considerations. For clarifying information regarding agricultural resources, please see Master Response 3.5, Agricultural Resources, and Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model.</p>
895	7	<p>Groundwater pumping would increase by over 25 percent. I'm hopeful that the recently passed federal water legislation will increase storage, but that will not solve our problems immediately, and certainly not in the near future. This proposal takes water at a time when it's most valuable and sends it down the river with only a hope it will benefit the fish population. Water is too valuable to waste on the hope that it will make a difference.</p>	<p>Please see Master Response 1.1, General Comments, 1 acknowledging the concerns of elected representatives and other community members and responses to comments regarding groundwater resources. Please see Master Response 3.4, Sustainable Groundwater Management Act and Groundwater, for additional information about groundwater resources. Please see Master Response 3.1, for responses to comments regarding benefits of plan amendments for fish.</p>
895	8	<p>The Governor wants a voluntary settlement. But I'll be honest, how can we be part of a voluntary settlement when we haven't been part of the discussion? In fact, the TID and MID, who manage these rivers and, I think, have higher expertise than your staff, they've offered information, and it's either been ignored or misused.</p>	<p>Please see Master Response 1.1, General Comments, for information regarding voluntary agreements. Voluntary agreements can be submitted to the State Water Board for consideration at any time. State Water Board staff conducted two days of field tours with MID staff on September 17–18, 2013, and met with MID staff on October 31, 2013, to discuss groundwater issues. In addition to the two comment letters submitted by Merced Irrigation District and the letter from Turlock Irrigation District on the 2012 Draft SED and MID's and TID's presentations at a March 20, 2013, workshop, the State Water Board requested additional technical information from both TID and MID on September 4, 2015. MID and TID responded to that request on October 6, 2015. TID and MID has had several opportunities to interact with State Water Board staff to provide and explain any pertinent data, assumptions or interpretations related to the Recirculated SED. The State Water Board used the best available science throughout the SED. A variety of data were obtained for the water quality planning process: quantitative data from peer-reviewed published literature on topics specific to the plan area; peer-reviewed published literature outside the plan area but on topics relevant to the proposed project; unpublished quantitative data from within the plan area and from outside of the plan area; qualitative data or personal communication with topical experts; and expert opinion if no other sources were available.</p>
895	9	<p>I want to talk about the 150,000 acres. The last two years, TID has been able to provide 18 inches of water. If that water was gone and everybody was required to pump, it would have taken 450,000 acre-feet of groundwater at a time when we cannot provide any more groundwater.</p>	<p>The SED and plan amendments do not require or encourage increased groundwater pumping as a response to reductions in surface water. The SED reflects the historical local response to increase groundwater pumping when surface water availability is reduced. For further discussion on the potential for increased groundwater pumping and compliance with SGMA in the context of the plan amendments, please see Master Response 3.4, Groundwater Resources and the Sustainable Groundwater Management Act,</p>
896	1	<p>I stand in front of you today in support of MID, TID, our local elected officials and our concerned citizens in opposition to the Plan that the Board has put before us today. I want to point out a couple key things, and then I want to encourage the Board on a particular issue. Within Stanislaus County alone, we are one of the few if not the only region whose groundwater basins are not listed as critically overdrafted. And why is that? It's because we have elected incredibly intelligent experts to our irrigation boards, to our city councils, to our boards of supervisors, and our community is very knowledgeable on this particular issue.</p> <p>So I would encourage the Board, I implore the Board to reach out to those experts, because they know this area, they know this issue, and they are willing to negotiate and settle, but we have to be brought to the table.</p> <p>On our arch outside the City of Modesto, it says, "Water, Wealth, Contentment, Health."</p>	<p>Please see Master Response 1.1, General Comments, acknowledging the concerns of elected representatives and other community members.</p> <p>Please see Master Response 1.1, General Comments, and Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, for responses to comments on groundwater management. Please see Master Response 1.1, for information regarding voluntary agreements.</p>

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		And I think possibly Modesto Bee said it best, "Without our water, our health, wealth and contentment could disappear."	
897	1	<p>Appreciate you being here in Stanislaus County. We enjoyed the opportunity to speak with you yesterday in Merced. These local hearings have both helped the community access these proceedings. But perhaps more importantly, I hope it's given you an opportunity to see how tone deaf this Plan sounds to us.</p> <p>With the economic realities we face in this region, and as we continue to struggle with the fifth year of drought, to choose now to move forward with plans to create, in the words of your own staff, a permanent regulatory drought is just absolutely unacceptable to us.</p>	Please refer to Master Response 1.1, General Comments, for responses to commonly raised concerns related to the economic analysis and considerations presented in the SED.
897	2	<p>Your plan is riddled with incomplete and inaccurate information, it has been made clear by our local governments and irrigation districts who have more robust and historic scientific data on these rivers than anyone else in the world. They are the experts. Despite that fact, you decided to ignore our offers to help and instead cherry-picked selective science to promote your preferred narrative. There's only one reason to do that.</p> <p>If your plan actually stated the true negative impacts, we would not be here today because it would have already been scrapped, hundreds of millions of dollars, some benefit, but at too much cost.</p>	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. Please see Master Response 1.1, General Comments, for responses to comments regarding the scientific basis of the SED. The State Water Board used the best available science throughout the SED. A variety of data were obtained for the water quality planning process: quantitative data from peer-reviewed published literature on topics specific to the plan area; peer-reviewed published literature on areas outside the plan area but on topics relevant to the plan amendments; unpublished quantitative data from within the plan area and from outside of the plan area; qualitative data or personal communication with topical experts; and expert opinion if no other sources were available. In addition, the State Water Board reviewed, and incorporated where appropriate, FERC re-licensing studies into Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30.
897	3	A plan which sacrifices thousands of jobs, hundreds of millions of jobs in lost economic productivity and jeopardizes the drinking water supplies to one of the poorest, most underserved and most disadvantaged communities in the state is obviously a dead-on-arrival plan.	<p>The SED identified and disclosed potential economic effects: Chapter 11, Agricultural Resources; Chapter 20, Economic Analyses; Chapter 22, Integrated Discussion of Potential Municipal and Domestic Water Supply Management Options; and Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results. Please also see Master Response 1.1, General Comments, for a general discussion of economics. More detailed discussions regarding economic effects is also provided in the following master responses: Master Response 8.0, Economic Analyses Framework and Assessment Tools, Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model, Master Response 8.2, Regional Agricultural Economic Effects, Master Response 8.4, Non-Agricultural Economic Considerations, and Master Response 8.5, Assessment of Potential Effects on the San Francisco Bay Area Regional Water System.</p> <p>The commenter also expressed concern with regard to disadvantaged communities. Chapter 22 uses information from multiple resource chapters to discuss potential effects related to disadvantaged communities. In addition, Chapter 13, Service Providers, discusses potentially significant physical environmental impacts on small municipal service providers, some of which provide service to disadvantaged communities. Please also see Master Response 1.1, General Comments, for a general discussion of disadvantaged communities; and Master Response 2.7, Disadvantaged Communities, for more detailed information.</p>
897	4	Instead of these hearings focusing on the merits of your plan, we have instead fought just to get a fair trial. If you sincerely prefer voluntary settlements, and I will take this Board at its word, we've had many discussions on that, then we need to drop this Plan and go back to the drawing board. We need to engage in those discussions. This report, held up as a gun to our head, just does not make settlements possible. It does not encourage those efforts.	Please see Master Response 1.1, General Comments, and Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments that discuss the State Water Board's support of voluntary agreements.
897	5	I [am] submitting 1,100 new petitions. You all are aware, we have a StopTheRegulatoryDrought.com site. We've previously submitted, Assemblywoman Olsen	Please see Master Response 1.1, General Comments, acknowledging the concerns of elected representatives and other community members. Please see Master Response 1.1, General Comments, for information

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		<p>and I, I think a little over 3,000 signatures to this Board. We've got another 1,100 to leave with you today, people in our community who want to send this message to this Board: that this Plan is not going to work, that we need a settlement. We need an opportunity to have a fair plan that treats everyone and every aspect and every community with a fair shot.</p> <p>So I would implore you to drop this Plan. Let's work together. You know, let's get a comprehensive plan. I have talked for four years. When we did the Groundwater Sustainability Act, when we did the Water Bond, as we've talked about the flows issues and the work that you all are doing, this has to work together; right? And unfortunately, the way government is set up with the Water Board, the Water Commission, Fish and Wildlife, it doesn't work together. Everybody's operating in a silo and you can't take actions.</p> <p>I mean, your own report up here says we're going to impact the groundwater in one of the most impacted regions in the whole state. That is absurd. It's laughable. And so if we can't do it through a formal process, let's do it through the informal process and let's put it all together. Let's do habitat restoration. Let's do some water. Let's do predator suppression. And let's do storage. I'm confident that if we take that approach we can fix California's water problems, and we can stop just robbing Peter to pay Paul.</p>	<p>regarding voluntary agreements. Voluntary agreements can be submitted to the State Water Board for consideration at any time. Additionally, please see Master Response 5.2, Incorporation of Non-Flow Measures, regarding the role of non-flow measures in the plan amendments. Please see Master Response 3.4, Groundwater and SGMA, address comments related to groundwater management.</p> <p>The petitions submitted were cataloged separately from these comments given at the public hearing. Please refer to the commenter index included in Volume 3 of the SED to locate the letter number and review the responses. Please refer to Chapter 2, Approach to Response to Comments for a descriptions of how petitions and form letters were processed and addressed.</p>
898	1	<p>I would like to mention that, although we [Turlock Irrigation District] have many concerns with the SED, I will just only be discussing three of the impacts that the SED will have on TID and the region.</p> <p>The first impact is reservoir impacts. Appendix F describes the concept of minimum end-of-September storage. And for the Don Pedro Reservoir, this requirement is 800,000 acre-feet. This reduces the effective storage of the reservoir from its existing 1.7 million acre-feet down to 900,000 acre-feet. In addition, the SED has a maximum allowable draw from storage that limits what can be available for diversion over the irrigation season.</p> <p>So, then, assuming on March 1st that we have a full reservoir, which in this case is half of 900,000 or -- actually, we had a full reservoir and we have to limit our diversion over the irrigation season to 50 percent of the available storage, in this case, it would be half of 900,000 or 450,000 acre-feet. So, you could see the usable storage in Don Pedro is essentially reduced to 450,000 acre-feet. And, as a comparison, the original Don Pedro Reservoir was slightly under 300,000 acre-feet [ATT 1: ATT 4].</p> <p>So, this proposal merely takes us back in time in terms of water supply to the point we were prior to the construction of the New Don Pedro project. And, as I mentioned earlier, Don Pedro was built specifically to allow our community to survive a prolonged drought, similar to the one that we're currently in. But the SED would result in a loss of a local infrastructure investment and severely limit the amount of water our community, farmers, and drinking-water customers can use.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the LSJR flow program of implementation, including discussion of carryover storage. The plan amendments do not establish specific carryover storage requirements to avoid constraining future implementation. Specific carryover or other requirements will be established when implementing the plan amendments through future water right and water quality proceedings.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding reservoir operations assumptions, including carryover storage. The model results in the SED present a range of potential and likely generalized operations, sufficient to evaluate water supply and other effects of the project from a programmatic perspective. The State Water Board modeled potential reservoir operations (including carryover storage) to show the range of potential environmental impacts in such a way that the public and the State Water Board can compare the relative effects.</p>
898	2	<p>Impacts to groundwater. With passage of the Sustainable Groundwater Management Act, TID took a leadership role and began work immediately to develop and pursue a plan to comply with this new law.</p> <p>TID is part of the Turlock Subbasin, and it's only one of two groundwater basins in the San Joaquin Valley that is currently not designated as critically overdrafted.</p> <p>We knew that there would be challenges ahead of us. We have 11 disadvantaged</p>	<p>The State Board Water appreciates the effort that Turlock Irrigation District (TID) and its partners have made in complying with SGMA.</p> <p>The SED and plan amendments do not require or encourage increases in groundwater pumping as a response to a reduction in surface water. Rather, the SED and plan amendments reflect the historical local response to increase groundwater pumping when surface water availability is reduced. It will be up to TID and other local entities in the Turlock subbasin to determine the precise actions that would be taken in</p>

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		<p>communities within the TID service area that rely solely on groundwater as their source of drinking water. We also have 13 other entities that we needed to work with within our subbasin. But I'm pleased to say that, along with our 13 other partners, we recently formed the West Turlock Subbasin Groundwater Sustainability Agency, and anticipate holding our public hearing and submit our paperwork to the Department of Water Resources within the July 2017 deadline for GSA formation.</p> <p>However, the SED preferred alternative would substantially deplete groundwater supplies and interfere substantially with groundwater recharge, that is described in the document as significant and unavoidable [ATT 1: ATT 5]. This will make it nearly impossible for the new GSA to manage our groundwater sustainably.</p>	<p>response to implementation of plan amendments, with or without the future condition of SGMA.</p> <p>The State Water Board acknowledges that it will be challenging, but the plan amendments do not limit TID's ability to comply with SGMA; comprehensively addressing both surface water and groundwater resources allows for true integrated planning of California's scarce water resources and ensures an adequate long-term supply of drinking water for school children and disadvantaged communities.</p> <p>For further discussion on SED consideration of SGMA and groundwater recharge, please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act.</p> <p>Please see Master Response 2.7, Disadvantaged Communities, for a discussion regarding the plan amendments as they relate to disadvantaged communities and the resources available to assist them in dealing with their water supply issues and improve water supply resiliency.</p>
898	3	<p>Impacts to drinking water. We [Turlock Irrigation District] recently completed an agreement with the City of Turlock and the City of Ceres to supply Tuolumne River water as another source of their drinking water. The anticipated benefit is that the cities would gain an alternate water supply and that the TID service area would see a recovery of groundwater as the cities cut back on their reliance on the groundwater.</p> <p>There is a provision in our agreement where, if there's a reduction in the amount of water delivered to our growers, then the water we provide to the cities would be equally reduced. An analysis we performed indicates that if the SED were in place in the 1990 to 2015 time period, TID would only be able to deliver the full amount of water to the cities in only 5 out of those 26 years [ATT 1:ATT 6].</p>	<p>Please refer to Master Response 1.1, General Comments, regarding the general approach to the analyses and the programmatic nature of the analyses contained in the SED.</p> <p>In Chapter 13, Service Providers, it is acknowledged that the potential impacts due to surface water reductions are considered within the general context of water supply agreements and contracts in Impact SP-1. Please refer to Master Response 3.6, Service Providers, regarding the availability of municipal water supply, and see Master Response 8.4, Non-Agricultural Economic Considerations, regarding the economics of the availability of municipal water supplies.</p> <p>This comment does not make a general comment regarding the plan amendments or raise significant environmental issues.</p>
898	4	<p>One of the first challenges you're going to face as you look at the job before you is, does the SED, as written, meet its own goals and objectives [ATT 1:ATT7]? And if you look at SED, in the Executive Summary, Pages 9 and 10, staff states there are eight goals the SED hopes to accomplish[ATT 1:ATT 8]. We'll certainly be addressing each of those goals and some analysis related to those in writing, but, today, let's just pick Number 1 and move down the list.</p> <p>Project Goal Number 1 states, "Maintain inflow conditions from the San Joaquin River Watershed sufficient to support and maintain natural production of viable native fish populations migrating through the Delta." [ATT 1: ATT 9] And, so, let's take a look at that goal and what the SED says about it.</p> <p>If you look at Page 19-34, and I can't quite read the monitor.</p> <p>CHAIR MARCUS: The SalSim chart.[ATT 1: ATT 10]</p> <p>MR. BOYD: The SalSim chart. Well, the staff document cites about 96 times why SalSim is important to the SED and how it supports the goal, and it cites about 10 times wherein staff tries to sort of move away from that analysis. But, for today, let's assume that it's correct. And if you were to look at the top, left column, certainly you folks know this better than anybody, so this is more for the audience, top, left column is what's considered base case or modeling the current conditions for all three tributaries.</p> <p>And you if you move all the way to the right, the model shows there would be about 11,373 fish in all three tributaries according to the model.</p>	<p>Please see Master Response 3.1, Fish Protection, regarding SalSim.</p> <p>See Master Response 3.5, Agricultural Resources, and Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model, regarding agricultural resources.</p>

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		<p>SalSim then models the 40 percent unimpaired flow case. And if you move all the way to the right, it shows about 12,476 salmon in all three tributaries.</p> <p>And, again, so simple math, that's where everybody has come up with the 1,103 new fish in the river. Again, assuming everything in the SED is correct, the impact stated show that there'll be about 23,421 acres of irrigated farmland that come under -- out of production and a loss of about 450 jobs and a net impact of \$64 million, assuming that's correct.</p>	
898	5	<p>I'm going to read one more item that is in the SED before we move to sort of some balancing questions you're going to be faced with. The Executive Summary, Page 1 says, "The Bay-Delta is therefore at the center of the ongoing statewide debate about how to reasonably protect fish and wildlife uses of water without causing unreasonable negative impacts on water supply for agriculture, drinking water, hydropower, and other competing beneficial uses. The southern Delta is at the center of a more local debate on how to reasonably protect irrigated agriculture." [ATT 1: ATT 12]</p> <p>So, absent new information in the SED, you have a very large task and a very tough one. From my perspective, some balancing questions you might have to face moving forward is, do those 1,100 new fish equal a viable population? [ATT 1: ATT 13] Of the fish modeled in the baseline, or in the 40 percent unimpaired flow model, how many of those are actually native fish returning to the system? You have to consider if the SED considers predation both through the tributary and through the Delta. And then, finally, is this a reasonable protection of both fish and wildlife without causing unreasonable impacts?</p>	<p>Please see Master Response 3.1, Fish Protection, regarding SalSim, predation, and the benefits anticipated from implementation of the plan amendments.</p> <p>Please refer to Master Response 1.1, General Comments, and Master Response 1.2, Water Quality Control Planning Process, regarding reasonable protection of beneficial uses.</p>
898	6	<p>One thing you heard yesterday in Merced from the Merced River is the ongoing relicensing on the Merced project. Since 2010, the Turlock and Modesto Irrigation Districts have been working through the FERC relicensing process for the New Don Pedro project. In 2012, we completed over 30 very complex scientific studies using state-of-the-art science and methodologies. We also built a suite of models aimed at everything from understanding reservoir operations, reservoir temperature, river temperature, floodplain analysis, and steelhead and fall-run Chinook salmon populations.</p> <p>The State Board staff was involved in the meetings for the development of those studies. They helped shaped the outcome, and they helped shape the development of those models. There's, I believe, one single mention of all of that work in all 3,500 pages of the SED, yet none of the analysis is used to inform the product.</p>	<p>Please see Master Response 1.1, General Comments, regarding a general discussion of the overall approach to the analyses contained in the SED and the programmatic nature of the analyses.</p>
898	7	<p>TID and MID have been operating the Don Pedro project together for quite a long time, since the 1970s, under the new dam configuration and a series of licensed articles prescribed fishery flows for spawning and rearing. There was a cooperative study program which has been re-implemented under different requirements over the years between the districts and DFG, and DFW rather, and Fish and Wildlife Services, as well as long-term monitoring of salmon escapement, and, in the last 15 years or so, a rotary screw trap monitoring at the river mouth looking at salmon production.</p> <p>If you go to the FERC website, numerous studies [ATT 2: ATT 1] have been filed with both FERC and CALFED looking at factors that affect Chinook salmon production, and these could include factors affecting spawning, escapement, both monitoring as well as modeling studies, habitat studies looking at the impacts of dams, such as sediment blockage and sediment downstream, and restoration to improve gravel quality and quantity, studies on Redd superimposition, so density-dependent impacts on salmon spawning, food availability,</p>	<p>The State Water Board recognizes the importance of implementing non-flow measures, such as predator removal, for fishery recovery. Detailed descriptions of such non-flow measures are provided in Chapter 16, Evaluation of Other Indirect and Additional Actions, Section 16.3, Lower San Joaquin River Alternatives – Non-Flow Measures. The State Water Board would not be undertaking these non-flow measures because doing so is not within the State Water Board's regulatory authority. The State Water Board recommends, but does not require, non-flow measures to be incorporated as part of a comprehensive effort to address Delta aquatic ecosystem needs, as set forth in Appendix K, Revised Water Quality Control Plan. For further discussion regarding the incorporation of non-flow measures in the plan amendments, please see Master Response 5.2, Incorporation of Non-Flow Measures.</p> <p>The scientific basis and relevant research for flow objectives to protect fish and wildlife are documented in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objective. For a discussion regarding the need for improved flow in protecting fish and wildlife, and consideration of fish predation and Tuolumne River predation rates, and the approach regarding</p>

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		<p>fish health studies, water temperature modeling, water temperature monitoring, water quality. A range of factors.</p> <p>So, one of the ones I want to drill down into here is predation. [ATT 2: ATT 2] So DFG first identified predation as a major factor affecting salmon production in the late '80s and TID initiated a range of studies from habitat characterizations to direct predator sampling and predation rate estimates at that time. This is just an example of one mining pit filling project done, it was called Special Run Pool 9, in the lower river, on the bottom left here. And, then, on the right, is some rotary screw trap passage data used to create a small survival index during the spring.</p> <p>And the point being that there's quite a bit of degraded habitat in the lower river, a lot of very deep and slack water pools that would not respond functionally restored flows. They're just simply too slow.</p> <p>And the screw trap passage data shows a relationship here, a fairly weak relationship on the order of R-squared of like .15 to .18. It's there. You know, higher flows do improve survival, and this is part of the predation signal.</p>	<p>unimpaired flow as functional flow, please see Master Response 3.1, Fish Protection.</p>
898	8	<p>MS. D'ADAMO: Just to give an idea of the scale, of the size, of these pits [ATT 2: ATT 2] because, you know, maybe some of us are visualizing a river of a certain size and there's these indentations --</p> <p>MR. HUME: Some of them are upwards of 30 feet and more deep. You can't see the bottom kind of thing. Some of them are upwards of a-mile-and-a-half long and maybe 15 feet, something on that order. So, it was really great, because we actually participated in the habitat restoration plan for the river to be able to fill all these areas, but there just isn't enough gravel in the state to do that. They just -- you just couldn't find enough.</p> <p>So, there can be improvements. There can be sort of reconstruction of spawning riffles and sort of lowering of floodplain areas. There's ways of improving the functionality of the system. But I don't think there's any way back to the pre-human river.</p> <p>CHAIR MARCUS: Right. Yeah. That gets back to that "When history begins," kind of an issue. So, the question is what is the art of the possible? We've heard a lot about predation, and people toss it off. There's a fight that happens about striped bass wars, and we actually have spent a lot of time talking to Peter Moyle and other folks. And it's more complex than there's taking out striped bass. They're a longer-lived fish, and they're only one of many, another predator concomitant group.</p> <p>But the issue of hot spots has been something that has intrigued a lot of us and which we've gotten some traction on, which is, if you know you have an obvious hot spot, maybe not all of them, you could give the fish a fairer fight if you dealt with those hot spots. And that the issue is to try to increase the good habitat that gives natives a fighting chance. Flow is a piece of it, but it's just one piece of it. And then you suppress the habitat that favors the predator where they're just sitting at a McDonald's knowing that everybody is going to go by.</p> <p>And, so, I really -- hopefully, you're going to get to that. I would really be interested in your</p>	<p>Please see response to Comment 898-7.</p>

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		<p>sense of the art of what's possible that could help. It's all about making it a fairer fight.</p> <p>MR. HUME: Now, the monitoring on the backside of that did not show fantastic effects because there were pools only a half a mile upstream and downstream of the --</p> <p>CHAIR MARCUS: So it's just in the middle. Okay.</p> <p>MR. HUME: So it was kind of like, "Oh, we really wanted some, really got data to show that it worked." And it's pretty inconclusive on the other end. Certainly, the survival through that reach was good. But if you were to do a broader look, there's predators that are roaming up and down the river from the nearby pools. So, it is true that if you improve, I think what you were saying, improve habitat incrementally, you can improve the overall survival down the river.</p>	
898	9	<p>I'm going to be focusing on kind of more a predator removal idea here. So, we have this sort of weak flow-survival relationship. So, let's move to the next slide [ATT 2: ATT 3]. And the districts had sample predators back as far as 1990, through electrofishing. This 1998/2000 period was that, these pit filling projects. And, then, most recently, for the relicensing study, again, predator abundance sampling, predation sampling. This is sort of a gory picture here of lavage, or stomach content sampling, here on the right-hand side. And then predator movement tracking through radio telemetry and acoustic tracking in these pool habitats and other locations, as well as sort of the more passive rotary screw trap monitorings that are upstream and downstream of these mining pits. And you can see what happens. And, essentially, very high predation losses in the lower river --</p> <p>And, then, next slide. [ATT 2: ATT 4] -- in the San Joaquin itself.</p> <p>So, as we go down into the lower San Joaquin, you know, past Vernalis and into the south Delta, survival is severely impacted by predation. And the VAMP, Vernalis Adaptive Management Protocol, proceedings was attempting to get sort of a flow survival relationship there. And it all started off very starry eyed in the 1990s. And, then, somewhere in the middle 2000s, the studies kind of fell apart. And, essentially, we were getting zero -- zero percent survival no matter what flows were being accomplished.</p> <p>And the studies -- so, basically, low survival at almost every flow. And the studies were then reverted to acoustic tracking and looking for predator hot spots and things like that. And they found them.</p> <p>And these, again, are in slack water habitats, very big channel cross-section areas that will not necessarily respond to the fish energetics just by throwing down high flows. I think predation losses will continue to occur in these habitats.</p>	<p>The commenter is providing information regarding predator removal. Please see Master Response 1.1, General Comments, for responses to comments that do not make a general comment regarding the plan amendments or raise significant environmental issues. Please see Master Response 3.1, Fish Protection, regarding predation and the importance of flow in the reasonable protection of fish. Please see Master Response 5.2, Incorporation of Non-Flow Measures, regarding the incorporation of non-flow measures, including predation, into the plan amendments.</p>
898	10	<p>You see these well used relationships between lagged outflow and escapement. So, what is the flow in the year that the smolts were reared, and then what are the escapement two or three years later.</p> <p>And I actually did this analysis for Fish and Wildlife back in the early 2000s. And the San Joaquin Basin is kind of unique amongst all of the tributaries of the Central Valley in that this relationship shows up. It actually doesn't show up in the Sac side. But the snow-melt signals and the high rainfall amounts that usually accompany El Niño and other conditions, so good</p>	<p>The comment is not raising significant environmental issues. Please refer to Master Response 3.1, Fish Protection, regarding the need for, and expected benefits of, a more variable flow regime, as well as the scientific basis of the plan amendments and the use of unimpaired flow.</p>

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		<p>ocean conditions, high outflow events produces this fantastic relationship. But you see here in 2006, or 2004 to '05 time frame, it kind of broke down. And there was an ocean fishery collapse. [ATT 2: ATT 5] This has happened -- we don't have really good records back into the, you know, 1800s or 1900s, but this happens with some regularity. There are changes in ocean circulation.</p> <p>The fear is that this is happening, of course, more and more as we're getting sort of global climate change dread on our minds that we may not really know what's going on in the ocean in comparison to prior years.</p> <p>So, let's look at the next slide. This is that same time-lagged relationship of escapement and flow.[ATT 2: ATT 6] And, on the left panel, you see it actually explains about -- the spring outflow explains about 50 percent of the variation in annual escapement over the 1970 to 2012 period here shown. But if you shorten the analysis period to 1997, of course, incorporating that ocean fishery collapse, that correlation drops down to .3. And if you were to shorten it still, let's say, to 2005 to 2016, I'm pretty much guessing you would get a much worse relationship.</p> <p>So, the point here is, although there is a flow signal, it's not a great flow signal and it seems to be deteriorating in time. And, in all of this time, the tributary flows have remained largely the same. So, there's something else going on than what's coming out of the rimmed dams around the Central Valley.</p>	
898	11	<p>During the relicensing, TID was working with the district on study plans and we basically didn't want to touch the hot potato of Delta survival and ocean survival. And we said let's focus on just what's happening in the river. And, so, we set about to look at factors affecting in-river production, in-river survival. And the factors that we focused on were spawning conditions, so gravel quality, the Redd superimposition spawning habitat availability; seasonal water temperatures, you know, at the shoulder season, sort of early fall and late spring; as well as the in-river rearing. So, again, predation conditions and flow and temperature effects on rearing and emigrating fish.</p>	Please see response to Comment 898-7.
898	12	<p>We did this information review [ATT 2: ATT 7] pretty comprehensively favoring in-basin research over out of basin. And then we also reviewed a series of population models [ATT 2: ATT 8] that had been developed previously for the larger San Joaquin Basin, as well as the Tuolumne River. So, a couple commissioned by the districts in the 90's. And then Oakridge National Labs model, as well as CDFG's population model, and then the most recent SalSim model that was used here in the SED. And a decision was made to use a little bit more of an explicit -- it was called "individual based model," which uses actual assessment of habitat availability and its effect on fish movement and rearing through its life history. So, it's actually day-by-day habitat patch type of a model.</p> <p>And, then, this was calibrated against seasonal RSD, rotary screw trap, passage, as well as for a longer term validation.</p> <p>I'm not going to describe all the parameters, but I just want to say there's a lot of parameters in there.</p> <p>And their flow and temperature are explicitly included as is, again, habitat area, things like gravel quality, suitability based on velocity, depth, temperature, those sorts of things.</p>	Please see response to Comment 898-7.

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		<p>And let's get past that and basically just say, there is a model. It's on file. And we've got output from that model that we want to show you here today.</p> <p>So, coming back to the predation question, some people today and probably at other hearings have talked about predator removal. I actually stumbled across a recent pilot program in the Mokelumne River where they've actually done a pilot predator removal and showed, I don't have the exact percentage, but I believe it's something like a boost of 50 percent smolt productively on the basis of a pretty modest predator removal program. And that's really what I'm going to be talking about here.</p> <p>So, based on a predation study done by the districts, if we estimated around a 10,000 individuals between the two rotary screw trap monitoring locations and then a much smaller amount of striped bass, which, of course, are a little more voracious than the smallmouth and largemouth bass, but using the measured abundance and the measured consumption rates, if we took that population and we reduced it by either 10 or 15 percent, we could achieve upwards -- a savings of upwards of 13 to 20,000 salmon smolts, which, in the scheme of the 11 1,100 we were talking about, that would be a few hundred if you sort of thought about the survival out to the ocean and back. You might get back a comparable number as what we're talking about from the SED.</p>	
898	13	<p>TID's population model on the next slide [ATT 2: ATT 11]. Essentially, using that model as a tool, we assess that if we reduce predation by a modest 10 percent, we could see a boost in smolt production, and, thereby, a boost in salmon escapement, presumably, by as much as 60 percent.</p> <p>Next slide. [ATT 2: ATT 12]</p> <p>So, this is -- we also have the ability because of some floodplain models developed by the districts and temperature models and a number of other models to look at some of the proposals under the SED. And we ran a scenario including predation reduction, as well as, the 40 percent unimpaired, the daily 40 percent unimpaired, not the monthly that was in the SED documentation, but a 40 percent unimpaired scenario. And, essentially, a 10 percent reduction in predation in this river-wide would essentially beat a 40 percent unimpaired flow.</p> <p>It's not easy. It means you got to get out there every year, maybe every second year or something, doing a predator suppression. But it could achieve comparable benefits as the flow proposal.</p> <p>So, next slide.[ATT 2: ATT 13]</p> <p>Available Tuolumne River studies do not appear to have been reviewed by the SED preparers. Flow only explains salmon productivity partially. Non-flow factors, such as predation, appear largely unaffected by flow in many years, in particular, as we moved on into the Delta habitats. Temperature is another example of that. And then model predator reductions can potentially achieve comparable benefits.</p>	Please see response to Comment 898-7.
898	14	<p>General comments in my quick reading of the document. The districts will be putting together formal comments. But, essentially, although it looks like other factors are acknowledged in the SED document, they don't appear to be used to build the flow proposals, and they don't appear to have been used in the Delta -- the models which appear</p>	Please see Figure 2.3 in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, which shows the changes to annual stored, diverted, or consumptively used water upstream of Vernalis from 1930 through 2009. Also see Figure 2.4, Table 2.4, Table 2.9, and Table 2.10 in Appendix C, which show changes to water use and flow during this same time

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		<p>to be largely relying on flow only.</p> <p>If we look at the factors shown relevant to salmon ecology, annual divergence from the Tuolumne have been unchanged on an annual basis since 1926, and seasonal discharges from the San Joaquin tributaries have pretty much remained stable or have increased in the recent decades. Whereas, Delta and ocean survival and returns have gone down. So, clearly, something other than tributary flows are affecting salmon returns.[ATT 2: ATT 14]</p> <p>Now, you might hear arguments that sort of a straw that broke the camel's back kind of thing, like there's multiple stressors, and if we relieve this stressor, it will help things. But I don't see a lot of evidentiary science. That sounds very attractive. I don't see a lot of evidentiary science that actually shows that, that you could sort of fight global warming impacts on the ocean productivity with tributary flow increases and that kind of thing.</p>	<p>period.</p> <p>New Don Pedro Reservoir (2.03 million acre feet) was completed in 1970 to replace Old Don Pedro (290 thousand acre feet) which was completed in 1923 (see Table 2.1 of Appendix C for more information). The commenter is asserting that this new reservoir did not change water use patterns on the Tuolumne River. The commenter's statements regarding changes to flows and changes to water use are unsupported by the commenter and are not accurate.</p> <p>As shown in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, Figure 19-1, salmon abundance in the San Joaquin tributaries has declined while other rivers in the Central Valley have seen steady or increased population. Salmon from all rivers in the Central Valley are affected by Delta and Ocean conditions similarly. Please see Section 3.6, Analyses of Flow Effects on Fish Survival and Abundance, of Appendix C regarding the limiting factors of salmon abundance on the San Joaquin tributaries. Also refer to Master Response 3.1, Fish Protection, for further discussion of the current fish decline and the need for increased and more variable flows, and regarding justification and description of the plan amendments for protecting fish.</p>
898	15	<p>On adaptive management: Basically, as you've seen here, the correlations are not so good, sort of your typical environmental variability when you do a biological metric. If you're seeing 40 percent R-squared or something, that's actually kind of gold star territory, you're happy that you can explain 40 percent of something. But I'm concerned that the intrinsic variability of most plausible metrics that might be used for adaptive management, whether it's escapement or productivity or genetics or whatever it is, there is sort of an intrinsic variability to that.</p> <p>And if we try to pretend that there's some adaptive management process that can sort out the right answer between 40 percent and 50 percent unimpaired flow, what would be the response in those metrics amongst the 50 percent noise? How long is it going to take to discern whether that effect is real or just some change in ocean conditions? And I'm not really confident in the structuring of the adaptive implementation of framework, that it actually will inform future management decisions.</p> <p>I have a feeling it will be sort of a year-by-year arguments and then just chasing. So, hopefully, that gives a taste of sort of the depth and breadth of the analysis we've done through the FERC process. That's available either through us or through the FERC website.</p>	<p>Please see Master Response 2.2, Adaptive Implementation, and Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding adaptive implementation, adaptive management, biological goals and monitoring. The State Water Board recognizes that it can take many years to see a response to changed conditions. As more fully described in Master Response 2.2, Adaptive Implementation, that is why adaptive implementation need not rely solely on biological goals. Other things like monitoring of temperature and habitat conditions can be used as indicators of expected biological responses.</p> <p>Master Response 2.2, Adaptive Implementation, provides additional description and examples of how adaptive management may proceed and the bounds under which it may do so.</p>
898	16	<p>The Bay-Delta Plan as currently proposed perpetuates the broken adage of "Fish versus Farmer." This region's entire economy is built around its historic use of surface water. We must maximize the ways to promote a healthy fishery while being as efficient as possible with the people's water, just like we do all over California today, both on farm and at home.</p>	<p>Please see Master Response 1.1, General Comments, and Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding the State Water Board's consideration of beneficial uses.</p>
898	17	<p>What we have attempted to do to show you in the amount of time allotted to TID today is to show you that there are alternatives other than just flow to improve the fishery. There is best available science that has been conducted on the Tuolumne River that predicts much better results with much less water than is required in this proposed Bay-Delta Plan in front of you today.</p>	<p>Please see response to Comment 898-7.</p>
898	18	<p>The plan you propose has extremely high human cost and predicts low returns for the environment. No one is arguing that the Tuolumne River is a highly modified complex ecosystem that needs improvement. And flow is an important component of a healthy ecosystem. However, history shows that regulated blocks of water for the environment</p>	<p>Please see Master Response 1.1, General Comments regarding the relationship of the plan amendments to the 2009 Delta Reform Act. Please see Master Response 3.1, Protection of Fish and Wildlife regarding the justification of the plan amendments and the unimpaired flow approach for the protection of fish.</p>

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		<p>have not delivered promised results. Communities have been devastated by lost water, but the native fisheries often continue to decline.</p> <p>This proposed plan is heavy-handed and ignores the state's commitment to co-equal goals. The 2009 Delta Reform Act sets a lofty standard for future water policy-making in the State of California, more reliable water supply, while protecting and enhancing ecosystems. This approach, unimpaired flow as a water management tool, erodes water supply for de minimis environmental gains. High cost and low returns.</p>	
898	19	<p>Because of TID's historic reliable water supply in this region, we stand as a beacon of hope for a successful rollout of the Sustainable Groundwater Management Act. This proposal will limit our ability to reach the goals set forth in this landmark 2014 piece of legislation.</p>	<p>Please see response to Comment 898-2.</p>
898	20	<p>The plan states significant but unavoidable human impacts. And between the City and County of San Francisco and the communities around us here today, our respective economists predict billions of dollars of economic loss during dry periods and thousands of lost jobs. And those numbers are modeled at the 35 percent unimpaired flow as proposed in the 2012 version, and is only speaking for the Tuolumne River. All of this for a projected increase of 1,200 fish between the three rivers. This, in my opinion, is not balance.</p>	<p>Please see Master Response 1.1, General Comments, regarding the approach and scope to the analysis contained within the Recirculated SED and State CEQA requirement(s) to evaluate physical environmental impacts (see also Chapter 4, Introduction to Analysis, for more information regarding evaluation of physical environmental impacts). Significance determination(s) on human impacts, as the commenter identifies, are not required. Please see Master Response 1.1 for a general discussion of the regulatory context for considering economics and general responses to comments that attempt to compare economic results across different resources and for general responses to the different resources considered in the economic evaluation in the Recirculated SED (primarily contained within Chapter 20, Economic Analyses). Please also see Master Response 8.0, Economic Analyses Framework and Assessment Tools, and Chapter 20, Economic Analyses, Section 20.1, Introduction, for additional information the regulatory context and the scope of economic considerations and evaluations within the SED. Please see Master Response 3.1, Fish Protection, regarding the scientific justification for the plan amendments and information regarding how and why the State Water Board ran the SalSim model. 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>
898	21	<p>I and others from this community have engaged in various conversations to offer up solutions outside of a flow only approach. These conversations include topics such as functional flows. This is an example of a 21st Century approach that advocates for a much more holistic view of flows.[ATT 3] I'll quote briefly from Dr. Cliff Dahm and others' work: "We propose a functional flow approach to managing heavily modified rivers. The approach focuses on retaining specific process-based components of the hydrograph rather than attempting to mimic the full natural flow regime. Simply stated, the design of a more natural flow regime without consideration of the implications for sediment transport in channel is likely to have a limited success in river management and restoration." End quote.</p> <p>In other words, just turning the dial on flow in a highly-modified river system like we have will likely not produce the desired environmental benefit. TID staff hates it when I go off of my notes, but I would love to have a conversation with you along the topic of Peter Moyle's "novel ecosystems," and how we are never going to be able to be successful until we first acknowledge what we're looking at today. We can't just turn back the clock and ignore the facts that humans and civilization have developed the rivers and we've developed the communities and we've built farms and factories, and we have to deal with what we have in front of us if we're going to be successful.</p> <p>Our conversations -- I'm back to the thought process of me putting up different conversations than just this proposal. We talked about functional flows, and we've also had conversations that have included considerable emphasis on non-flow measures, such as</p>	<p>Please see response to Comment 898-7.</p>

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		predation and aquatic weed control and habitat restoration, integration of the latest technology into aging canal infrastructures to promote water efficiencies on farm.	
898	22	<p>We spent a couple of hours out looking at TID's latest water conservation project. Significant investment by the farmer community around you in facility that integrates the latest technology and ways to make sure that we're being as efficient as possible with the people's water.</p> <p>Build on the district's track record of real monitoring, adaptive and dynamic managing, and transparent reporting.</p> <p>Additional storage, both above and below ground, on- and off-stream, storm water capture and reuse, all options on the table. Even though TID's diversions have not changed since 1926, we must grow the pie in order to satisfy the competing demands for this finite resource.</p> <p>I am convinced that this approach, when led by local stakeholders with passion and knowledge of the ecosystem, agriculture, and communities will deliver far more fish while protecting our livelihoods.</p>	<p>Please see Master Response 1.1, General Comments, 1 acknowledging the concerns of elected representatives and other community members and responses to comments regarding non-flow measures. Please see Master Response 2.4, Alternatives to Water Quality Control Plan Amendments, for responses to comments regarding alternatives to the plan amendments. Please see Master Response 3.1, for responses to comments regarding benefits of plan amendments for fish.</p>
898	23	<p>We cannot settle for a plan that only proposes to generate 1,200 more fish. Our community deserves better than this, and the State of California can do better than this. These rivers are cherished by the people of San Joaquin, Merced, and Stanislaus County. We recognize that healthy farms are fed by healthy rivers. We have ownership in the outcome.</p> <p>I would like to close with just this one last comment. What is proposed in these over 3,500 pages will lead to years, possibly decades, of litigation if adopted. The last 30 to 40 years have been called the era of conflict in California water politics and policy. The same period of time has largely been a lose/lose for both the environment and for farms. Neither our communities nor the ecosystem can afford to repeat the failed policies of the past.[ATT 3: ATT 1]</p> <p>I urge you to consider the collaborative, comprehensive, science-based plan that TID and others around us are proposing. Chair Marcus, here is the challenge, here is the heart of the matter, what's in this plan does not give us the room to work with the various agencies, primarily out of Sacramento and some from Washington, DC, to do the things needed to get the river what it needs and serves. Our respective agencies can fight each other for the foreseeable future, or we can do something meaningful for the river and do it soon. Let's roll up our sleeves and agree to a plan that follows both the letter and the spirit of the California Environmental Quality Act, one that minimizes impacts to humans and maximizes benefits to the fishery, one that truly considers alternatives and provides a path with low human cost and high environmental results.</p>	<p>Please see Master Response 3.1, Fish Protection regarding SalSIM model results.</p> <p>Please see Master Response 1.1, General Comments, for responses to plans and proposals suggested by commenters.</p> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for additional information about the Program of Implementation and the Stanislaus, Tuolumne, and Merced Working Group.</p> <p>Please see Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, for responses to comments proposing alternatives to the plan amendments.</p>
898	24	[ATT 1: TID Water & Power 2016 Bay-Delta Plan Amendment and SED, Modesto Public Hearing, December 20, 2016 - PowerPoint slides]	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.
898	25	[ATT 1: ATT2 Modesto Public Hearing PowerPoint slide: "TID, Past and Present"]	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.
898	26	[ATT 1: ATT 4 Modesto Public Hearing PowerPoint slide: "Carryover Storage Required"]	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.
898	27	[ATT 1: ATT 5 Modesto Public Hearing PowerPoint slide: "Sustainability Threatened". Turlock and Modesto subbasins not designated by DWR as "Critically Overdrafted"]	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.
898	28	[ATT 1: ATT 6 Modesto Public Hearing PowerPoint slide: "If the SED were in place during the 1990-2015 period, TID would have been able to deliver a full amount of available water in only 5 out of 26 years."]	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.
898	29	[ATT 1: ATT 7 Modesto Public Hearing PowerPoint slide: "Does the SED achieve its own stated goals?"]	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.
898	30	[ATT 1: ATT 8 Modesto Public Hearing PowerPoint slide: Project Goals, SED pages ES-9-10]	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.
898	31	[ATT 1: ATT 9 Modesto Public Hearing PowerPoint slide: Project Goal No. 1, from SED, Page ES-9]	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.
898	32	[ATT 1: ATT 10 Modesto Public Hearing PowerPoint slide: The SED-Stated Benefit, 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.
898	33	[ATT 1: ATT 11 Modesto Public Hearing PowerPoint slide: The SED-Stated Impacts, from Table 20.2-1]	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.
898	34	[ATT 1: ATT 12: Modesto Public Hearing PowerPoint slide: Changes in the Bay-Delta, from SED Page ES-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.
898	35	[ATT 1: ATT 13: Modesto Public Hearing PowerPoint slide: "Balancing Questions"]	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.
898	36	[ATT 1: ATT 14: Modesto Public Hearing PowerPoint slide: FERC Relicensing]	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.
898	37	[ATT 2: Modesto Public Hearing PowerPoint slide: Comments on SED and proposed Plan Amendments, Examining Flow and Predation impacts on Chinook salmon productivity in the Tuolumne River. Noah Hume, Stillwater Sciences, 12/20/16]	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.
898	38	[ATT 2: ATT 1: Modesto Public Hearing PowerPoint slide: Background - Don Pedro Project FERC Project No. 2299]	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.
898	39	[ATT 2: ATT 2: Modesto Public Hearing PowerPoint slide: Salmon Survival vs Flow, from Don Pedro Project FERC Project No. 2299]	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.
898	40	[ATT 2: ATT 3: Modesto Public Hearing PowerPoint slide: Assessing In-River Predation, from Don Pedro Project FERC Project No. 2299]	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.
898	41	[ATT 2: ATT 4: Modesto Public Hearing PowerPoint slide: Assessing Delta Predation, Emigration through LSJR and South Delta, from Don Pedro Project FERC Project No. 2299]	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.
898	42	[ATT 2: ATT 5: Modesto Public Hearing PowerPoint slide: Tuolumne Spawners vs Flow – General relationship between time lagged outflow but prior flows do not consistently	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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		explain escapement. From Don Pedro Project FERC Project No. 2299]	
898	43	[ATT 2: ATT 6: Modesto Public Hearing PowerPoint slide: Tuolumne Spawners vs Flow -- Relationship between time lagged outflow and salmon returns growing weaker in recent years. From Don Pedro Project FERC Project No. 2299]	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.
898	44	[ATT 2: ATT 7: Modesto Public Hearing PowerPoint slide: Key In-River Issues Affecting Tuolumne River Salmonids. From Don Pedro Project FERC Project No. 2299]	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.
898	45	[ATT 2: ATT 8: Modesto Public Hearing PowerPoint slide: Modeling In-River Factors Affecting Chinook salmon. From Don Pedro Project FERC Project No. 2299]	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.
898	46	[ATT 2: ATT 9: Modesto Public Hearing PowerPoint slide: Modeling In-River Factors Affecting Chinook salmon. From Don Pedro Project FERC Project No. 2299]	This comment discusses modeling used for the Don Pedro project. Please see Master Response 1.1, General Responses for responses to comments that do not raise significant environmental issues associated with the analysis contained within the SED or request a modification to the plan amendments.
898	47	[ATT 2: ATT 10: Modesto Public Hearing PowerPoint slide: Considering Predator Removal. From Don Pedro Project FERC Project No. 2299]	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.
898	48	[ATT 2: ATT 11: Modesto Public Hearing PowerPoint slide: Considering Predator Removal. From Don Pedro Project FERC Project No. 2299]	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.
898	49	[ATT 2: ATT 12: Modesto Public Hearing PowerPoint slide: Modeling predator removal vs flow benefits. From Don Pedro Project FERC Project No. 2299]	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.
898	50	[ATT 2: ATT 13: Modesto Public Hearing PowerPoint slide: Summary and Closing. From Don Pedro Project FERC Project No. 2299]	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.
898	51	[ATT 2: ATT 14: Modesto Public Hearing PowerPoint slide: Summary and Closing. From Don Pedro Project FERC Project No. 2299]	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.
898	52	[ATT 3: Modesto Public Hearing PowerPoint slide: 21st Century Approach]	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.
898	53	[ATT 3: ATT 1: Modesto Public Hearing PowerPoint slide: Let's end "Era of Conflict"]	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.
899	1	I agree with our environmental speakers here today. Our population is growing and we need more food production. Food production obviously requires water. And I encourage you to try to find the compromise.	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.
899	2	In the 70s, when I was practicing here, we went through a severe drought. And the farmers fallowed half of their land in those days, doubled up the water, and grew half a crop. Changes in regulatory requirements and consumer demands have changed what the farmers are growing. It's driven by market. All right. So, in this case, we have more almonds being planted. All the new almonds are being put in on drip systems or micro-irrigation, which uses less water than flood irrigation of the old style or row crop irrigation. Now, in Turlock, this is just one community, for example, we have five cheese plants, two powder plants, one ice cream plant, one Blue Diamond almond processing center. And that's just to name a few of the businesses. Collectively, these businesses represent	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.

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		<p>thousands of workers in transportation, at the facility, farmworkers; all depend upon an adequate supply of water. Two, three, sometimes four generations have been involved in building these operations. It takes over \$3 million to build a dairy facility today, and that's just for the facility not the land that is used; \$8,000 to \$10,000 to develop an acre of almonds. And almost all of these operations have debt to service. And the lenders who have provided this debt have based upon their historical production of crops to service these loans. If they cannot grow their crops, their farms are actually at risk because of debt service.</p> <p>The Board's staff is incorrect in assuming that there will be a reallocation by market forces of the water supply. Cows cannot go without feed or water for a year, trees and vines can't go without water for a year.</p>	
899	3	<p>One of your speakers here also talked about the recharge of groundwater in the basin. That's going to affect a lot of domestic wells. I attended one hearing here in the Valley already where a lot of people who spoke, who are at the lower end of the economic strata, living on ground well waters that have 25-, 75-foot wells that are drying up. You have the Public Trust Doctrine. You've already heard many speakers about the taking. There was one additional item I would like to point out in that regard. The dams were not built by the state. They were built by the users. And when you store your water in there, that is a taking.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
899	4	<p>I have just some points for a proposed solution. Number 1, expand the season and limits on predators. Number 2, increase the size and number of hatcheries. Number 3, my hatchery clients suggest that instead of the Fish and Wildlife releasing fingerlings at six inches, grow them to one pound where they're more likely to be less consumed by the predators. Improve stream habitat and eliminate hot spots. The functional flow model, I think you're familiar with--consider the direct quote out of Peter Moyle's study on the Putah Creek that very little water is necessary to support this functional flow model, which is a good compromise between agriculture and the fishing industry.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>