WATER & POWER
Serving Central California since 1887

Modesto Irrigation District
The Power to Grow

July 26, 2018

State Water Resources Control Board
Attn: Jeanine Townsend, Clerk to the Board
1001 I Street, 24th Floor
Sacramento, CA 95814
Email: LSJR-SD-Comments@waterboards.ca.gov

Re: Comment Letter – Revisions to Proposed Bay-Delta Plan Amendments

Dear Ms. Townsend:

These comments are submitted on behalf of the Turlock and Modesto irrigation districts (the Districts), the two oldest irrigation districts in California. The Districts have a long history of using local resources to manage the Tuolumne River for the benefit of the entire region and beyond. In addition, the Districts have worked cooperatively with the City and County of San Francisco (CCSF) to manage the watershed for fish and wildlife, irrigation and municipal water supply, recreation, hydroelectric energy, and flood control.

It is disappointing that the State Water Resources Control Board (SWB) chose this path. Rather than take a cooperative and collaborative approach driven by science and balancing the needs of all beneficial uses in order to resolving the issues before it, the SWB has chosen a path that will result in litigation and delay wherein communities, environmental resources, the SWB and the Districts focus their efforts on prolonged disputes rather than implementing actions that can benefit all.

The SWB, through the Substitute Environmental Document (SED) has chosen the wrong project objective—40% of unimpaired flow between February and June. By selecting this objective before the plan was developed, the SWB has eliminated many excellent alternatives that failed to meet its stated objective. The approach taken by the SWB is the wrong way to address the issues. Instead of asking how much water the fish need to reach "viability," the SWB should have been asking the broader question of what factors are impacting fish populations and how can those be mitigated in a holistic, scientific approach. The narrow objective selected by the SWB guarantees that other alternatives, such as non-flow habitat improvement measures and predator suppression, will not be undertaken and has resulted in the SWB's steadfast refusal to consider the best available scientific information regarding the Tuolumne River.

Even though the SWB pays lip service to the notion of voluntary settlement agreements, it is clear that the entire voluntary settlement agreement process was nothing more than bad faith on the part of the State, as exemplified by the fact that the SWB never actually participated in the years long

settlement discussions in any meaningful and sustained manner. The SWB's interest in voluntary settlement agreements appears to have been a strong-arm tactic to force the irrigation districts to implement the SWB's flawed and misguided plan under the guise of dubious claims about improving fish populations.

The Districts hereby incorporate the comments of the San Joaquin Tributaries Authority. Under protest, and without waiving any legal claims that the SWB has violated, among other things, its obligation to recirculate the substitute environmental document under California Code of Regulations, title 23, section 3779(e), the Districts submit the following written comments and urges the SWB to reject the Proposed Final Amendment and the Final SED.

Specific Comments

The 4th Agreement

The Appendix K requirement of taking a significant percentage of the unimpaired flows of the system, combined with storage limitation requirements that illegally take significant amount of storage from the system and other use restrictions, was not correctly evaluated in the SED. The Water Supply Evaluation (WSE) model used by the SWB completely misrepresents and incorrectly calculates the appropriation of the water from the Tuolumne River by the Districts. Consequently, the SED incorrectly depicts the resulting operations on the Tuolumne River system, thereby rendering any results from that model meaningless.

The WSE model arbitrarily and incorrectly makes assumptions about the implementation of the 4th Agreement between the Districts and CCSF.

In actual practice, implementation of both Articles 7 and 8 of the 4th Agreement and the historic agreements between the Districts and CCSF will have far greater impacts to the Districts and CCSF than what is represented in the SED. Isolating Article 8 and solely analyzing the effects of that article rather than the totality of the legal basis of current operations, renders the SWB's water supply analysis arbitrary and capricious.

The Tuolumne River Management Plan vs. the SWB Plan

On November 30, 2017, the Districts filed and Amended Final License Application (AFLA) for the Don Pedro Project and a Final License Application (FLA) for the La Grange Project. While these two filings occurred after the comment period for the 2016 SED had ended, many of the studies contained in the applications had been completed and submitted to the SWB with the Districts' comments to the 2016 SED and resubmitted as an attachment to the Modesto Irrigation District's individual comments filed in response to this document. These studies and results, despite being the best available science on the Tuolumne River, continue to be largely ignored by the SWB in its responses in the 2018 version of the SED. Therefore, the Districts are once again submitting the AFLA and the FLA which contain the studies referenced herein, the responses to comments, the Additional Information

Requests filed with FERC, and supplemental information. The Districts hereby incorporate and include by reference the files and their contents listed on Attachment A.

Contained within the AFLA is the Districts' preferred plan known as the Tuolumne River Management Plan (see AFLA, Exhibit E, Section 5.0 in folder "DP_AFLA_Public" in Attachment A).[1] The Districts are working with the Federal Energy Regulatory Commission (FERC) to renew the license for the Don Pedro Project. This involves a lengthy and detailed process as the public, state and federal agencies, including the SWB as well as the California Department of Fish and Wildlife amongst others, and other interests offer their input.

The Districts began this process back in 2011, five years before the license was set to expire. The District then spent the next several years developing study plans and conducting scientific studies about the effects of the project on everything from fisheries and non-native predators to water flow, temperature and habitat suitability, including gravel quantity and suitability, food availability, and spawning and rearing habitat. This entire process was a collaborative, public effort wherein all parties, including the SWB, were afforded numerous opportunities to comment on and participate in the study designs, scopes, and implementation.

Once these were completed, the Districts took all the facts gathered and created a holistic plan that balanced the sometimes conflicting needs. Along the way, the public and resource agencies offered input and suggested changes that occasionally required new studies and comment periods.

The predicted benefits of the Tuolumne River Management Plan can be seen in the figures below from the Districts' Tuolumne River Chinook (TRCh) and Tuolumne River O. mykiss (TROm) models, two of several models developed and vetted to the public and resource agencies (including the SWB) during the preparation of the AFLA. Both of these models were available to the SWB staff prior to the 2016 SED. Both models have been and continue to be ignored.

The results clearly show that Chinook salmon smolts per female spawner (a measure of in river productivity) and *O. mykiss* young of the year (YOY) production dramatically increase under the District's Tuolumne River Management Plan when compared to the SWB's flow proposal of 40% unimpaired flow from February through June. In both figures "SWBREA" refers to the flow recommendations made by the SWB staff in their comments on the AFLA and FERC's Ready for Environmental Analysis. Of note is the fact that the SWB's 40% flow proposal actually makes conditions *worse* for juvenile *O. mykiss* as compared to existing conditions.

[1] Another source of information about the Don Pedro Project and the Tuolumne River Management Plan can be found at http://tiddonpedro.com/.

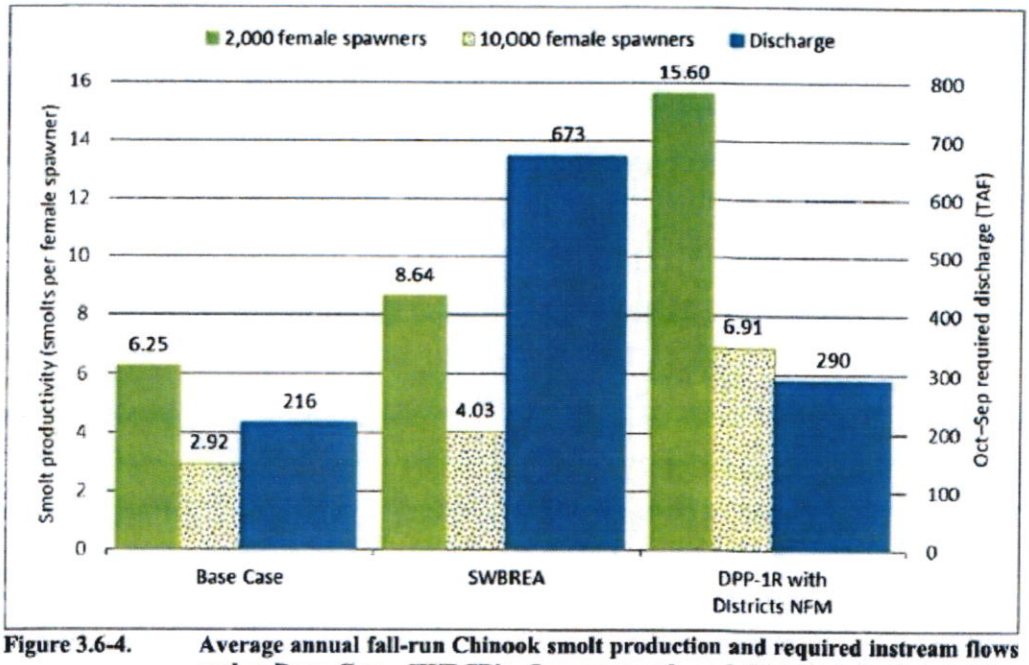

Figure 3.6-4. **Average annual fall-run Chinook smolt production and required instream flows under Base Case, SWRCB's flow proposal, and Districts' Preferred Plan (including Districts' non-flow measures (NFM)). Districts' instream flow is at La Grange gage. Flow below infiltration galleries at RM 26 is 241 TAF.**

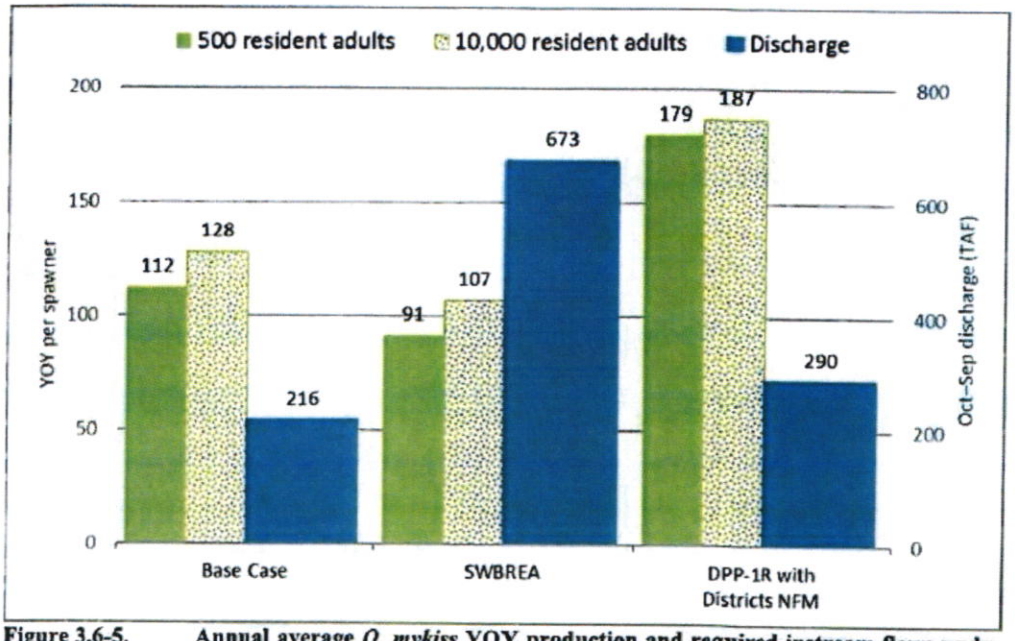

Figure 3.6-5. **Annual average *O. mykiss* YOY production and required instream flows under Base Case, SWRCB's flow proposal, and Districts' Preferred Plan (including Districts' non-flow measures (NFM)). Districts' instream flow is at La Grange gage. Flow below infiltration galleries at RM 26 is 241 TAF.**

Temperature Requirements of Salmonids

Contrary to assertions in Master Response 3.1, the SWB did use "best available science" when evaluating the temperature requirements of salmonids in the San Joaquin tributaries. As defined in the Delta Plan, best available scientific information is "developed through a process that meets the criteria of (1) relevance, (2) inclusiveness, (3) objectivity, (4) transparency and openness, (5) timeliness, and (6) peer review." Relying instead on laboratory studies conducted from around the world, the SWB summarily rejected a peer-reviewed independent scientific study of wild Tuolumne River *O.* mykiss.[2] This rejection is arbitrary and capricious, particularly in light of the above definition of best available scientific information, given that scientific information demonstrates it is now widely accepted that fish species' thermal sensitivity and tolerance can vary among populations. The Districts conducted site-specific studies on the Tuolumne River, and have filed study reports with FERC demonstrating that *O. mykiss* in the lower Tuolumne River have thermal tolerances that differ from populations in northern regions like the Pacific Northwest. (See Attachment A, DP_AFLA_Public, Attachment C PUBLIC Studies and Memoranda, StdyRpt_W_AR_14 and StdyRpt_W_AR_14_NMFSResp.) The Swim Tunnel Study (W&AR-14), in particular, was developed into a paper and published in the journal *Conservation Physiology* in November 2016, and is part of the peer-reviewed scientific literature on the subject of the thermal tolerance of salmonid species.

Rather than treat the EPA 2003 temperature guidelines as they were intended, the SWB has instead illegally elevated the EPA guidelines to the level of water quality objectives. Rejecting the Verhille et al (2017) report, the SWB asserts that "they [SED commenters] do not provide sufficient evidence to support modifying or abandoning the application of *USEPA-recommended temperature criteria* in the SED analysis." (Master Response 3.1, p.46.)

The Districts acknowledge the importance of maintaining a suitable thermal regime and conducted site-specific studies to identify a regime that supports the aquatic life beneficial use. However, it is not reasonable to draw a direct line between temperature and population dynamics, while ignoring all other limiting factors to salmonid populations in the Tuolumne River. For example, Dr. Sean Hayes of NOAA commented on the impact of predation in the Central Valley at the April 19, 2016 meeting of the SWB.[3] He stated:

"Someone did a very elegant model and basically figured out how many pounds of fish the striped bass population needs to eat to survive every year, and that estimate was roughly on the order of 25 million kilograms of fish that striped bass need to eat—crayfish, etc. to meet their energetic requirements every year. So working with juvenile salmon and having a rough estimate of the biomass of all the juvenile salmon in the Central Valley, I did a very conservatively high estimate and came up with a back of the envelope estimate of roughly 240,000 kilograms of juvenile salmon, which means that if striped bass were to eat every single salmon in the Central Valley, it would meet 1% of

---

[2] Throughout Master Response 3.1 and elsewhere, the SWB incorrectly refers to all *O. mykiss* as "steelhead", the anadromous form of *O. mykiss*.

[3] https://mavensnotebook.com/2016/05/26/alien-vs-predator-factorsthat-influence-salmon-predation-in-the-sacramento-san-joaquin-delta/

their diet. This isn't an accusation of the bass; it's just saying the y could easily account for missing in the Central Valley."

In short, there is no scientific justification for continuing to rely upon 20-year old lab studies and field observations from outside the Central Valley. In addition to the numerous studies conducted by the Districts, the scientific understanding of the thermal tolerance of salmonids considerably in recent years compared to the relatively dated EPA 2003 study. It is now widely accepted that a fish species' thermal sensitivity and tolerance can vary with life stage, age, and among populations (e.g., Hochachka and Somero 2002; Fangue et al., 2006; Schulte et al., 2011; Somero et al., 2017; Komoroske et al., 2014; Tepolt and Somero, 2014). Variation in performance traits (e.g., growth, metabolic rate, aerobic scope, and swimming speeds) has ecological and fitness implications, and adaptation to thermal regimes can occur in a few generations (Barrett et al., 2010). Lindley et al (2006), a source document frequently cited by resource agencies, acknowledge the site-specific nature of such adaptation, stating that *"[The] wide distribution across diverse ecological conditions should have provided Central Valley O. mykiss with substantial opportunities for adaptation to local conditions…."* (See Attachment S, "Reply Comment to CDFW's Late-Filed Technical Memorandum on Temperature Criteria and Applicability of EPA (2003) Temperature Guidance to Tuolumne River Salmonids" in "Response to February 16, 2018 Request for Additional Information, Resource Agency Late Filing, and Other Related Information" (folder "DP_ResponseToAIR").)

More recently, the U.S. EPA has indicated that the use of EPA (2003) temperatures may not be appropriate for use in Central Valley rivers:

"With respect to the applicability of the EPA temperature guidance mentioned above, ***the EPA considers there to be an open and legitimate scientific question about the adaptability of salmonid populations to warmer conditions in California****. The EPA is aware of research with salmonid species from California rivers that suggests populations at the southern limit of their distribution may be locally adjusted to warmer temperatures relative to more northern populations, and that these findings challenge the use of a single thermal criterion along the entirety of its distribution range."* (Emphasis added.) (Letters from D. Lee Forsgren, USEPA, to Casey Hashimoto, TID, and John Davids, MID, dated June 27, 2018, and attached hereto as Attachment B.)

Technical Comments on Appendix K

The SWB allowed only three weeks to comment on the revised draft SED and indicated it would not accept any comments beyond those provided on Appendix K. This is not adequate time to review all the changes to the revised draft SED, especially due to the fact that Appendix K has established, if adopted, that the Water Quality Control Plan (WQCP) update will require the Districts to release from the Don Pedro Project 40% of the estimated unimpaired flow at La Grange from February 1 through June 30. Additionally, the revised draft contains numerous responses to comments that indicate SWB staff has misinterpreted the technical comments of the Districts. We reiterate here that as a general matter the comments of the Districts filed on March 17, 2017 have not been adequately addressed, especially as related to the SWB's continued lack of consideration of the extensive scientific information available through the FERC licensing processes for the Don Pedro and La

Grange projects on the Tuolumne River. Comments on Appendix K are provided below by first copying from the Plan, then providing the Districts' comment.

PG 1: ***"This Water Quality Control Plan covers the Bay-Delta Estuary and tributary watersheds (Bay-Delta Plan or Plan)."***

Comment: The SWB's proposed WQCP begins with, and then carries forward throughout its entirety, this knowingly false assertion. The WQCP changes as proposed in the revised draft SED apply only to the San Joaquin River (SJR) portion of the Bay-Delta, and to be more precise, only three eastside tributaries of the SJR watershed. The only tributaries to the lower SJR (LSJR) that are the subject of the proposed WQCP amendments are the Stanislaus, Tuolumne, and Merced rivers (the three "eastside tributaries"), which have a collective drainage area of 4.335 mi^2. The largest watershed within the lower SJR above Vernalis is the upper San Joaquin River (USJR). According to Table 2-1 of Chapter 2 of the revised draft SED, the drainage area assigned by the SWB to the USJR is mistakenly identified as 1,675 mi^2, while Table 2-1 of Appendix C lists the drainage area size of the USJR as 5,813 mi^2. The USGS identifies the drainage area of the LSJR above the Vernalis gage as 13,539 mi^2 (https://pubs.usgs.gov/of/2004/1015). Therefore, the three "eastside tributaries" collectively amount to less than one-third of the total watershed above the Vernalis gage, yet are being called upon by the SWB to provide the flow needed to "fix" the problems associated with lack of flow from the entire 13,500 mi^2 LSJR basin. As the USGS records show, the remaining 9,200 mi^2 of SJR watershed frequently contribute very little flow to the LSJR at Vernalis due to water diversions. The three "eastside tributaries" are being required by the amended WQCP to make up for this lack of water from the other parts of the watershed. Therefore, the statement above found on page 1 of Chapter 1 of Appendix K is misleading and incorrect.

PG 4: ***"This plan establishes water quality objectives for which implementation can be fully accomplished only if the State Water Board assigns some measure of responsibility to water rights holders and water users to mitigate for the effects on the designated beneficial uses of their diversions and use of water. "***

"This plan protects the beneficial uses of the Bay-Delta Estuary and tributary watersheds."

These statements are unfounded. Nowhere in the revised draft SED has the SWB provided any evidence of a cause-effect relationship between the Districts "diversions and use of water" and adverse impacts on "designated beneficial uses". At best, the SWB theorizes that there are adverse effects on fish and wildlife populations due to water diversions, but never demonstrates an actual link based on scientific data and analysis. However, the revised draft SED does demonstrate, and significantly underestimates, a direct cause-effect relationship between the SWB's proposal and an economic impact to the Districts caused by the proposal. Therefore, "the plan" does not "protect" the beneficial uses of the "tributary watersheds".

PG 4: ***"Most of the objectives in this ongoing plan are being, and will continue to be, implemented by assigning responsibilities to water right holders because the parameters to be controlled are primarily impacted by flows and diversions."***

The SWB assigns the "primary" cause of reduced fall-run Chinook fish populations (the target species) to "flows and diversions". Again, this hypothesized cause-effect link is never supported by scientific data or analysis, nor is there in the revised draft a parsing or analysis of all the potential causes to clearly distinguish the "primary" cause as being "flows and diversions". The revised draft does identify a host of potential causes for the reduced fall-run Chinook populations, including ocean conditions, harvest, climate change, predation by non-native predators, hatchery practices, loss of habitat, and water withdrawal at the Delta pump stations. Without any evidence or scientific evaluation, the SWB declares the "primary" cause to be "flows and diversions". The fact that water "diversion" is the one factor of the multiple potential causes that the SWB can "control" is more likely the reason why the SWB arbitrarily has selected it as the "primary" cause. Later in the same Chapter 1 of Appendix K, the revised draft SED states the following under Section D entitled "Key Issues and Plan Updates":

"There was a rapid decline in the populations of numerous pelagic fishes in the Sacramento-San Joaquin Delta Estuary and Suisun Bay starting in 2002. This decline became known as the Pelagic Organism Decline (POD), and was studied intensely by the Interagency Ecological Program (IEP) POD work team and numerous other researchers. ***The POD studies largely concluded that the decline resulted from multiple adverse conditions, with no single explanatory factor.*** *[emphasis added] Ongoing research is largely focused on the working hypothesis that the Bay-Delta has undergone an ecosystem regime shift from highly variable environmental conditions that favored native and other estuarine-dependent species to less variable conditions that favor invasive species. Work to better understand the influence that these and other factors have in relation to POD is ongoing."*

The decline of pelagic fishes is a key issue the Plan amendments is attempting to address. While the experts involved in the IEP declare there to be no single explanatory factor, the SWB declares, without any scientific data or analysis, that "flows and diversions" are the "primary" cause.

PG 6: ***"The 2018 amendments to this Plan primarily address portions of the Plan concerning the San Joaquin River flow objectives…"***

As discussed above, the "2018 amendments" are entirely focused on the three "eastside tributaries" to the SJR, which make up less than one-third of the LSJR watershed above Vernalis. It is apparent by this statement that the SWB is intending that the entire burden "concerning the San Joaquin River flow objectives" be borne by the three "eastside tributaries" even though they make up a minority of the watershed area.

PG 6: ***"The Supreme Court pointed out that insufficient flows can cause water quality violations, and that reduced habitat caused by low flows may constitute pollution. "***

This footnote on pg 6 of Appendix K is seemingly ignored by the SWB in its own analysis. Table 7-13b regarding fall-run Chinook rearing on the Tuolumne River and Table 7-16b regarding *O. mykiss* rearing on the Tuolumne River indicate that the SWB's proposed flows for the Tuolumne River will adversely impact this vital life-stage of these fish, one of which is listed under the federal Endangered

Species Act. The revised draft of the SED does not explain how its proposed flow regime protects the fishery related beneficial uses of the Tuolumne River when the SWB's own analysis predicts there to be an adverse impact on salmonid species.

PG 7: ***"The State Water Board will conduct these planning activities with the support of the Delta Stewardship Council's Delta Science Program and the Independent Science Board to assure that Plan updates are based on the best available science."***

The currently proposed amendment to the WQCP is a "plan update" and is required to be based on the "best available science". In its current form, it is not based on the best available science. Specifically related to the Tuolumne River, over 200 individual monitoring studies and research efforts undertaken since the mid-1990s through 2016 have been largely ignored, including specific research on temperature tolerances of Tuolumne River *O. mykiss* juvenile fish that is part of the peer-reviewed scientific literature. The draft SED and the amended WQCP has been in process since 2012. During this time, including up to the present, the SWB has consistently ignored the accumulating scientific evidence on the fish populations of the Tuolumne River specifically and the Bay-Delta generally. The Districts has made information available to the SWB on a continuous basis since 2011 as part of the relicensing of the Don Pedro and La Grange projects on the Tuolumne River. In October 2017 and in March and May of 2018, the Districts filed additional information and scientific analysis relevant to the revised draft SED, and once again this "best available" scientific information has been ignored. Included in this information is an alternative Plan for the Tuolumne River, as well as a direct comparison of the SWB's proposed Plan's flow regime and the Districts' proposed plan. This analysis demonstrates that the SWB's proposed Plan of releasing 40% of the unimpaired flow from February through June requires substantially more water and produces far fewer salmonids in the Tuolumne River. On page 30 of Appendix K, the SWB goes so far as to refer specifically to the "FERC licensing proceedings" on the Tuolumne River as being "expected to yield additional scientific information that will inform future management of flows for the protection of fish and wildlife beneficial uses." Information developed through the Don Pedro and La Grange projects have been available to the SWB since 2011 on a continuous basis.

The SWB's reliance on the 2010 Flow Criteria Report as demonstrating that 60% of the unimpaired flow from the eastside tributaries is necessary to protect fish and wildlife is unfounded and not supported by the available science, including the SWB's own analysis of that alternative with the SALSIM model (see Chapter 19 of the revised draft SED). The work of Buchanan et al. (2018)[4] is another example of the improving science available to the SWB. In part, this evaluation of fall-run Chinook salmon survival through the Delta found the following: "…the juvenile survival probability through the Delta was estimated at only 0.02 (SE < 0.01), suggesting increased flows alone will not be sufficient to resolve the low survival through the Delta."

PG 11: **Regarding beneficial Uses**

---

[4] Buchanan et al., "Survival of Juvenile Fall-Run Chinook Salmon through the San Joaquin River Delta, California, 2010–2015", North American Journal of Fisheries Management, Vol. 38, No. 3 (June 2018).

One of the beneficial uses identified in the amended WQCP is "Warm Freshwater Habitat (WARM)". While the revised draft SED goes on at length describing the improvements expected to the target species of fall-run Chinook salmon because of colder water temperatures, the corresponding potential effect that must occur to warm freshwater habitat is never considered or analyzed.

Furthermore, the adverse effects to rare, threatened, or endangered species (RARE) resulting from the amended Plan's new flow regime as identified in Chapter 7 of the revised draft SED are not seriously evaluated or mitigated by the SWB.

PG 12: ***"This chapter establishes water quality objectives which ... ,when implemented, will: (1) provide for reasonable protection of municipal, industrial, and agricultural beneficial uses; (2) provide reasonable protection of fish and wildlife beneficial uses at a level which stabilizes or enhances the conditions of aquatic resources..."***

The water quality objectives are intended to protect fish and wildlife "at a level which stabilizes or enhances the conditions of aquatic resources". This is problematic because the revised draft SED never defines what the current "conditions" of the aquatic resources are in any quantitative fashion. The usual and customary manner of defining the "condition" of fishery resources is to identify population traits such as abundance, diversity, and distribution by using established metrics. Since these are lacking in the revised draft, there is no way of objectively knowing with scientific certainty and using the best available science if the "condition" of specific aquatic resources is "stabilized" or "enhanced".

PG 13: ***"They also provide reasonable protection of fish and wildlife beneficial uses designated in the "Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin" for the Stanislaus River, Tuolumne River, Merced River, and the San Joaquin River from the mouth of the Merced River to Vernalis..."***

The missing portion of the applicable river basins to which the WQCP should apply is the upper San Joaquin River (USJR). As discussed above, the entire 9,000 mi^2 of the USJR has historically contributed very little, and sometimes zero, flow to the lower SJR at Vernalis. This has led the SWB to attempt in the proposed amended WQCP to force the three smaller "eastside tributaries" to make up for the impacts to the Delta resulting from a lack of flow from the much larger USJR.

PG 13: ***"Therefore, these objectives were set based on a subjective determination of the reasonable needs of all the consumptive and nonconsumptive demands on the waters of the Estuary."***

Setting water quality "objectives" based on "subjective" determinations of resource needs falls far short of using "best available science", or any science for that matter. Such "subjective" decision-making is especially unjustified given the wealth of scientific information available to the SWB to inform its amended WQCP and the acknowledged water supply effects of the Plan.

PG 27: ***"The following water quality objectives are currently, or may in the future be, primarily implemented in whole or in part using water rights authority, but may also be implemented through water quality actions:***

1. Delta Outflow
2. River Flows: Sacramento River at Rio Vista
3. River Flows: Lower San Joaquin River
4. Export Limits
5. Delta Cross Channel Gates Operation
6. Salinity"

This section of Appendix K is where the SWB gives express recognition to the fact that the amended WQCP is placing on the three "eastside tributaries" the full responsibility for addressing the flow shortfalls caused by a lack of flow from the USJR watershed. In the original draft SED, item (3) referred to the entire San Joaquin River. The revised draft corrects this to indicate the SWB intends only to extract additional flows from the "lower" river, meaning the three "eastside tributaries".

PG 28: ***"When implementing the LSJR flow objectives, the State Water Board will include minimum reservoir carryover storage targets or other requirements to help ensure that providing flows to meet the flow objectives will not have significant adverse temperature or other impacts on fish and wildlife or, if feasible, on other beneficial uses. The State Water Board will also take actions as necessary to ensure that implementation of the flow objectives does not impact supplies of water for minimum health and safety needs, particularly during drought periods."***

In this statement, the SWB admits the amended WQCP may have significant adverse temperature "or other impacts" on fish and wildlife. The potential "other impacts" are undefined and apparently unknown at this point. Therefore, the SWB is expecting there to be other adverse impacts from the amended WQCP, but does not know what they might be. Therefore, its impact assessment is incomplete. The SWB's solution to this uncertainty is to grant itself complete control of reservoir operations, if and when unanticipated impacts arise. To "mitigate" these known and unknown potential impacts, the SWB essentially proposes to commandeer the operation of the storage reservoirs on the three eastside tributaries by requiring actions that are not yet identified. Given that the ongoing operations of two of these three reservoirs are under federal (FERC) jurisdiction, this raises issues concerning the SWB's authority to exercise such control.

The SWB also indicates that while these as yet unspecified actions would avoid any significant impact to fish and wildlife, from a water supply perspective the SWB only promises to meet "minimum" health and safety needs. This does not meet the SWB's mandate of co-equal goals.

PG-29: ***"In addition, the LSJR base flow objective for February through June shall be implemented by requiring a minimum base flow of 1,000 cfs, based on a minimum 7-day running average, at Vernalis at all times. This minimum base flow, however, may be adjusted within the range allowed by the LSJR base flow objective through adaptive methods detailed below. When the percentage of unimpaired flow requirement is insufficient to meet the minimum base flow requirement, the Stanislaus River shall provide 29 percent, the Tuolumne River 47 percent and the Merced River 24 percent of the additional total outflow needed to achieve and maintain the required base flow at Vernalis."***

In Table 3 on page 18 of Appendix K, the SWB sets forth the requirement that the minimum flow of the San Joaquin River at Vernalis is to be 1,000 cfs in October for all water year types and 1,000 cfs from February 1 through June 30 in all water year types. The statement above specifies how the minimum flow requirement is to be apportioned, meaning which water right holder is responsible for delivering their share of the flow. It is important to note that the three individual portions of flow allocated to the three eastside tributaries add collectively to 100%, meaning that the entire 9,000 mi^2 of the USJR is not required to provide even 1 cfs of the 1,000 cfs requirement. This clearly demonstrates that water is being expropriated from the three eastside tributaries to make up for the lack of any reliable flow from the entire USJR, even though the USJR has more than twice the watershed area.

PG 30: ***"Adaptive implementation could also optimize flows to achieve the objectives while allowing for consideration of other beneficial uses, provided that these other considerations do not reduce intended benefits to fish and wildlife."***

The Districts submitted comments previously describing the large number of problems with and the unworkable nature of the SWB's proposed adaptive implementation plan (AIP) concept. Those comments will not be repeated here. But to emphasize one salient point, page 30 of Appendix K contains the statement above, allowing flows to be "optimized" so long as the revised flows "do not reduce intended benefits to fish and wildlife". Neither the revised draft SED nor the amended WQCP in Appendix K clearly define the intended benefits of the SWB's new flow regime in a manner which would allow any sort of quantitative comparison between expected and "intended" benefits. The SWB admits the "objectives" to be achieved by the amended WQCP are "subjective". Scientific principles may have little bearing on goals that are subjective and subjectivity fosters a large role for bias in future decision-making.

PG 30: ***"The required percent of unimpaired flow for February through June may be managed as a total volume of water and released on an adaptive schedule during that period where scientific information indicates a flow pattern different from that which would occur by tracking the unimpaired flow percentage would better protect fish and wildlife beneficial uses. The total volume of water must be at least equal to the volume of water that would be released by tracking the unimpaired flow percentage from February through June. The Executive Director may approve such changes on an annual basis if the change is recommended by one or more members of the STM Working Group."***

While the volume of water to be released may be adjusted between 30 and 50% of the February through June unimpaired flow, it takes the unanimous approval of the entire STM Working Group to change the flow percent from the proposed 40% of unimpaired flow. On the other hand, it only takes a single member of the entire group to recommend that the required flow be allowed to be treated as "total volume to be released on an adaptive schedule", including delaying until after June the release of some of the required flow. The potential problems with this are numerous. To mention just two, the potential for bias by the SWB favoring a "preferred" stakeholder in the STM Working Group (e.g. CDFW) is enormous. Secondly, since such an arrangement becomes "foreseeable" in future operations by being allowed under the WQCP, this essentially opens up an unlimited number of alternative flow regimes. An Environmental Impact Statement cannot reasonably assess the potential

environmental impacts of an infinite number of flow regimes. Therefore, revised flow regimes may have to undergo a detailed environmental review, a process that could take several months, at a minimum.

Furthermore, the inclusion of item (c) on page 31 essentially guarantees that the resource agency- and conservation group-members of the STM Working Group would never agree to a flow of less than 40% of the unimpaired flow.

PG 32: ***"Specifically, the State Water Board will seek recommendations from the STM Working Group on biological goals. "***

"Biological goals will be used to inform the adaptive methods, evaluate the effectiveness of this program of implementation, the SJRMEP, and future changes to the Bay-Delta Plan."

"Biological goals for salmonids will specifically be developed for:
- ***abundance;***
- ***productivity as measured by population growth rate;***
- ***genetic and life history diversity; and***
- ***population spatial extent, distribution, and structure."***

It is apparent that the biological goals to be attained by the implementation of the amended WQCP are to come after the adoption of the new flow regime. This turns fisheries science on its head, and completely ignores the recommendations of the scientific literature on setting flow regimes. Establishing a new flow regime for the three eastside tributaries, the lower SJR, and the Delta, then later defining the biological goals has the process backward. Virtually all recent scientific literature on fish restoration and improvement recommends strongly that the biological and program goals be well-defined ***before*** the required actions are chosen. Furthermore, the scientific literature recommends that the biological goals and the baseline for comparison both be ***quantitatively*** established at the outset. The amended WQCP has not followed these generally accepted approach. (See Bennett et al. 2016; Fischman and Ruhl 2015; Zimmerman et al. 2012; Bilby et al. 2005; McDonald et al. 2007; Roni et al. 2008).[5]

Subjectively establishing substantially new flow regimes for the three eastside tributaries before coming to agreement on or carefully defining what is to be accomplished by these new flow regimes is ill-advised and has little chance of success.

PG 33: ***"The STM Working Group or members or subsets of the STM Working Group, as appropriate, will be required to submit proposed annual plans for adaptive implementation actions (annual operations plans) for the coming season by January 10 of each year for approval by the State Water Board or Executive Director. The State Water Board recognizes that an annual operations plan is based on a forecast from the best available information and may not accurately reflect actual conditions that occur during the February through June period. Accordingly, the***

[5] References to all of these citations are provided in the Districts March 2017 comments to the SWB's Draft SED and are not repeated herein.

State Water Board will consider this factor and whether the hydrologic condition could have been planned for in evaluating deviations from approved operations plans."

This statement is but one example of the SWB's poorly devised adaptive management plan. An "annual adaptive operations plan" for the coming February 1 through June 30 period is to be submitted to the SWB by January 10 of the year. There is little likelihood that anyone would know at this time what the unimpaired flows will be in February, let alone March through June. The SWB states that this shortcoming is "recognized" and that the actual hydrologic conditions will vary, but that the SWB will give due consideration to this fact when it subsequently evaluates "deviations from approved operations plans". The potential for problems with this concept is readily apparent, not the least of which is that any change in minimum flows must also be approved by FERC for those projects under FERC jurisdiction. A change in minimum flows may also require that FERC prepare an environmental assessment.

PG 35: ***"In order to determine compliance with the LSJR flow objectives, inform adaptive implementation, investigate the technical factors involved in water quality control, and potential needed future changes to the LSJR flow objectives, including flows for other times of the year, a comprehensive monitoring, special studies, evaluation, and reporting program is necessary."***

"The following requirements, at a minimum, shall be imposed:
1) Monitoring, special studies, and evaluations of the effects of flow and other factors on the viability of native LSJR watershed fish populations throughout the year, including assessment of abundance, spatial extent (or distribution), diversity (both genetic and life history), and productivity…"

It appears that the SWB is acknowledging by this statement that it may be necessary in the future to expand the "LSJR flow objectives" to include flows for "other times of the year". The SWB states that to assess the need for flows in other times of the year, "a comprehensive monitoring, special studies, evaluation, and reporting program is necessary." This leads one to ask – why is such a comprehensive program of data collection and analysis not required for the amended WQCP? Why do the very extensive changes to tributary flows called for in the currently proposed WQCP only require a subjectively based plan? Why do all these studies come ***after*** the flows are set instead of in advance of establishing instream flows? The Districts want to point out that all of the information the SWB states as needed for decision-making is, and has been, available for the Tuolumne River. If such a program is "necessary" to support future decision making, why was the available data ignored in the current decision making process?

A second issue that arises from the statements on page 35 relates to the question of baseline. What are the current, quantitative baseline conditions to which future conditions under the new flow regime will be compared in order to measure the effects of the new flow requirements? If these baseline conditions are available, these should be clearly identified in the amended WQCP.

Monitoring studies publicly available on each of the three eastside tributaries have shown that hatchery fish now make up the overwhelming majority, and in some years virtually 100%, of the adult fall-run Chinook escapement. The adverse effects of hatchery practices and hatchery fish on

native populations are widely reported in the scientific literature and discussed in some detail in the revised draft SED. Hatchery effects on native populations are unrelated to flows. No amount of additional flows will change the "viability of native LSJR" fall-run Chinook salmon, the "target species" in the revised draft SED, if hatchery fish continue to dominate future escapements.

PG-62: ***"San Joaquin River Non-Flow Actions."***

In this section the amended WQCP puts forward series of "recommended" non-flow measures which, according to the SWB, are "complementary" to the LSJR flow objectives. The SWB states that these various measures should improve habitat conditions and benefit fish and wildlife habitat. As part of the comments on Appendix K, the Districts are filing the Tuolumne River Management Plan (TRMP), a plan developed using the extensive data and scientific analyses carried out under the Don Pedro and La Grange licensing processes. The TRMP is based on the best available science for the Tuolumne River and incorporates flow and non-flow measures, many of which are cited by the SWB in this section of the amended WQCP. As part of the licensing processes, the Districts developed in consultation with resource agencies and conservation groups a detailed Project Operations Model, a fully 3-D reservoir temperature model, a river temperature model, floodplain model, fall-run Chinook in-river population model, and *O. mykiss* population model.

The development process for each of these models was approved by FERC as part of exercising its independent responsibilities related to evaluating the environmental effects of its actions using the best available scientific information. Using the various models, the Districts were able to directly compare the in-river population level effects of both the Districts' TRMP and the SWB's Plan contained in the amended WQCP consisting of the requirement to release 40% of the unimpaired flow from February 1 through June 30. Results of the model assessments demonstrate that the fall-run Chinook salmon and *O. mykiss* juvenile production on the Tuolumne River are far greater under the Districts' TRMP than the SWB's proposed flow regime, while requiring much less water.

SWB was fully aware of and at times actively participated in the licensing processes on the Tuolumne River. The studies and models are, and have been, available to the SWB. Without explanation, the SWB has declined to use the detailed scientific data and analyses conducted for the Tuolumne River.

PG-66: **"San Joaquin River Restoration Program"**

Finally at the very end of the amended WQCP, the SWB acknowledges the existence and role of the upper San Joaquin River basin and its effects on inflows to the Delta. Appendix K states that the "historic (sic) operation of the Friant Dam resulted in significant portions of the main stem of the San Joaquin River between Friant Dam and the confluence of the Merced River being dry." While the SWB has been fully aware of this significant impact to flows in the San Joaquin River, and thereby also the Bay-Delta, the revised draft SED neglects to evaluate the extent to which the reduced flows (frequently zero flow) from the upper SJR may have contributed to adverse effects to fish and wildlife in the lower SJR and Delta. The historical impacts to the LSJR and Delta due to the lack of flow coming from the upper SJR are now to be "mitigated" by requiring the three eastside tributaries to the lower SJR to release even more flow than they currently do, while the upper SJR is not

required to release any specified portion of unimpaired flow, let alone 40%. Forcing the three eastside tributaries to mitigate for the flow impacts of the upper SJR water users, while allowing these same water users to continue their current practices, displays an extreme bias harmful to the water users of the three eastside tributaries.

The revised draft SED goes on to explain that the settlement reached with the water users in the upper SJR only requires that fish must be restored and maintained in "good condition" in the reach from below Friant Dam to the confluence of the Merced River. In other words, the water users in the upper SJR have no responsibility related to fish and wildlife in the lower SJR and the Delta; that is, there is no requirement that these water users must mitigate for their significant and long-standing impacts to flows in the LSJR and Delta. This is the reason the SWB must seek to obtain disproportionately large flow releases from the three eastside tributaries – the other water users got a free pass

Furthermore, in the very next paragraph the revised draft SED states:

"The DFW, USBR, NMFS, and USFWS in coordination with the IEP, STM Working Group, and other interested parties should evaluate San Joaquin River Restoration Program flow contributions to flow and water quality requirements at Vernalis. The State Water Board may consider water quality objectives for the stream system above the San Joaquin River's confluence with the Merced River in future updates to this Plan."

The settlement agreement affecting "flow contributions" from the upper SJR was finalized in 2006, well before the draft SED. It is the SWB that should have evaluated flow contributions, or lack thereof, from the upper SJR and determined the extent to which such lack of flow has contributed to the problems being experienced in the LSJR and Delta, and then assigned the appropriate portion of responsibility to those water users.

Sincerely,

Casey Hashimoto, P.E.
General Manager
Turlock Irrigation District

Ronda Lucas
General Counsel
Modesto Irrigation District

Enclosure: Attachment A consisting of files relating to Don Pedro Project relicensing and La Grange Project licensing
Attachment B June 27, 2018 letter from EPA to Casey Hashimoto and John Davids

cc:

Attachment A

01_20171011	DP_AFLA_Public
02_20171011	LG_FLA_Public
03_20171127	DP_ResponseToAIR
04_20171127	LG_ResponseToAIR
05_20171213	DP_Supplemental_Information_AFLA
06_20171213	LG_Supplemental_Information_FLA
07_20180131	DP_WaterQualityCertificationApplication
08_20180131	LG_WaterQualityCertificationApplication
09_20180315	ReplyToComments
10_20180514	ResponseToAIR
11_20180619	Errata20180315_ErrataSupplementalInfo20180514
12_20180621	DP_Supplemental_Information
13_20180621	LG_Supplemental_Information_AttD_AppxH_AttC_20180315
14_20180711	ResponseToAIR

From: Sahota, Jaspreet@Waterboards <Jaspreet.Sahota@Waterboards.ca.gov>
Sent: Friday, July 27, 2018 4:09 PM
To: LSJR-SD-Comments; WQCP1Comments
Subject: print letter received 07-27-18
Attachments: Casey_Hashimoto.pdf

Categories: Purple Category, Red Category

Jaspreet Sahota, Office Technician
Division of Water Rights
State Water Resources Control Board
1001 I Street • Sacramento, California 95814
(916) 319-0613