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SENT VIA EMAIL

March 29, 2013

Jeanine Townsend, Clerk of the Board
State Water Resources Control Board
1001 "I" Street, 24th Floor
Sacramento, California 95814
commentletters@waterboards.ca.gov

Re: **Comment Letter – Bay Delta Plan SED**

Dear Ms. Townsend,

The following is the Executive Summary submitted on behalf of the San Joaquin Tributaries Authority.

EXECUTIVE SUMMARY

The San Joaquin Tributaries Authority ("SJTA") provides the State Water Resources Control Board ("State Water Board") the attached comments on the Draft Substitute Environmental Document ("SED") in support of potential changes to the Water Quality Control Plan for the San Francisco Bay-Sacramento/San Joaquin Delta Estuary: San Joaquin River Flows and Southern Delta Water Quality ("Bay Delta Plan"). For organizational clarity, the SJTA has organized its comments into two different documents, both are attached hereto. The SJTA Substantive Comments focus on legal defects and deficiencies in environmental analysis. The SJTA Technical Comments focus on errors and informational deficiencies.

As more fully set forth in the SJTA's comments, the SED contains significant deficiencies. The most significant deficiencies are summarized below.

- Arbitrary Plan Area: The geographic scope or plan area of the proposed project is arbitrary. The State Water Board drew a line around the rim reservoirs on the tributaries to the San Joaquin Rivers without any support or explanation. The plan area shares no geography, other than the Vernalis compliance point, with previous Bay Delta plans. The arbitrary designation of the plan area causes significant problems, including violation of due process rights, violation of water priority rules, exclusion of portions of the watershed, piecemealing, deficient environmental analysis and federal preemption issues.

- No Balance of Beneficial Uses: The State Water Board did not balance competing beneficial uses as required by Water Code section 13241. Most strikingly, the SED provides no evaluation of how the proposed project will protect fish and wildlife. Because the SED does not estimate the level of protection the proposed project will provide to fish and wildlife, the balance between this beneficial use and the adverse impacts to water supply deliveries cannot be performed.

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- Faulty Compliance Assumptions: The SED assumes the irrigation districts will comply with the proposed project by reducing water delivery and maintaining reservoir levels at pre-project levels. In addition, the SED assumes surface water reductions will not be supplemented with groundwater pumping. These assumptions are not supported and cause the SED to incorrectly conclude there are no impacts to hydropower generation, coldwater pools, recreation, flood risk, and groundwater.

- No Dry-Year Analysis: The SED does not analyze the environmental impact of the proposed project in dry and consecutive dry years. The only environmental analysis included in the SED is based upon the average year spanning 82 years of hydrology from 1922 to 2003. The proposed project will have widely varied impacts depending on the hydrologic year type.

- Flow Centric Analysis: The SED only considers protecting fish and wildlife with unimpaired flow. This is not a reasonable range of alternatives. Startlingly absent from the SED is an analysis of alternatives which would protect fish through non-native species predation suppression, creation of floodplain habitat, improvement to gravel spawning habitat, review of ocean harvest practices, or cold water releases.

- Inconsistent and Unsupported Baseline: The SED picks and chooses from existing conditions to create a baseline that falsely minimizes project impacts. The baseline includes VAMP flows which do not currently exist, but does not include existing instream flow requirements on the Stanislaus River. The inclusion of VAMP flows minimizes water supply impacts and the exclusion of Stanislaus River instream flows skew the analysis to reflect false impacts to aquatic resources.

Conclusion:

In addition to the issues above, the process by which the State Water Board has developed the SED is unlawful. At the informational hearing, State Water Board staff recognized that many of the components of the SED are placeholders, internally contradictory, or are intended to be finalized at a later date. This means the SED was released prematurely; the information gathering, development analysis, and finishing of the document should have been resolved during the scoping process before the SED was released.

The State Water Board is required to issue a draft environmental document that is sufficiently developed to provide the public with an adequate amount of accurate information so they are able to understand the proposed project and provide meaningful commentary on a version of the project that will not undergo major changes. The State Water Board must revise the existing document to fully develop information, ensure proper and consistent environmental analysis, and replace placeholders with content. After the State Water Board has made these changes, it must recirculate the SED.

Very truly yours,

O'LAUGHLIN & PARIS LLP

VALERIE C. KINCAID

VCK/tlb
Attachments

STATE WATER RESOURCES CONTROL BOARD

Draft Substitute Environmental Document In Support of Potential Changes to the Water Quality Control Plan for the San Francisco Bay-Sacramento/San Joaquin Delta Estuary; San Joaquin River Flows and Southern Delta Water Quality	)))))))

SAN JOAQUIN TRIBUTARIES AUTHORITY

Substantive Comments on the Draft Substitute Environmental Document

Dated: March 29, 2013

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I. Introduction.

On December 31, 2013, the State Water Resources Control Board ("State Water Board") released its draft substitute environmental document ("SED") in support of the potential changes to the Water Quality Control Plan for the San Francisco Bay-Sacramento/San Joaquin Delta Estuary ("Bay Delta Plan"): San Joaquin River flows and southern Delta water quality. The purpose of the SED is to analyze the environmental impacts of the State Water Board's proposed revision to the Bay Delta Plan. Specifically, the State Water Board proposes to replace the existing San Joaquin River Flow Objective with a requirement to keep a certain percent of unimpaired flow in each tributary to the San Joaquin River ("proposed project"). Specifically, the SED analyzes the environmental impacts of requiring 20, 40, and 60 percent of unimpaired flow instream for beneficial uses. The State Water Board identified 35 percent of unimpaired flow as its preferred alternative ("LSJR Flow Objective") after reviewing and considering information developed pursuant to the SED. (SED, at 20-1.)

The SED is fundamentally flawed. The San Joaquin Tributaries Authority ("SJTA") provides the following Substantive Comments to describe the flaws of the SED. The SJTA incorporates by reference the SJTA Technical Comments filed simultaneously herewith. In addition, the SJTA incorporates by reference all previous comments and information the SJTA provided the State Water Board in Phase 1 and Phase 2. The following Substantive Comments are divided by deficiency category and describe (a) the legal defects and deficiencies which render the SED unlawful; (b) the State Water Board's misrepresentation of its authority to implement the proposed project; (c) the violations of the Porter-Cologne Act; and (d) the various deficiencies to the environmental analysis. Because of these deficiencies, the SJTA requests the State Water Board revise and recirculate the SED to include sufficient information, demonstrate an understanding of the region, robustly analyze the environmental impacts of all feasible alternatives, identify all potential impacts of the proposed project, and examine all potential mitigation measures for significant impacts.

II. Legal Defects Render the Proposed Revisions to the Water Quality Control Plan Unlawful.

Questions of law are subject to de novo review. (*Pollak v. State Personnel Bd.* (2001) 88 Cal.App.4th 1394; *State Water Board Cases* (2006) 136 Cal.App.4th, at 722.) The proper interpretation of a statute and its application to the undisputed facts is a question of law. (*Smith v. Rae-Venter Law Group* (2002) 29 Cal.App.4th 345, 357.)

A. The Proposed Project Is Unlawful Because it Amounts to an Adjudicatory Action.

The State Water Board is empowered to undertake both regulatory and adjudicatory functions in allocating water rights and protecting water quality. (Water Code, § 174.) The development of a water quality control plan is a regulatory function, in which the State Water Board acts in a legislative capacity. (*United States v. State Water Resources Control Board* (1986) 182 Cal.App.3d 82, 112 ("*Racanelli*").) A water quality control plan is comprised of three parts: (a) identification of beneficial uses, (b) water quality objectives, and (c) a plan of implementation. The State Water Board is required to periodically review the water quality control plan. (Water Code, §§ 13170, 13240; 33 U.S.C. § 1313(c)(1).) The State Water Board's review of the water quality objectives in the Bay Delta Plan is a legislative act.

Water quality objectives are not self-effectuating; instead, the State Water Board must act separately to implement the actions delineated in the program of implementation. Usually, the State Water Board implements the objectives by amending water rights. The State Water Board's amendment of water rights is an adjudicatory function. (*Temescal Water Co. v. Dept. of Public Works* (1995) 44 Cal.2d 90, 100-06.) Because property rights are at issue in an adjudicative proceeding, the State Water Board is required to comply with Government Code section 11425.10, which provides due process protections such as directed notice, an opportunity to be heard, the ability to present and rebut evidence, and the right to cross examine. (Water Code, § 648(b).) The same due process requirements are not required when the State Water Board acts in a legislative capacity.

The State Water Board's review of the San Joaquin River Flow Objective is framed so narrowly it amounts to an adjudication of the rights of the SJTA members. Because the State Water

Board is conducting this adjudication through the guise of a legislative action, the due process rights of the SJTA members have been violated.

The State Water Board is prohibited from performing adjudicatory functions during the quasi-legislative objective process. The third district appellate court made this prohibition clear when it struck down the State Water Board's 1978 Bay Delta Plan in *Racanelli*. In 1978, the State Water Board developed water quality objectives based on water available prior to the construction and operation of the State Water Project ("SWP") and Central Valley Project ("CVP") facilities. The proposed objectives were referred to as "without project" standards. The "without project" standards are very similar to the "unimpaired flow" standards. The "without project" standards were based on water available prior to construction and operation of the CVP and SWP. Similarly, the LSJR Flow Objective requires "unimpaired flow" which is based on water available prior to the construction and operation of the dams on the tributaries to the San Joaquin River. Similar to the "without project" standards, "unimpaired flow" objectives can only be implemented by specific parties that operate water delivery facilities.

The *Racanelli* court held the "without project" objectives violated the mandate that the State Water Board keep its legislative and adjudicative duties distinct and separate. (*Racanelli*, at 115.) The "without project" objectives were water quality objectives, developed during the quasi-legislative step of the review. However, because the objectives could only be implemented by CVP and SWP operators, the *Racanelli* court determined the adoption of the objectives amounted to a water right action, rather than a water quality action, i.e. the State Water Board was performing adjudicatory actions in the legislative phase. (*Id*., at 115-17.) *Racanelli* advised against this action, describing it as "seriously flawed." (*Id*., at 118.)

Applying this same analysis to the LSJR Flow Objective, the State Water Board is similarly performing adjudicatory actions under the guise of a legislative process. The State Water Board narrowed the geographic limits of the Bay Delta Plan to exclude water contribution from the San Joaquin River upstream of the confluence with the Merced River ("Upper SJR" or "Upper San Joaquin River"), upstream of the rim reservoirs on each of the Tributaries, and the west side of the

San Joaquin River watershed. The functional result of this narrowing is that the geographic scope of the basin plan is limited to service areas of Oakdale, South San Joaquin, Modesto, Turlock, and Merced Irrigation Districts (collectively "Irrigation Districts") and Stockton East Water District ("SEWD"). Such a narrow view is unlawful for at least two reasons.

First, the narrow approach violates the due process rights of the Irrigation Districts. By drawing the geographic scope so narrowly, no other parties and no other water rights, other than those held by the Irrigation Districts and SEWD are at stake. Because the Irrigation Districts and SEWD are the only parties that can be responsible for the release of unimpaired flows, the responsibility for meeting the objective has effectively already been allocated to them. The water rights held by the Irrigation Districts and SEWD are vested property rights that cannot be infringed upon or otherwise taken by governmental action without due process. (*Racanelli*, at 101; *Ivanhoe Irrigation Dist. v. All Parties* (1957) 47 Cal.2d 597, 623; *U.S. v. Gerlach Live Stock Co.* 339 U.S. 725, 752-54.) The allocation was made without the due process protections required by law. (Gov. Code, § 11425.10.)

Second, the narrow approach violates the Porter Cologne requirements to attain the highest reasonable water quality "considering all demands being made and to be made on those waters." (Water Code, § 13000; *Racanelli*, at 116.) When setting water quality objectives, the State Water Board is required to consider the availability of unappropriated water, all competing demands for water, the past, present and probable future beneficial uses of water, and water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area. (Water Code, §§ 174; 13000; 13241; *Racanelli*, at 118.) Similar to its actions in 1978, the State Water Board fails to consider the availability of water and ignores the contribution of upstream water users when setting water quality objectives. (*Racanelli*, at 118-119 [setting aside the water quality objectives because "no attention was given to water use by the upstream users."].) *Racanelli* condemned this approach, stating, "the [State Water] Board compromised its important water quality role by defining its scope too narrowly in terms of enforceable water rights. In fact,

however, the [State Water] board's water quality obligations are not so limited." (*Id.*, at 120.) Thus, the SED's failure to consider upstream water availability is unlawful.

B. The Proposed Project is Unlawful Because it Violates FERC's Exclusive Jurisdiction.

The propose project is unlawful because the State Water Board does not have jurisdiction to set minimum stream flows on the Stanislaus, Tuolumne, and Merced Rivers below Federal Energy Regulatory Commission ("FERC") licensed facilities. The United States Supreme Court, the Ninth Circuit, and a California Appellate Court have all held that under the Federal Power Act, FERC "occupies the field" of hydropower operations. (*California v. FERC* (1990) 495 U.S. 490 ("*California v. FERC*"); *Sayles Hydro Associates v. Maughan* (1993) 985 F.2d 451 ("*Sayles*"); See *Karuk Tribe of Northern California v. California Regional Water Quality Control Bd., North Coast Region* (2010) 183 Cal.App.4th 330 ("*Karuk")*.) Under these holdings, state regulation of hydropower operations is preempted, except in circumstances concerning proprietary rights to water. (*Sayles,* at 456; *Karuk, at* 350.) The Supreme Court has held that regulations for the protection of fish and wildlife resources do not concern proprietary rights, and are thus preempted if applied to flows below a FERC licensed facility. (*California v. FERC,* at 498.) *California v. FERC* specifically invalidated a State Water Board action that attempted to set minimum instream flows in excess of those set forth in a FERC license. (*California v. FERC,* at 506.)

The LSJR Flow Objective presents the same issue as was presented in *California v. FERC*; the proposed project attempts to set minimum stream flows on rivers over which FERC has exclusive jurisdiction. (SED, at 1-6 [stating the proposed project will set unimpaired flow requirements on the San Joaquin River Tributaries].) As in *California v. FERC*, the State Water Board simply does not have the jurisdiction to set such flows.

Admittedly, the State Water Board has jurisdiction to require a FERC licensee to comply with existing water quality objectives through the State Water Board's 401 certification authority. (*PUD No. 1 of Jefferson County v. Washington Dept. of Ecology* (1994) 511 U.S. 700, 712.) The State Water Board's 401 authority, however, does not waive FERC's exclusive jurisdiction and

allow the State Water Board to change flow requirements outside of the 401 process. The State Water Board is free to set minimum instream flow requirements on streams over which they have jurisdiction, such as the San Joaquin River, Old River, or Middle River. However, the State Water Board simply does not have the jurisdiction to set minimum instream flows on the Stanislaus, Tuolumne, and Merced Rivers. For this reason, the proposed project is unlawful and preempted by the Federal Power Act.

C. The Proposed Project is Unlawful Because it Proposes to Implement a New LSJR Flow Objective Without Proper Notice.

The SED states it is analyzing the environmental impacts of the "new LSJR flow objective." (SED, at 1-1.) The SED is correct; the LSJR Flow Objective is a new objective developed by the State Water Board. The LSJR Flow Objective is not an amendment of the existing San Joaquin River Flow Objective. There is no remnant of the existing San Joaquin River Flow Objective in the proposed LSJR Flow Objective: the name has changed from the San Joaquin River Flow Objective to the LSJR Flow Objective; the geographic scope has changed completely; the existing objective covers the Bay Delta, whereas the proposed LSJR Flow Objective covers the three San Joaquin River Tributaries; the compliance points are different, no longer just at Vernalis, three new compliance locations will be set on the Tributaries are included in the LSJR Flow Objective (Appendix K, at 1); there is no longer a pulse flow in April to May, instead the February through June period is controlled by unimpaired flow.

The State Water Board did not provide notice it was developing a new LSJR Flow Objective in either the original 2009 Notice of Preparation or the revised 2011 Notice of Preparation. Instead, the State Water Board noticed that it planned to review the existing San Joaquin River Flow Objective. The State Water Board is required to provide adequate public notice describing each proposed action to be taken. (23 CCR, §§ 647.2(b), 649.2; *See also* 23 CCR, § 649(b).) Because the proposed project includes a new LSJR Flow Objective and does not amend the existing San Joaquin River Flow Objective, and the State Water Board failed to provide adequate notice that it was establishing a new water quality objective, and the proposed project is unlawful.

D. The Proposed Project is Unlawful Because it Amounts to a Waste and Unreasonable Use of Water.

Article X, section 2 of the California Constitution prohibits the "waste or unreasonable method of use or unreasonable method of diversion of water." Water Code section 275 requires the State Water Board "take all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion in this state." (Water Code, § 275; 23 CCR, § 764.) Thus, water users are limited to "take only such amount as he reasonably needs for beneficial purposes." (*City of Barstow v. Mojave Water Agency* (2000) 23 Cal.4th 1224, 1241.) Just as the State Water Board is required to prevent the unreasonable use of water, it is, in turn, prohibited from requiring water be used unreasonably. (*State Water Board Cases*, at 762; *Baldwin v. County of Tehama* (1994) 31 Cal.App.4th 166, 183.)

The measure of what is a "reasonable use" is a question of fact, to be determined according to the circumstances of each particular case. (*Joslin v. Marin Municipal Water Dist.* (1967) 67 Cal.2d 132, 139; *Environmental Defense Fund, Inc. v. East Bay Mun. Utility Dist.* 26 Cal.3d 183, 194; *Jordan v. City of Santa Barbara* (1996) 46 Cal.App.4th 1245, 1268.) The circumstances that must be considered to evaluate whether a use is "reasonable," include: (a) the quantity of water needed for the beneficial use served (*City of Barstow v. Mojave Water Agency* (2000) 23 Cal.4th 1224, 1241); (b) a comparison of other potential uses (*Imperial Irrigation Dist. v. State Wat. Resources Control Bd.* (1990) 225 Cal.App.3d 548, 570-571); and (c) local environmental conditions (*Tulare Irr. Dist. v. Lindsay-Strathmore Irr. Dist.* (1935) 3 Cal.2d 489, 567), among others.

The circumstances of the present case are the following: (1) the SED's preferred alternative proposes to require thirty five percent of unimpaired flow; (2) the SED analysis concludes the preferred alternative will have a significant and unavoidable impact to agriculture, water supply, groundwater, recreation, service providers, and greenhouse gas emissions (SED, at 20-30 to 20-32); (3) the State Water Board fails to estimate, project, or otherwise analyze, the level of benefit the

proposed project will provide to viable fish populations; (4) no science or other information supports the assumption that flow conditions that mimic the natural hydrographic conditions will provide reasonable protection to viable native fish populations; (5) predation rates result in less than 10 percent of salmon smolts from the LSJR surviving through the Delta to the ocean; and (6) National Marine Fisheries Service ("NMFS") has authorized the commercial harvest of all but 122,000 salmon returns to the system.

In weighing the circumstances surrounding the LSJR Flow Objective, the proposed requirement of 35 percent unimpaired flow is an unreasonable use of water. First, the quantity of water the State Water Board proposes to protect fish and wildlife beneficial uses requires water to be used unreasonably. The SED does not establish the proposed project will protect fish and wildlife. The SED is wholly without analysis of the benefits the proposed project will provide. Without demonstrating that the proposed project will protect the beneficial use, the proposed project cannot be determined to be a reasonable and beneficial use of water.

Second, the comparison of beneficial uses reflects that the proposed project requires the unreasonable use of water. The SED estimates the proposed project will fallow 128,000 acres of agriculture in average years and about 220,000 in dry years. (SED, at 11-25). As noted above, the SED does not estimate the benefit to fish and wildlife. Thus, in comparing the demonstrated adverse impact to agriculture, water supply, groundwater, and service providers with the assumed benefit to fish and wildlife, the proposed project is not reasonable.

Third, the local environmental conditions do not support unimpaired flow as a reasonable use of water. The local environmental conditions reflect that predation significantly limits the survival of native anadromous fish, allowing less than five percent of Chinook salmon survive from the Tributaries to Chipps Island. The local environmental conditions do not reflect fish mortality is caused by dewatering, lack of velocity, lack of water quantity, impaired water quality or other flow-related conditions. In addition, the local environment indicates that native fish are influenced by local hatchery practices. Although there are no hatcheries on the Tuolumne and Stanislaus Rivers, almost half the fish in these rivers are non-natural or released from hatcheries.

Finally, ocean harvest has an impact on the local environment of anadromous fish. NMFS allows the commercial harvest of all but 122,000 Chinook salmon, which significantly reduces returning fish and limits population recovery. For these reasons, the local environmental conditions indicate that requiring increased flow without first addressing predation, hatchery and ocean harvest issues is an unreasonable use of water.

E. The Proposed Project is Unlawful Because it Violates the Rules of Water Right Priority.

The rules of water right priority require the State Water Board to curtail all junior use prior to reducing senior water rights. (*El Dorado Irr. Dist. v. State Water Resources Control Bd.* (2006) 142 Cal.App.4th 937, 963-964.) The SED proposes to violate the rules of water right priority. The SED assumes water right holders only within the plan area will be responsible for the LSJR Flow Objectives. The SED does not analyze the environmental impact from contributions from the Upper SJR, upstream of the rim reservoirs, and on the west side of the San Joaquin River. In fact, the SED states the proposed regulation should not affect water right holders upstream of the rim reservoirs, on the west side of the San Joaquin River, and in the upper San Joaquin River. (SED, at 5-55.) However, there are water right holders upstream of the rim reservoirs, on the west side of the San Joaquin River, and in the upper San Joaquin River that are junior to water right holders within the geographic scope of the proposed regulation. The SED assumes senior water right holders on the San Joaquin tributaries will provide water to meet the LSJR Flow Objective before or instead of junior water right holders outside the plan area. This assumption is unlawful because it violates the rules of water right priority. The SED must be revised to recognize the rules of water right priority and make clear the State Water Board will act in a manner compliant with the rules of water right priority.

F. The Proposed Project is Unlawful Because it Proposes to Change the Narrative Objective Without Proper Notice.

The SED includes a Narrative Objective. (Appendix K, at 1.) It is unclear whether the intent is to develop a new objective or revise the existing Narrative Objective, but it appears the State

Water Board intends to revise the existing 2006 Narrative Objective. The State Water Board did not provide notice it planned to review the existing Narrative Objective or develop a new Narrative Objective in either the original 2009 Notice of Preparation or the revised 2011 Notice of Preparation.

The State Water Board is required to provide adequate public notice describing each proposed action to be taken. (23 CCR, §§§ 647.2(b); 649.2; 649(b).) Because the proposed changes to the Narrative Objective were not properly noticed, they are unlawful. (*Id*.) Before any changes are made to the existing Narrative Objective, the State Water Board must notice the review, perform adequate scoping procedures and analyze the environmental impact of any proposed changes.

G. The Proposed Project is Unlawful Because the LSJR Flow Objective is Vague and Lacks Clarity.

Government Code section 11349 requires regulations be drafted with sufficient clarity that the meaning of regulations are easily understood by those persons directly affected by them. (Govt. Code, § 11349(c).) The definition of "clarity" is provided by the California Code of Regulations ("CCR"). Under the CCR, a regulation is presumed not to comply with the "clarity" requirement if:

> (1) the regulation can, on its face, be reasonably and logically interpreted to have more than one meaning; or
>
> (2) the language of the regulation conflicts with the agency's description of the effect of the regulation; or
>
> (3) the regulation uses terms which do not have meanings generally familiar to those 'directly affected' by the regulation, and those terms are defined neither in the regulation nor in the governing statute; or
>
> (4) the regulation uses language incorrectly. This includes, but is not limited to, incorrect spelling, grammar or punctuation; or
>
> (5) the regulation presents information in a format that is not readily understandable by persons 'directly affected;' or

(6) the regulation does not use citation styles which clearly identify published material cited in the regulation. (1 CCR, § 16(a)(1)-(6).)

(1 CCR, § 16(a)(1)-(6).) The Government Code defines a "regulation" as "every rule, regulation, order, or standard of general application or the amendment, supplement, or revision of any rule, regulation, order, or standard adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure." (Gov. Code, § 11342.600.) Because the LSJR Flow Objective is a standard adopted by the State Water Board to implement the Porter Cologne Act, the Objective qualifies as a regulation and must comply with the Government Code requirements on clarity.

In violation of 1 CCR section 16(a)(1) and (3), the LSJR Flow Objective is not clear and those 'directly affected' by the regulation could interpret it in different manners. The SED states that the LSJR Flow Objective would require "35 percent of unimpaired February-June flow requirements for the Stanislaus, Tuolumne, and Merced Rivers." (SED, at 20-1.) The SED further states that the proposed changes to the 2006 Bay Delta Plan are included in Appendix K. (SED, at 1-7.) Between Chapter 20 and Appendix K, the LSJR Flow Objective is not clear and cannot be interpreted by the regulated community.

First, the relationship between the LSJR Flow Objective and the Narrative Objective is unclear. The 2006 Bay Delta Plan includes both the San Joaquin River Flow Objective and the Narrative Objective as two separate objectives. It is unclear whether the LSJR Flow Objective and Narrative Objective are meant to remain separate, will be combined together, or create a new type of objective altogether. For example, the SED evaluates only the environmental impacts of the San Joaquin River Flow Objective, but does not evaluate the environmental impacts from the proposed changes to the Narrative Objective. In contrast, the program of implementation attempts to provide a plan to implement the Narrative Objective, however, Table 3 of Appendix K does not even mention the requirement to release unimpaired flow percentages. (Appendix K, at 1.)

Second, the compliance points for the LSJR Flow Objective are unclear. Table 3 in Appendix K lists four compliance points, three of which are "TBD." Failing to define the location of

the compliance points is not a trivial omission. Depending upon whether the compliance points are on the tributary rivers or the mainstem of the San Joaquin River drastically changes how the flows can be met and which water users may be responsible for such diversions. For example, if the compliance points are on the Tuolumne River rather than the San Joaquin River, only flow from the Tuolumne River is available to satisfy the objective. However, if the compliance point is on the San Joaquin River, flows from the Tuolumne River, the Merced River, the Upper San Joaquin River, and flows from the west side could contribute toward meeting the requirement. Therefore, the regulation cannot stand as proposed because it is unclear who is "directly affected" by the regulation.

Third, the 35 percent unimpaired flow requirement at Vernalis is unclear. It is not clear whether the requirement would require 35 percent of the unimpaired flow of the entire San Joaquin River because the geographic scope of the proposed project stops at the confluence of the Merced and San Joaquin Rivers and it does not appear the State Water Board plans to include flows from the upper San Joaquin River. In fact, the SED states the State Water Board does not plan to seek flow from the upper San Joaquin River to meet the Vernalis requirements. (SED, Appendix K, at 3.) However, as currently drafted, the requirement states 35 percent of the unimpaired flow of the entire San Joaquin River is required at Vernalis. If the Vernalis requirement mandates 35 percent of the unimpaired flow of the entire San Joaquin River, this would require the Tributaries to provide much more than 35 percent of their respective unimpaired flow to meet the Vernalis requirement to account for the unimpaired flow from the Upper San Joaquin River. For these reasons, the Vernalis flow requirement is not clear and the regulated community cannot reasonably interpret the regulation.

Fourth, it is unclear when and to what extent flood flows will reduce the unimpaired flow requirement. The program of implementation states:

> The 35 percent of unimpaired flow requirement would not apply when such flows would exceed levels that would cause or contribute to flooding or other related public safety concerns as determined through consultation with

> federal, state, and local agencies and other appropriate interests with expertise in flood management.

(Appendix K, at 3.)

The text states the unimpaired flow requirement would "not apply" when flows contribute to flooding. It is unclear whether the requirement would "not apply" to the localized area that was experiencing flood flows or if it would not apply to all three tributaries and the Vernalis checkpoint. It is unclear whether the requirement would "not apply" for a whole year or just until the flood risk subsided. It is unclear which public health and safety concerns would trigger the relaxation of the requirement. Therefore, the flood and public safety component of the regulation is not clear and the regulated community can reasonably interpret the regulation to have more than one meaning.

Finally, the adaptive management section of the program of implementation is unclear and contradictory. The SED does not require adaptive management, but describes two different options to allow adaptive management in the short and long-term. Neither option is described with sufficient clarity.

The short-term, or annual adaptive management, allows the 35 percent unimpaired flow requirement to be adaptively managed to allow any flow release, so long as the total flows are not less than 25 percent of unimpaired flow for the five month regulated period. The annual adaptive management goes on to describe the establishment of the Coordinated Operations Group ("COG"), which is the group that will develop an annual adaptive management plan. So long as the approved annual adaptive management plan is designed to achieve the unimpaired flow range, compliance with the plan will be deemed to be compliance with the required unimpaired flows. (Appendix K, at 5.)

There are several components of the annual adaptive management option which are unclear. First, it is not clear whether adaptive management is required. The SED states that the required instream flows "*may* be adaptively managed," which indicates the adaptive management is not mandatory. (*Id*., at 4.)

Second, it is unclear whether adaptive management is individual to each Tributary or whether the adaptive management is for all Tributaries combined. The SED states flows "on each tributary" may be changed, so "long as average flows over the entire five-month period are no less than 25 percent unimpaired." (Appendix K, at 4.) The regulated community could reasonably interpret this to have more than one meaning. For instance, it is unclear whether this base requirement would allow the Stanislaus River to provide 35 percent of unimpaired flow so the Merced or Tuolumne Rivers could provide 15 percent unimpaired flow or whether each tributary must contribute the equivalent of 25 percent of unimpaired flow regardless of the flows on the other tributaries.

Third, it is unclear who will be included in the COG. The SED states specific agencies, "water users" on the tributaries, and "any other representatives deemed appropriate by the Executive Director" will be included. (Appendix K, at 4.) Because the adaptive management plan proposed by the COG must have unanimous support prior to submitting it to the Executive Director, participation in this group is of elevated importance. (*Id.*, at 4-5.) It is unclear who will be allowed to participate, and therefore how effective the COG will be. As written, it appears the provision gives the Executive Director unlimited power to appoint whom he or she pleases.

Fourth, the process by which the COG develops adaptive management plans is unclear. The SED states that State Water Board staff will "work with the COG and interested persons to develop procedures for an adaptive management process." (*Id.*, at 4.) These procedures "shall allow the COG or its members" to propose annual adaptive management plans to the Executive Director. (*Id.*) To change the timing of flows for fishery purposes, any member of the COG may submit an adaptive management plan; however, to propose a change to the quantity of flows, the proposal must first be agreed to by all members of the COG before submitting to the Executive Director. (*Id.*, at 4-5.) Also, other non-COG members may provide information to inform the Executive Director's consideration of an adaptive management plan. (*Id.*, at 5.) This process is riddled with uncertainty. There are no timing requirements or deadlines for either submission or approval of an adaptive management plan. It is unclear whether the Executive Director could approve more than one plan. It

is unclear whether the Executive Director may change a plan submitted by the COG. It is unclear whether the Executive Director could approve a plan submitted by non-COG members. It is unclear whether any member of the COG is allowed to submit a plan that alters the timing of flows for water reliability purposes or whether the Executive Director could approve such a plan. All of this uncertainty undoubtedly amounts to a lack of the clarity required by Government Code section 11349.

Fifth, compliance with the adaptive management plan is unclear. The SED states that due to the uncertainty of forecasting, an adaptive management plan will be deemed compliant "with those flows if the flows in the adaptive management plan are not met." (*Id.*) It is unclear whether compliance with the adaptive management plan will be deemed compliance with the LSJR flow objective, regardless of the actual flow. It could mean that achieving certain flow requirements will simply result in compliance with the adaptive management plan. The language is unclear. Therefore, the regulated community cannot be certain as to the terms of compliance required by the objective.

The long-term adaptive management section is also unclear. The long-term adaptive management section states the LSJR Flow Objective may be changed in the future based on developing information. (Appendix K, at 5.) This is confusing because the State Water Board is already required to periodically review objectives. (Water Code, §§ 13170, 13240; 33 U.S.C. 1313(c)(1).) It is not clear whether the long-term adaptive management section is simply repeating this requirement or creating a different avenue to revise the water quality objectives. If the State Water Board is attempting to create a different avenue for reviewing objectives, it is not clear whether this avenue is consistent with the existing requirements to periodically review the plan.

The long-term management section is also unclear because it appears that it attempts to control or bookend future review of the LSJR Flow Objective. The long-term adaptive management indicates the LSJR Flow Objective may be adjusted so long as it provides a quantity of flow equal to that of between 25 and 45 percent of the unimpaired flow. (Appendix K, at 3.) This is unclear and potentially unlawful. If future information indicates that more or less flow outside of the 25-45 percent range is necessary to protect a beneficial use, the long-term adaptive management section

cannot limit the future revision of water quality objectives. The proposed project is unclear and therefore, unlawful.

H. The Proposed Project is Unlawful Because the Proposed Narrative Objective Is Vague and Lacks Clarity.

The State Water Board proposes the Narrative Objective to read as follows:

> Maintain flow conditions from the San Joaquin River Watershed to the Delta at Vernalis, together with other reasonably controllable measures in the San Joaquin River Watershed, sufficient to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta. Flow conditions that reasonably contribute toward maintaining viable native migratory San Joaquin River fish populations include, but may not be limited to, flows that mimic the natural hydrographic conditions to which native fish species are adapted, including the relative magnitude, duration, timing, and spatial extent of flows as they would naturally occur. Indicators of viability include abundance, spatial extent or distribution, genetic and life history diversity, migratory pathways, and productivity.

The Narrative Objective is unlawful because it lacks clarity. As set forth more fully above, Government Code section 11349 requires regulations to be drafted with sufficient clarity that the meaning of the regulation is easily understood by those persons 'directly affected' by them. (Gov. Code, § 11349(c).) In violation of 1 CCR section 16(a)(1) and (3), directly affected persons could interpret the Narrative Objective in several different manners and the Narrative Objective uses terms which do not have meanings generally familiar to those 'directly affected.' The phrase "support and maintain the natural production of viable native San Joaquin River watershed populations migrating through the Delta" is ambiguous, undefined, and could be logically interpreted in various ways.

First, the word "support" is unclear and could have various interpretations. Merriam-Webster defines "support" as "to provide a basis for the existence or subsistence of." (http://www.merriam-webster.com/dictionary/support.) Thus, the regulated community could interpret the Narrative Objective to require regulated entities provide a basis for the existence or subsistence of fish populations migrating through the Delta. However, this requirement still does not

explain what must be done by regulated entities to provide such a basis, or what degree of support must be provided.

Second, the term "viable" is unclear and could have various interpretations. Merriam-Webster defines "viable" as "capable of existence and development in an independent unit." (http://www.merriam-webster.com/dictionary/viable.) The Narrative Objective lists indicators to measure viability: "Indicators of viability include abundance, spatial extent or distribution, genetic and life history diversity, migratory pathways, and productivity." However, the Narrative Objective fails to provide any guidance as to measuring these indicators – in other words, the Narrative Objective does not state the extent to which each indicator will provide evidence of viability. Therefore, the interpretation of these indicators and the conclusion of whether a population is viable could widely vary by each person 'directly affected' by the regulation.

The phrase "other reasonably controllable measures" is ambiguous, undefined, and could be logically interpreted in various ways. First, the term "reasonably" is unclear and could have various interpretations. Merriam-Webster defines "reasonably" as "being in accordance with reason" or "not extreme or excessive." (http://www.merriam-webster.com/dictionary/viable.) As the definition indicates, the term "reasonably" is widely variable depending on personal interpretation; the Narrative Objective does not further define or limit the term.

Second, the term "controllable" is also undefined and subject to various interpretations. It is not clear whether the term is limited to the control of the regulated community or would apply to any action that can be influenced by any party.

The ambiguity in these terms and phrases is similar to terms previously proposed by the Department of Fish and Game ("DFG") that were determined to be unclear and in violation of 1 CCR section 16(a)(1) and (3). In 2010, DFG proposed to amend its regulations pertaining to "restricted species." Specifically, the proposed requirements stated: "The following information and documents shall accompany an application for each permit, amendment, renewal, or upon change or expiration and *if applicable to the permit type and/or species*." (Office of Administrative Law

("OAL") Decision No. 2010-0423-04, at 4.) The OAL explained this section failed to meet the "clarity" standard:

> "The 'rules' regarding the applicability of each of these particular 'application' requirements *need to be clearly and fully set forth in the regulation text and cannot be subject to determination outside of the scope of the regulations*. Expressed another way, *members of the 'directly affected public'* (such as potential permit applicants) *need to be able to read the regulation text and easily determine which of the 'application' requirements apply to them* for their particular type of permit or situation."

(*Id*. (emphasis added).)

Thus, a regulation must inform the "directly affected public" what they must do to comply with the regulation. Neither the Narrative Objective nor the following program of implementation provide such guidance. For this reason, the Narrative Objective amounts to an unlawful regulation.

In addition to being unlawful for lack of clarity, the Narrative Objective is also impermissibly vague. Due process protections proscribe the enforcement of vague regulations like the Narrative Objective. (*Cranston v. City of Richmond* (1985) 40 Cal.3d 755 ("*Cranston*").) Similar to the clarity standard discussed above, due process precludes enforcement of a regulation based upon impermissible vagueness when the regulated party "could not reasonably understand that [their] contemplated conduct is proscribed." (*Cranston*, at 764.) The ambiguous terms, such as "support," "controllable measures," and "viable native," make the Narrative Objective so vague the regulated community would not be able to understand whether their conduct is proscribed or authorized.

I. The Proposed Project is Unlawful Because the State Water Board Cannot Regulate Flow in the San Joaquin River Tributaries Through the Basin Plan Covering the San Francisco Bay Delta.

The State Water Board developed the Bay Delta Plan pursuant to its authorities under the Clean Water Act and the Porter Cologne Act. Under these two authorities, the purpose of a basin plan is to protect "water bodies and the beneficial uses of those water bodies." (*City of Arcadia* (2011) 191 Cal.App.4th 156, 178.) Further, Water Code section 13050 describes a water quality

control plan as applying to only those beneficial uses "for the waters within a specified area." (Water Code, § 13050(j).) Thus, water quality control plans are developed to protect specific waters within a defined geographic scope.

The Bay Delta Plan specifically regulates the waters within the San Francisco Bay and the Delta Estuary. (1978 Bay Delta Plan, at I-3 [stating the purpose of the plan was to "protect beneficial uses of Delta water supplies"]; 2006 Bay Delta Plan, at 1.) This includes the waters of the San Francisco Bay, the San Pablo Bay, the Suisun Bay, the water bodies of the interior Delta, the Sacramento River from the Delta up to the confluence of the American River, and the lower San Joaquin River from the Delta up to Vernalis. (2006 Bay Delta Plan, at Figure 1.) Since its original adoption in 1978, the State Water Board revised the Bay Delta Plan several times. Through these revisions, however, the geographic scope and the waters protected have remained the same, consistent with guidance provided by Water Code section 13050. (*See* 1978 Bay Delta Plan, at I-3; 1995 Bay Delta Plan, at Figure 1; 2006 Bay Delta Plan, at Figure 1.)

The proposed project seeks to regulate waters outside the geographic scope of the Bay Delta Plan, and further, proposes to completely change the geographic scope of the Bay Delta Plan. The proposed geographic changes are unlawful for several reasons. First, the State Water Board did not notice the changes to the geographic scope and regulated waters. The State Water Board first noticed its review of the San Joaquin River Flow Objective on February 13, 2009 ("2009 NOP"). The 2009 NOP noticed the State Water Board was beginning its review of the San Joaquin River Flow Objective. The 2009 NOP did not provide notice the State Water Board planned to review the geographic scope of the Bay Delta Plan or otherwise regulate waters outside the Bay Delta Plan. The State Water Board revised the 2009 NOP by issuing a revised Notice of Preparation in 2011 ("2011 NOP"). The 2011 NOP did not notice the State Water Board was reviewing or amending the geographic scope of the Bay Delta Plan, nor did it notice that it would be regulating waters not included in the Bay Delta Plan.

Second, the proposed changes to the geographic scope are significant and the LSJR Flow Objective no longer seeks to regulate the waters in the Bay Delta. The waters regulated in the Bay

Delta Plan do not include the San Joaquin River upstream of Vernalis, nor the Stanislaus, Tuolumne, or Merced Rivers. Now, the SED proposes to regulate the San Joaquin River from its confluence with the Merced River to Vernalis, and the Stanislaus, Tuolumne, and Merced Rivers. Thus, the geographic scope and regulated waters of the existing Bay Delta Plan are entirely different than the geographic scope and waters of the proposed project. Because the Bay Delta Plan only applies to specific waters, the regulation of waters beyond the geographic scope of the Bay Delta Plan cannot be performed through a review of the plan. (Water Code, § 13050.)

Third, the proposed LSJR Flow Objective is no longer tied to a Delta benefit. In the 1978, 1995, and 2006 plans, the water quality objectives were directly tied to the protection of beneficial uses in the Delta. (1978 Bay Delta Plan, at III-1 [protecting "beneficial uses in the Delta and Suisan Marsh"]; 1995 Bay Delta Plan, at [protecting the "multitude of beneficial uses" served by the "waters of the Bay Delta Estuary"]; 2006 Bay Delta Plan, at 5 [developing a plan to protect the waters of "the Delta, Suisun Bay, and Suisun Marsh"].) The SED no longer proposes to protect beneficial uses of the Bay or Delta; instead, the SED proposes to protect beneficial uses in:

> The LSJR (downstream of the Merced River confluence); the major San Joaquin River (SJR) tributaries (the Stanislaus, Tuolumne, and Merced Rivers), below the rim dams that regulate their flows (the New Melones, New Don Pedro, and New Exchequer Dams, respectively); the reservoirs created by these dams (New Melones Reservoir, New Don Pedro Reservoir, and Lake McClure, respectively; and the southern Delta. (SED, at 7-1.)

(SED, at 7-1.) The SED does not attempt to tie the benefits of the proposed project to a downstream Delta benefit. In fact, the SED recognizes that little, if any, of the proposed releases will benefit the Delta and Bay at all. (SED, at 7-44.) This is a complete departure from the previous Bay Delta plans; the LSJR Flow Objective does not attempt to protect beneficial uses in the Delta and therefore is not truly an amendment to the San Joaquin River Flow Objective.

Fourth, the proposed LSJR Flow Objective is in reality a localized basin plan that is the responsibility of the Central Valley Regional Water Quality Control Board. The Regional Water Quality Control Boards are responsible for developing water quality requirements for the water

basins within their respective jurisdictions. (Water Code, § 13240 ["Each regional board shall formulate and adopt water quality control plans for all areas within the region"].) The State Water Board may develop statewide water quality regulations or water quality control plans spanning more than one basin. (*County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985, 1000; Water Code, § 13140.) The Bay Delta Plan is a water quality control plan spanning more than one basin. However, unlike the Bay Delta Plan, the LSJR Flow Objective does not span more than one basin. In fact, the proposed regulation is localized in the three tributaries to the San Joaquin River. (SED, at 1-3.) For this reason, water quality regulation of the tributaries is the duty of the Regional Board, rather than the State Water Board. (Water Code, § 13240.) It is therefore unlawful for the State Water Board to attempt to reach outside the scope of the Bay Delta Plan and regulate tributary flows outside the Bay Delta area.

J. The Proposed Project is Unlawful Because the Narrow Geographic Scope is Unsupported.

As described above, the SED plan area for the LSJR Flow Objective is very narrow. Specifically, the limited geographic scope excludes the contribution of water upstream of the rim reservoirs on the San Joaquin tributaries, the west side of the San Joaquin River, and on the upper San Joaquin River. The explanation the SED provides for excluding each of these areas and their corresponding water contribution is deficient and unsupported. For this reason, the SED's designation of the plan area is arbitrary.

(1) Contribution from Upstream of Rim Reservoirs.

The SED concludes it does not need to consider the contribution from reservoir operation and water supply upstream of the rim reservoirs on each of the San Joaquin River tributaries. (SED, at 5-55.) The reasons for this lack of consideration are unsupported and contradictory. The SED states that it will not consider contribution from, or impacts to, the reservoir operations and water use upstream of New Melones on the Stanislaus. The SED explains that "operations of these upstream storage facilities can continue without regard to the downstream flow objectives." (SED, at 5-56.) The SED fails to identify the diversions and reservoir operations upstream of New Melones. The

SED, furthermore, fails to explain why it has come to the conclusion that these operations and diversions are of no import; it does not evaluate their respective water right priority, nor does it describe the amount of water diverted. Without further information, the conclusion that upstream contributions will not be considered is unsupported by reasoning or analysis.

(2) Contribution From the Upper San Joaquin River.

The SED states the purpose of the proposed project is to create flows that "mimic the natural hydrograph with respect to the relative magnitude, duration, timing, and spatial extent of flows." (SED, at 1-6.) The SED recognizes the Upper San Joaquin River historically contributed approximately 1,732 thousand acre-feet of unimpaired flow to the San Joaquin River system. (SED, at 5-15.) This means the Upper San Joaquin River comprised approximately one-third of the historic natural hydrograph of the San Joaquin River system. It is not possible to mimic the magnitude, duration, timing and spatial extent of the historic hydrograph if one-third of the contribution to the magnitude, duration and timing of historic flows is excluded. For this reason, the exclusion of the Upper San Joaquin River is contrary to the purpose of the proposed project. The SED is unlawful because it fails to establish the proposed project can be achieved without the contribution of Upper San Joaquin River flows.

In addition, the SED does not support the conclusion to exclude the Upper San Joaquin River. The SED states the State Water Board will review the sufficiency of Upper San Joaquin River flows in 2014. (Appendix K, at 8.) The SED does not provide a reason the State Water Board has decided to wait and review Upper San Joaquin River flows at a later date. Therefore, the SED does not explain how separating the Upper San Joaquin River will affect the analysis of unimpaired flow or protection of fish and wildlife. Nor does the SED provide sufficient explanation for excluding the Upper San Joaquin River from the plan area.

(3) West Side Contribution.

Unlike the upstream contribution described above, the SED does not even disclose that the San Joaquin River receives return flows from land to the west of the San Joaquin River. The SED baseline fails to identify the quantity and quality of water contribution from the west side. Without

this disclosure, the SED cannot evaluate the impacts from the west side contribution to comply with the proposed project. The failure to include this analysis renders the SED deficient and unlawful.

K. The Proposed Project is Unlawful Because Flow is Not a Water Quality Constituent That Can Be Regulated Through a Water Quality Control Plan.

The Porter Cologne Water Quality Control Act establishes a comprehensive program for water quality control. Water quality control plans are developed pursuant to Porter Cologne authority and consist of three parts: (a) designation of beneficial uses, (b) water quality objectives, and (c) a program of implementation. (Water Code, § 13050(j).) The purpose of water quality objectives is to set the level of water quality constituents or characteristics for the reasonable protection of beneficial uses of water. (*Id*., at (h).) Water quality means chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affect its use. (*Id*., at (g).)

Quantity of water is a descriptive term that reflects the amount of water, but it is not a characteristic of the water itself. Thus, flow is not water quality constituent or characteristic. The recent storm water case out of the United States District Court for the Eastern District of Virginia clarifies the distinction between water quality and water flows. (*Virginia Department of Transportation v. United State Environmental Protection Agency* (2013) 2013 U.S. Dist. LEXIS 981 ("*VDot*").) In the *VDot* matter, the Department of Transportation challenged the EPA's regulation of storm water runoff through the Clean Water Act. Specifically, the Department of Transportation claimed that storm water is not a pollutant that can be regulated by the EPA. The Eastern District Court agreed and prohibited the regulation of storm water as a "surrogate" for water quality, rather than regulating pollutants directly. (*VDot*, at 9.) The Court understood the EPA's storm water regulation was attempting to control water quality with flow, but the Court made clear that the EPA was required to regulate pollutants directly and had no authority to regulate the flow of water in an effort to control water quality. (*Id*.)

Thus, applying the holding in *Vdot* to the present matter, the State Water Board cannot regulate flow pursuant to the Clean Water Act because flow is not a water quality constituent.

Because flow is not a water quality constituent, it cannot be regulated through a water quality control plan. For these reasons, the LSJR Flow Objective is unlawful and must be set aside.

L. The Proposed Project is Unlawful Because it Violates the Health and Safety Code.

The Health and Safety Code section 57005 requires:

> [E]ach board, department, and office within the agency, before adopting any major regulation, shall evaluate the alternatives to the requirements of the proposed regulation that are submitted to the board, department, or office pursuant to paragraph (7) of subdivision (a) of Section 11346.5 of the Government Code and consider whether there is a less costly alternative or combination of alternatives which would be equally as effective in achieving increments of environmental protection in a manner that ensures full compliance with statutory mandates within the same amount of time as the proposed regulatory requirements.

(Health & Saf. Code, § 57005 ("section 57005").)

For purposes of this section, "major regulation" means any regulation that will have an economic impact on the state's business enterprises in an amount exceeding ten million dollars, as estimated by the board, department, or office within the agency proposing to adopt the regulation. (*Id*., at subd.(b).) Section 57005 applies to the proposed project because the State Water Board estimates it will result in impacts well in excess of ten million dollars. For this reason, section 57005 requires the State Water Board to consider less costly alternatives, or a combination of alternatives which would provide equivalent environmental protection.

The State Water Board has, thus far, failed to comply with the requirements of section 57005. The SED considers only one type of project: regulation of unimpaired flow. (SED, at 3-3.) The State Water Board's extremely narrow approach does not consider less costly alternatives which would be equally as effective in achieving environmental protection. The State Water Board's failure to consider these alternatives violates section 57005.

The State Water Board must undertake the requisite section 57005 analysis. In order to do so, the State Water Board must first remedy a major flaw in the SED – the lacking demonstration of environmental protection. Nowhere in the SED does the State Water Board estimate the protection

the proposed project will provide fish and wildlife beneficial uses. Nor does the SED provide a detailed qualitative assessment of the benefits the proposed project will bestow on fish and wildlife beneficial uses. Without any such quantification or detailed qualitative assessment of protection, the State Water Board cannot compare the environmental benefits offered by other alternatives.

Once the State Water Board has identified the environmental benefit of the proposed project, it must then evaluate flow and non-flow measures that may be less costly and whether these measures provide the same environmental protection as the proposed project. As discussed in more detail in other sections of these comments, there are other feasible alternatives, such as predation programs and alternate pulse flow regimes, which would provide the same, or a better, level of environmental protection to fish and wildlife resources without causing the significant and unavoidable impacts to agriculture, groundwater, service providers and the regional economy.

Because the State Water Board has failed to identify the environmental benefits of the proposed project and evaluate whether less costly but similarly effective projects are available, it has violated section 57005 and not proceeded in the manner required by law.

M. The Proposed Project is Unlawful Because the State Water Board Failed to Fully Implement the 2006 Water Quality Control Plan.

After adopting water quality objectives, the State Water Board is required to fully implement those objectives; failure to fully implement the objectives amounts to a de facto amendment without complying with the procedural requirements for amending a water quality control plan. (*State Water Board Cases*, at 734.) The State Water Board failed to fully implement the 2006 water quality objectives. In so acting, the State Water Board failed to proceed in the manner required by law. (*Id*.)

The 2006 Water Quality Control Plan includes several non-flow measures in its plan of implementation. These measures include: installation of screening facilities on diversions, modification of existing commercial and sport fishing regulations, expansion of the illegal harvest program, improvement of hatchery programs, and expansion of gravel replacement and maintenance. (2006 Bay Delta Plan, at 34-37.) The State Water Board did not include these measures as superfluous to the protection of beneficial uses; instead, the State Water Board

characterized the non-flow measures as "needed to achieve the protection of beneficial uses." (2006 Bay Delta Plan, at 22.) Despite the necessity, these actions were never implemented.

The proposed project seeks to significantly increase flows from the San Joaquin River. Because the State Water Board failed to previously implement the required non-flow measures in its earlier plans, the State Water Board is precluded from revising the flow measures to require increased flow from the San Joaquin River. The State Water Board mandated flow and non-flow measures be taken to protect beneficial uses. The flow measures were implemented; the non-flow measures were not.

The State Water Board cannot continue to ask for increased flow and allow the non-flow measures to continue to be ignored. Before the State Water Board can change the LSJR Flow Objective, it must first implement the existing non-flow actions. (*State Water Board Cases*, at 734.) Only after those actions are implemented, may the State Water Board review the existing flow objectives to determine if more flow is needed protect fish and wildlife.

N. The Proposed Project Unlawfully Delegates State Water Board Authority.

The proposed project delegates several duties to the Executive Director in excess of State Water Board authority. Resolution Number 2012-0061 authorizes the State Water Board to delegate specific authorities to the Executive Director. Resolution Number 2012-0061 delegates the authority to: notice Board meetings and hearings, manage State Water Board staff, meet with other agency officials, implement the State Water Board's policies and regulations, meet with Regional Water Quality Control Board Executive Officers, and approve Clean Water Act section 205 final products. (Resolution No. 2012-0061, at 1.) However, the resolution does not authorize the Executive Director to set policy or change regulations; those authorities are reserved for the State Water Board. (*Id.*)

The proposed project delegates duties to the Executive Director in violation of Resolution 2012-0061. For example, the proposed project mandates the Implementation Plan shall be submitted to the Executive Director for approval. However, the Executive Director is specifically prohibited from "adopting or approving water quality control plans or plan amendments." (Resolution No.

2012-0061, at 3.3.) The program of implementation is a component of a water quality control plan. Therefore, Resolution No. 2012-0061 prohibits the delegation of authority which would allow the Executive Director to approve a component of the program of implementation.

Another example of unlawful delegation is the proposed project's delegation of authority to approve annual adaptive management flows. The program of implementation allows the COG to propose different levels of flow requirements to the Executive Director for approval. (Appendix K, at 4.) However, the Executive Director is expressly prohibited from "adopting state policy for water quality" or "adopting or approving water quality control plans." (Resolution No. 2012-0061, at 3.3, 3.4.) Because approving a change to the LSJR Flow Objective would amount to setting water quality regulations, the Resolution prohibits the Executive Director from taking this action.

III. The State Water Board Overstates Its Authority to Implement Water Quality Objectives.

The SED proposes to implement the changes to the water quality objectives through water right actions, FERC hydropower licensing processes, other water quality actions, or actions by other entities. The analysis in the SED suggests that implementation will require changes to water supply contracts, or reservoir operation. The State Water Board's jurisdiction and authority over each of these mechanisms is limited. The SED fails to identify or analyze these limitations. For this reason, the SED overstates its authority.

A. The State Water Board Overstates its Authority Over Existing Water Rights.

The SED states that the State Water Board has the authority to amend an existing water right by invoking: (1) its reserved jurisdiction over certain permits under Water Code section 1394; (2) its continuing authority to prevent the waste, unreasonable use, or unreasonable method of use of water under the California Constitution, Article X, section 2; or (3) its continuing authority to protect public trust uses of water. (SED, at 1-3 to 1-4.) Although broadly speaking, these are tools the State Water Board may use at certain times to amend water rights, it is an overstatement of authority to assume these mechanisms will enable the State Water Board to implement the LSJR Flow Objective.

(1) Water Code Section 1394.

Under section 1394 of the Water Code, the State Water Board has the authority to reserve jurisdiction to amend water right permits. This authority to reserve jurisdiction only applies to permits; it does not extend to water rights secured by license. (Water Code, § 1394(b) ["in no case shall jurisdiction be exercised after the issuance of the license."].) Because the majority of water diverted in the geographic scope of the proposed project is diverted pursuant to licensed or pre-1914 water rights, the State Water Board's authority under section 1394 will be of extremely limited use in implementing the LSJR Flow Objective.

(2) Unreasonable Use.

The State Water Board is allowed to curtail water use that is wasteful or unreasonable. (Cal. Const., art. X, § 2; Water Code, § 275; *California Farm Bureau Federation v. State Water Resources Control Board* (2011) 51 Cal.4th 421, 429.) However, the State Water Board's authority under the reasonable use doctrine is limited and the State Water Board should not assume this authority will allow it to implement water quality objectives. For example, the determination of whether a use is reasonable is a question of fact and must be determined according to the circumstances of each particular case. (*Joslin v. Marin Mun. Water Dist.* (1967) 67 Cal.2d 132, 139.) Therefore, before curtailing water use pursuant to a finding of unreasonable use, the State Water Board will need to make a factual determination based on the specifics of each use it seeks to curtail. The State Water Board cannot make a broad determination that a type of use is unreasonable without a case-specific analysis. (*Imperial Irrigation Dist. v. State Water Resources Control Bd.* (1990) 225 Cal.App.3d 548, 554 ("*Imperial*"); *Light v. State Water Resources Control Board* (2012) Super. Ct. Mendocino County, No. SCUK CVG 11 59127, at 27.) The SED has not made any finding of unreasonable use and it recognizes that the idea that irrigation districts are using water unreasonably is "speculative." (SED, at 11-27.)

In addition, the State Water Board should be careful not to equate the power to curtail a specific use of water with the authority to require the reallocation of water to a different beneficial use; the two powers are different and distinct. For example, the State Water Board may determine a

specific water use is unreasonable. This determination would prohibit the water user from using water in the manner determined unreasonable. (*Imperial*, at 554-55.) The determination would not, however, prohibit the water user from using the water in a different manner that is reasonable and beneficial. In other words, a State Water Board determination that a use is unreasonable only curtails that particular use; it does not extinguish the underlying right and does not provide the State Water Board the authority to otherwise control the water which is has curtailed. The unreasonable use doctrine only empowers the State Water Board to ensure water is used reasonably under a particular right of use; it does not empower the State Water Board to permanently curtail a right under which water has been used unreasonably. For this reason, the doctrine of unreasonable use is of limited value to the State Water Board in implementing water quality objectives.

(3) Public Trust.

The State Water Board may curtail water rights pursuant to the public trust doctrine in some circumstances. (*State Water Board Cases*, at 149-150; 23 CCR, § 780(a).) However, the State Water Board may not use its public trust authority to curtail water rights to implement the LSJR Flow Objective for several reasons. First, the State Water Board may only use the public trust doctrine to curtail vested water rights when it "is *necessary*" to protect the public trust interest. (23 CCR, § 780(a) (emphasis added).) This is a more stringent standard than that under which the State Water Board is required to establish water quality objectives; that standard requires the State Water Board to "establish such water quality objectives in water quality control plans as in its judgment will ensure the *reasonable* protection" of the identified beneficial use. (Water Code, § 13241 (emphasis added).) Therefore, even if its analysis for the establishment of the LSJR Flow Objective were sufficient, which it is not, the State Water Board may not rely on that analysis to implement the LSJR Flow Objective under its public trust authority. Instead, the State Water Board will need to notice and perform separate public trust proceedings to determine whether the objectives are necessary to protect the public trust.

Second, in order to curtail a vested appropriative right under the public trust doctrine, the State Water Board must make a finding, supported by substantial evidence, that the particular

diversion targeted is "harmful to the interests protected by the public trust." (*Id.*, at 151.) Thus, the State Water Board may not justify the exercise of its public trust power to curtail a particular vested appropriative right simply because fish and wildlife would benefit from more flow; rather, the State Water Board must show that fish and wildlife are specifically "harmed" by the particular diversion targeted. This greatly limits the latitude the State Water Board has to exercise its public trust authority to implement the LSJR Flow Objective.

Third, even if the State Water Board could demonstrate flows are necessary to protect the public trust resources and the diversions of the Irrigation Districts specifically harm public trust resources, the State Water Board must further find the curtailment of the targeted vested water right is in the "public interest." (*Id.*, at 151; Water Code, § 1253; 23 CCR, § 780(a).) The "public interest" consideration requires the State Water Board to "consider and protect all of the other beneficial uses" "including municipal, industrial, and agricultural uses." (*State Water Board Cases*, at 778.) A great majority of the beneficial uses the LSJR Flow Objective supports are municipal and agricultural uses, which a vast segment of the populace depend on for their livelihood and health and safety. It is unclear what level of protection, if any, the proposed project will provide to fish and wildlife. The established benefit of existing uses, combined with the undefined benefit of the proposed project, make it is difficult to imagine a good faith balancing of the public interest which would result in a curtailment of these vested rights pursuant to the public trust.

Thus, the public trust doctrine is not a tool the State Water Board will likely be able to use to implement the LSJR Flow Objective. In order to implement flows through the State Water Board's public trust authority, the State Water Board would need to notice public trust proceedings. The State Water Board would need to weigh and balance the information coming out of those proceedings to determine: (a) the LSJR Flow Objective is necessary to protect fish and wildlife; (b) the diversion of the Irrigation Districts are causing the harm to the native fishery; and (c) the LSJR Flow Objective promotes the public interest. Because that evidence does not exist, the State Water Board's reliance on the public trust is misplaced.

(4) Pre-1914 and Riparian Rights.

The State Water Board recognizes it has limited authority and jurisdiction over pre-1914 and riparian rights. (State Water Board Resolution 96-028.) Despite this recognition, however, the SED fails to evaluate how much water in the plan area is diverted pursuant to pre-1914 and riparian rights. Without this analysis, it is not clear whether there is sufficient water over which the State Water Board has jurisdiction to implement the LSJR Flow Objective.

B. The State Water Board Lacks Authority to Control Reservoir Operation.

The SED's analysis of the proposed project assumes the LSJR Flow Objective will have no impact on reservoir levels. (SED, at 5-58; 6-22.) Because the SED does not analyze alternative methods of operation, it seems the State Water Board may attempt to require the Irrigation Districts to operate in the manner analyzed. In order to do so, the State Water Board must have the legal authority to require the Irrigation Districts to maintain reservoir levels and it does not have such authority.

The State Water Board does not have the jurisdiction to control the Irrigation District reservoirs. The State Water Board is federally preempted from exercising any such control. The United States Supreme Court, the Ninth Circuit, and a California Appellate Court have all held that under the Federal Power Act, FERC "occupies the field" of hydropower operations. (*See California v. FERC*; *Sayles*; *Karuk*.) Under these holdings, state regulation of hydropower operations is preempted, except in circumstances concerning proprietary rights to water. (*Sayles*, at 456; *Karuk, at* 350.) Therefore, the State Water Board does not have the authority to control FERC operations.

Apart from the jurisdiction issue, the State Water Board authority to control reservoir operations is limited to its reserved jurisdiction over water storage licenses held by the Irrigation Districts. (23 CCR, § 780.) Two reservations of jurisdiction are relevant to this discussion. The first authorizes the State Water Board to exercise continuing jurisdiction over the license to protect public trust uses or to prevent waste or unreasonable use. (23 CCR, § 780(a).) It is unlikely the State Water Board will be able to justify the curtailment of water provided to irrigators because the water is beneficially used to grow crops. Furthermore, it is unlikely the fluctuation of reservoir levels will

impede upon any public trust uses because the reservoirs already fluctuate and the public interest balancing required by the public trust doctrine will not likely inure to the State Water Board's argument in its application.

The second license condition under which the State Water Board may assert its continuing jurisdiction authorizes the State Water Board to modify "the quantity of water diverted" under the license where "such modification is necessary to meet water quality control objectives." (23 CCR, § 780(b).) This condition, unlike the one discussed above, does not authorize the State Water Board to insert new conditions into the license; the State Water Board may *only* modify the *amount diverted* under the license. Because the LSJR Flow Objective requires the Irrigation Districts to bypass water for fish and wildlife, the limited ability to curtail diversion to storage will not aid in the meeting of the LSJR Flow Objective. Furthermore, even if this curtailment could be considered "necessary" to accomplish the objectives, it would not have an effect on the Irrigation Districts' ability to fully control reservoir operations. Thus, this license condition does not empower the State Water Board to control reservoir operations.

Therefore, the State Water Board may only control reservoir operations through modifying the conditions existing in some of the Irrigation Districts' licenses if it can justify the modification through its public trust authority. Even if such a modification could be justified, the action is not authorized under the license condition unless the State Water Board shows "that such specific requirements are physically and financially feasible and are appropriate to the particular situation." (*See* 23 CCR, § 780(a).) Curtailing the ability to deliver water to irrigators is not financially feasible for the thousands of members of the Irrigation Districts who will lose their livelihood if they are unable to receive reservoir water. Furthermore, a condition requiring the Irrigation Districts to curtail their deliveries to their irrigators simply to reduce fluctuation of reservoir levels is not appropriate, as it would deprive thousands of irrigators of their livelihood and impact state and local economies. Therefore, the State Water Board does not have the authority to control reservoir operations.

C. The State Water Board's Authority to Implement Water Quality Objectives Through FERC Relicensing is Limited.

The SED states the State Water Board plans to implement the water quality objectives through the FERC relicensing process. (Appendix K, at 2.) The 401 certification process allows the State Water Board to include water quality measures in the FERC license. However, 401 certification is not intended to be the mechanism through which water quality objectives are implemented. (*State Water Board Cases*, at 752 [stating water quality objectives are usually implemented by amending water right permits].) Further, there are serious limitations to the State Water Board's 401 certification powers.

The rules of water right priority require the State Water Board to undertake a water right proceeding before looking to FERC to satisfy water quality objectives. The State Water Board cannot require senior water rights holders to dedicate water to instream uses before junior water rights simply because the right is tied to a project being relicensed. (*El Dorado Irr. Dist. v. State Water Resources Control Bd.* (2006) 142 Cal.App.4th 937, 963-964.) Therefore, regardless of the timing of relicensing, the State Board cannot use the FERC proceedings to require senior water right holders to contribute water to meet water quality objectives without first requiring all junior water right holders to cease diversions.

In addition, the 401 certification is limited to conditioning project-related impacts. (Water Code, § 13160 [authorizing the State Water Board to grant any certificate required by any federal agency when "there is a reasonable assurance that an **activity… will not reduce** water quality below applicable standards…" (emphasis added)]; *See also* 23 CCR, § 3855(b)(2)(B).) Therefore, to the extent the State Water Board wishes to use the FERC proceedings to implement the LSJR Flow Objective, the State Board must first establish that the project undergoing relicensing is preventing the achievement of the LSJR Flow Objective. The State Water Board has not made this finding and the SED does not provide sufficient information upon which such a finding could be made.

IV. The Proposed Project Violates the Porter Cologne Act.

A. The State Water Board Fails to Balance Beneficial Uses of Water.

Water Code section 13241 requires the State Water Board balance several factors when developing water quality objectives. Such factors include:

(a) Past, present, and probable future beneficial uses of water.

(b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.

(d) Economic considerations.

(e) The need for developing housing within the region.

(f) The need to develop and use recycled water.

The State Water Board must consider these factors and demonstrate a rational connection between those factors and the proposed regulation. (*Racanelli*, at 182; *California Hotel & Motel Assn. v. Industrial Welfare Com.* (1979) 25 Cal.3d 200, 212.) The SED does not reflect the State Water Board has considered these factors and does not demonstrate a rational connection between these factors and the LSJR Flow Objective. For this reason, the SED has not satisfied the requirements of section 13241.

The LSJR Flow Objective proposes to decrease the beneficial use of water for agriculture, domestic and municipal and industrial uses and increase the water dedicated to the protection of fish and wildlife beneficial uses. Therefore, in order to determine whether the LSJR Flow Objective provides reasonable protection, the State Water Board must weigh and balance the beneficial uses against each other and demonstrate a rational connection between the proposed project and the benefit to fish and wildlife. This analysis is not included in the SED.

Most strikingly, the SED does not analyze how the proposed project will protect fish and wildlife beneficial uses. Instead, the SED "assumes" that "a change in median flows of 10 percent or more would be sufficient to result in a measurable or significant long-term response in [fish]

populations." (SED, at 7-67.) This assumption does not satisfy the requirements of section 13241. In order to adequately satisfy the balancing requirement, the State Water Board must understand the level of protection or extent of the benefit the proposed project will provide to fish and wildlife. The State Water Board must then weigh this level of benefit against the adverse impacts to agriculture, hydropower, and other beneficial uses of water that the proposed project will adversely impact. This analysis is fundamental to the development of water quality objectives. Because the SED does not include this analysis, the proposed LSJR Flow Objective is not supported by substantial evidence and cannot be approved by the State Water Board.

B. The Program of Implementation Violates the Requirements of the Porter Cologne Act.

The Porter Cologne Act requires each water quality control plan include a program of implementation. (Water Code, § 13050(j).) The purpose of the program of implementation is to disclose the methods through which the State Water Board will ensure the implementation of water quality control objectives. (*Id*., § 13242.) The SED's program of implementation violates the requirements of the Porter Cologne Act in several ways. First, the program of implementation is unclear as to whether it is implementing the Narrative Objective or the LSJR Flow Objective. Second, the requirements of the program of implementation are not met. Third, the program of implementation fails to ensure the actions it assigns to other entities will be taken. Fourth, the program of implementation contains measures which will not fully implement the water quality objectives.

(1) The Program of Implementation Implements Only the Narrative Objective.

The program of implementation is not clear regarding whether it intends to implement the LSJR Flow Objective, the Narrative Objective, or both. The program of implementation does not provide implementation measures for the LSJR Flow Objective. The LSJR Flow Objective and the Narrative Objective are two different objectives. Thus, the reference to the "narrative LSJR flow objective" makes it unclear as to whether the program of implementation is describing the State Water Board's plan to implement the Narrative Objective or the LSJR Flow Objective. Although it

is not clear, it appears the program of implementation provides implementation measures only for the Narrative Objective. For example, the program of implementation states its purpose is to "describe the flow actions that the State Water Board will take to implement the Narrative Objective." (Appendix K, at 2.) In addition, the program of implementation states that flow alone will be insufficient to achieve the Narrative Objective; flow alone would, obviously, be enough to fulfill a flow objective. Both of these statements suggest the program of implementation implements the Narrative Objective, but not the LSJR Flow Objective. Because the program of implementation does not include implementation measures for the LSJR Flow Objective, the proposed project violates the Porter Cologne Act.

(2) The Program of Implementation Does Not Include the Components Required by Law.

The program of implementation is required to include: (a) a description of the nature of actions necessary to achieve the water quality objectives, including recommendations for appropriate action by any entity, public or private; (b) a time schedule for actions to be taken; and (c) a description of surveillance to be undertaken to determine compliance with water quality objectives. (Water Code, § 13242.) The program of implementation does not contain any of the three required components.

First, the program of implementation does not describe the actions necessary to achieve the LSJR Flow Objective. Instead, the program of implementation sets forth a convoluted process to develop implementation actions in the future. (Appendix K, at 4.) Specifically, the program of implementation sets forth the following plan: (a) the State Water Board will convene an Implementation Workgroup of fishery and water supply operations experts; (b) the Implementation Workgroup will develop recommendations for measures to achieve flow objectives; (c) the Implementation Workgroup recommendations will be included in a larger Implementation Plan; (d) the Implementation Plan will be submitted to the Executive Director for approval; and (e) if approved by the Executive Director, the Implementation Plan will be considered by the State Water Board during water right proceedings, FERC relicensing, or other implementation actions.

(Appendix K, at 4.) This conflated process is an obstruction and a distraction. Setting forth a process to develop actions in the future is not the same as identifying and describing actions necessary to achieve the LSJR Flow Objective. This protracted process does not provide sufficient information for the regulated community to understand how the State Water Board will implement the flow objective. For this reason, the program of implementation is deficient and fails to describe the actions necessary to achieve the objectives.

Second, the program of implementation does not describe a time schedule for actions to be taken. The only time schedule included in the program of implementation is the requirement that recommendations of the Implementation Workgroup be provided to the Executive Director within 180 days from the date of the Office of Administrative Law approval. (Appendix K, at 4.) This is not a time schedule of implementation actions. The program of implementation is required to set forth a time schedule of actions to implement the objectives, not a schedule to develop actions in the future. For this reason, the temporal requirement to get recommendations to the Executive Director does not satisfy the requirement for a schedule.

Third, the program of implementation does not include a description of surveillance to be undertaken to determine compliance with the water quality objectives. The program of implementation states it "will require the development of a comprehensive monitoring, special studies, evaluation, and reported program referred to as the San Joaquin River Monitoring and Evaluation Program." (Appendix K, at 11.) The promise to require the development of a monitoring program in the future is not the same as describing surveillance requirements.

(3) <u>The State Water Board Fails to Ensure the Actions Assigned to Other Agencies Will Be Undertaken</u>.

A legally adequate program of implementation includes a description of recommended actions, a time schedule for those actions, and surveillance of these recommended actions. (Water Code, § 13242.) In the program of implementation for the LSJR Flow Objective, the State Water Board makes a series of recommendations to other agencies and entities to perform certain actions which "must be provided" to meet the water quality objectives. (Appendix K, at 8.) While the

program of implementation includes recommend actions to other agencies, it fails to provide a time schedule under which the recommended actions must be performed, and provide a description of the surveillance the State Water Board will employ to ensure compliance with the recommendations. (*See Id.*, at 8-9.)

The State Water Board is required to ensure the actions it recommends as necessary to protect fish and wildlife are carried out. Water Code section 13242 specifically requires the State Water Board include a time schedule and surveillance actions for recommended actions in its program of implementation. (Water Code, § 13242(a) [stating that the State Water Board may make a recommendation to implement the objectives, but not lifting the requirements of a time schedule or description of surveillance where a recommendation is made].)

Further, the SED acknowledges flow "will not be adequate to fully protect and restore fish and wildlife beneficial uses in the LSJR." (Appendix K, at 8.) To the contrary, the SED acknowledges that non-flow measures will need to be taken. This conclusion requires the SED ensure the non-flow measures are performed. Because the program of implementation does not include a time schedule and surveillance actions, it violates the Porter Cologne Act.

The 2006 Bay Delta Plan did not include a time schedule or surveillance methods for the non-flow implementation measures. As a result, these measures were never implemented. (2006 Bay Delta Plan, at 35-41.) The State Water Board is required to fully implement its water quality control plan. (*State Water Resources Control Bd. Cases* (2006) 136 Cal.App.4th 674, 733.) The State Water Board cannot fully implement its plan if it does not even attempt to require compliance with its program of implementation. Although the State Water Board may not force other agencies or entities to comply with its recommendations, it has tools available to incentivize compliance. For instance, the State Water Board could use flow requirements as leverage by refusing to implement the LSJR Flow Objective until non-flow actions were taken. Conversely, the LSJR Flow Objective could expire upon a date certain if particular non-flow actions are not taken. The State Water Board could enter into an agreement or memorandum of understanding with agencies tasked with non-flow measures which set forth deadlines and reporting requirements. In addition, the State Water Board

could modify appropriative permits held by these agencies or entities if they failed to implement the non-flow actions. Because the State Water Board has not included any of these actions in the program of implementation it is deficient.

(4) The Program of Implementation Relies on Implementation Measures that Cannot Implement the Objectives.

The program of implementation states the State Water Board "will require implementation of the narrative LSJR objective described in Table 3 of the Bay Delta Plan through water rights actions, FERC hydropower licensing processes, other water quality actions, or actions by other entities." Table 3 only references the Narrative Objective; it does not include any quantified or measurable metric that could be implemented by FERC or through a water right proceeding. For example, the FERC relicensing process will not be able to amend a water right or include a 401 provision that requires the support and maintenance of fish, rather than a numeric flow requirement. Because Table 3 provides no numeric or otherwise measurable requirement, a water right proceeding or 401 certification cannot implement the Objective as set forth in Table 3.

C. The LSJR Flow Objective Will Not Reasonably Protect Fish and Wildlife.

The State Water Board must establish water quality objectives which "in its judgment will ensure the reasonable protection of beneficial uses." (Water Code, § 13241.) "Protect" is defined as "to cover or shield from exposure," or "to maintain the status or integrity of especially through legal guarantees." (http://www.merriam-webster.com/dictionary/protect.) The State Water Board proposed the LSJR Flow Objective to ensure the reasonable protection of fish and wildlife. However, the State Water Board has not described how the LSJR Flow Objective will provide any protection, let alone a reasonable degree. This deficiency violates Water Code section 13241 requirements and the general purpose of water quality control plans.

(1) Assumption of Benefit is Not the Same as a Judgment of Reasonable Protection.

Water Code section 13241 requires the State Water Board to make a judgment that the objective will ensure the reasonable protection of beneficial uses. The State Water Board does not

make the judgment that the proposed project will ensure the reasonable protection of fish and wildlife. Each time the SED discusses the relationship between the proposed project and the protection of fish and wildlife, the SED states:

> The historical relationship between spring flows during the juvenile emigration period and subsequent adult abundance has been the basis for a number of analyses and experimental investigations aimed at understanding the factors influencing salmon survival and population dynamics under historical and recent water management operations in the SJR and Delta. These investigations suggest that flow in the SJR and the major tributaries has a major influence on juvenile salmon survival between March and June as individuals complete the freshwater rearing, smoltification, and migration stage of their lifecycles.

(SED, at 7-34.)

In summary, this paragraph states that experimental investigations suggest flow influences salmon rearing, smoltification, and migration from March through June. The statement that experimental investigations *suggest* flow will influence fish and wildlife does not amount to a judgment that the flows from the proposed project will protect fish. The SED is wholly without any further analysis that does more than "suggest" or guess at whether the proposed project will offer fish and wildlife reasonable protection. For this reason, the State Water Board has not made the requisite determination that, in its judgment, the proposed project will protect fish and wildlife. The SED must be revised to include a description of the protection fish species will receive from the proposed project and a judgment as to whether this protection is reasonable.

(2) The State Water Board's Assumption that the Proposed Project Mimics Natural Flows is Untested and Untrue.

The SED alleges that flows that mimic the natural hydrograph will protect fish and wildlife. The SED goes on to assume the proposed project will result in flows that mimic the natural hydrograph (SED, at 1-6). The State Water Board does not support or test this assumption. The SED does not attempt to model or otherwise demonstrate that the proposed project will actually result in a hydrograph that is more "natural" than the system currently provides.

In fact, the proposed project will not increase the variability of flows. The SJTA modeled unimpaired flow requirements, measured with a 14 day running average and provided the

information to the State Water Board staff. The results indicate that the proposed project will not result in a more varied hydrograph than currently exists.

The protection of fish and wildlife is based on the premise that fish will benefit from flows of a more natural regime. Because the proposed project will not provide flows that are more "natural" than currently exist, the proposed project cannot be said to provide reasonable protection to fish and wildlife. Without the provision of such protection, the proposed project is arbitrary and capricious.

(3) There is No Evidence February Flows Protect Fish and Wildlife.

The SED states that experimental investigations suggest flow influences rearing and migration from March to June. (SED, at 7-30.) The experimental investigations do not suggest February flows influence rearing or migration of native fish, and the SED does not include any other information that suggests February flows will benefit or otherwise protect fish species. Further, there is evidence in the record that February flows do not provide benefit to outmigrating native fish. (SED, at 7-34.) The SED should be revised to amend the preferred alternative to exclude February flows and analyze the environmental impacts of a LSJR Flow Objective that begins in March.

(4) There is No Evidence June Flows Protect Fish and Wildlife.

Similar to February flows, the record includes evidence that June flows provide little, if any, protection to fish species. (Letters dated May 29, 2012, November 5, 2012.) By June the salmon have migrated out of the tributary systems and those that survive are on their way through the Delta. (SED, at 7-29; 7-38; 7-46.) The record also includes information which indicates that about 40 percent of the water costs are due to June flow requirements. (Letters dated April 10, 2012, March 2, 2012.) Because there are few, if any, fish migrating through the system and flow requirements in June are responsible for such a large portion of the adverse impacts, June flows do not provide reasonable protection to salmon. The SED should be revised to amend the preferred alternative to exclude June flows and analyze the environmental impacts of a LSJR Flow Objective that ends in May.

(5) There is No Evidence that the Proposed Alternative Will Reasonably Protect Fish and Wildlife.

There is no evidence in the record that establishes the proposed alternative will protect fish and wildlife. In support of the SED statement that experimental investigations suggest flow may influence salmon, the SED cites to Chapter 3 of the Technical Report, contained in Appendix C. (SED, at 7-38.) The Technical Report relies exclusively on the Department of Fish and Game ("DFG") Salmon Model. Although it appears the Technical Report cites to other authorities, when these citations are reviewed, they also rely upon the DFG Salmon Model. (*See* Appendix C.)

(a) DFG Salmon Model is Not Best Available Science.

The State Water Board must rely on the best available science. The DFG Salmon Model is not the best available science for several reasons. First, the DFG Salmon Model does not utilize widely-accepted statistical practices. Instead, the DFG Salmon Model uses a simple liner regression model which relies on the output of other linear regression models. This is not an accepted statistical modeling approach because it can lead to amplified errors and uncertainty in the overall model output that are difficult to quantify.

Second, the DFG Salmon Model is not robust and its conclusions can change drastically from minor changes in the fitting data. Specifically, the type of model is not appropriate for the data. Third, the DFG Salmon Model has little predictive value; the Model's predictions of escapement compared to actual escapement are widely variable. The predictions are highly unreliable because the size of its variability is typically larger than the prediction itself, making the prediction of no practical use.

Fourth, the DFG Salmon Model's only measured flow; it does not take into consideration other stressors that influence the entire life cycle of salmon such as ocean harvest, hatchery practices, ocean conditions, water temperature, dissolved oxygen, and predation.

In addition, DFG itself recognizes the DFG Salmon Model is not the best science and cautioned the State Water Board against relying upon the Model. DFG made a presentation on SalSim to the State Water Board which is part of the administrative record in this matter. (*See* DFG Presentation

[http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/wrkshp3/fishagencies.pdf].) SalSim is the new model that replaces the DFG Salmon Model 1.6. (*Id*., at 4.) DFG presented SalSim as a new and improved model based on the best available science. In the presentation, DFG characterized the DFG Salmon Model 1.6, as an "intermediate model" and noted Model 1.6 failed to consider the impacts of predation, hatchery, ocean harvest and the various life stages of salmon. (*Id*., at 6, 20.) Further, DFG "strongly recommend[ed] that the State Water Board use the SalSim 2.0 model to consider potential changes to the Bay Delta Plan." (DFG Written Presentation[http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/comments111312/scott_cantrell.pdf].)

(b) The State Water Board Failed to Examine Results of Salmon Model 1.6.

Even if the DFG Salmon Model were acceptable science, which it is not, the DFG Salmon Model does not support the proposed project. The SED relies on the DFG Salmon Model to support its contention the proposed project's increase of instream flow will benefit salmon. (Appendix C, Chapter 3.) The DFG Salmon Model does not support this general assumption. The DFG Salmon Model indicates high levels of flow in excess of managed flow ranges may benefit salmon. Thus, the DFG Salmon Model does not support the assumption that salmon are protected by flows *within* managed flow ranges.

In any case, the SED failed to run the DFG Salmon Model on which it relied for any of its proposed alternatives. This failure is significant because the SED relies upon the DFG Salmon Model exclusively for its assumption that the proposed project will benefit salmon. Despite this reliance, the SED does not analyze the Model results for the propose project. This failure alone renders the SED arbitrary and capricious.

(6) There is Evidence the Proposed Project Will Not Provide Protection to Fish and Wildlife.

Had the State Water Board run the DFG Salmon Model, it would be forced to recognize the Model predicts that the proposed project does not provide any (let alone reasonable) protection to salmon. The SJTA ran the DFG Salmon Model for 35 percent unimpaired flow. The results are

disturbing. Over the past ten years, the DFG Salmon Model predicts that the 35 percent unimpaired flow would return no more fish when compared with the historic average. (*See* Demko Presentation March 31, 2013, Slide 24.) This means that for the significant and unavoidable impacts to water supply, agriculture, the economy, service providers, climate change, and groundwater, fish populations would not improve or be further protected. The SED must be revised to include the results of the DFG Salmon Model for each of the alternatives and evaluate the benefit to salmon against the adverse impacts to the other beneficial uses of water.

V. CEQA Violations.

The State Water Board's review and amendment of the Water Quality Control Plan is required to comply with CEQA. (SED, at ES-1.) The water quality control planning program is a certified regulatory program and therefore the State Water Board is allowed to develop an SED in lieu of an environmental impact report. (14 CCR, § 15251; 23 CCR, § 3775.) Although the environmental review is being performed pursuant to an exemption to certain CEQA requirements, the review remains "subject to the broad policy goals and substantive standards of CEQA." (*City of Arcadia v. State Water Resources Control Board* (2006) 135 Cal.App.4th 1392, 1422 ("*City of Arcadia*").)

Courts give the State Water Board great deference when drafting an SED; the SED will be struck down only if the administrative record reflects the lead agency abused its discretion. (*Habitat and Watershed Caretakers v. City of Santa Cruz* (2013) 152 Cal.Rptr.3d 888, 896.) Abuse of discretion occurs when (a) an agency has not proceeded in a manner required by law, or (b) an agency determination is not supported by substantial evidence. (*State Water Board Cases*, at 723, [*quoting Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359].) The State Water Board cannot adopt the SED as currently drafted because it fails to proceed in a manner required by law and several of its determinations are not supported by substantial evidence.

A. The State Water Board Did Not Proceed in a Manner Required By Law.

Failing to proceed in the manner required by CEQA is an abuse of discretion. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435

("*Vineyard Area Citizens*") [*citing* Pub. Resources Code § 21168.5].) The review of whether an agency has scrupulously enforced all legislatively mandated CEQA requirements is subject to de novo review. (*Id.*; [*citing Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236].)

(1) The SED Fails to Evaluate Dry Year Impacts.

The Mediterranean climate of California is defined by periods of wet and dry years; the system is boom and bust. Dry year and drought periods are not just likely to occur – they are guaranteed to happen. In dry years, water delivery is often reduced, groundwater use is increased, fields may be fallowed, hydropower generation is reduced, and the economy is adversely impacted. The SED proposes to reduce water deliveries. These reductions will affect the environment differently depending on the existing hydrology. Thus, in dry years the proposed project will affect the environment quite differently than in average or wet water year types.

The State Water Board is required to analyze the environmental impacts of the proposed project. (23 CCR, § 3777(a)(1).) Because the environmental impacts of the proposed project vary greatly depending on the hydrologic year type, the SED is required to analyze the impacts of the proposed project in various water year types. The SED cannot limit its analysis to the consideration of impacts from the average of these widely variable potential impacts. (*San Joaquin Raptor*, at 665-6 [finding the environmental review of a project with widely variable potential impacts deficient for analyzing only the average impact].) An SED may only use numeric ranges or averages "where specific data are not available." (23 CCR, § 3777(c).) The data on dry years is readily available to the State Water Board. The SED confirms this availability. In several instances, the SED discloses dry year data. (SED, at 2-35; 5-32; Appendix F, at 1-28.) Further, the SED is transparent about the fact the average hydrologic year was derived from a series of 82 hydrologic years, several of which were dry.

The lack of dry year analysis is a significant failure. For example, the SED estimates the proposed regulation will result in the fallowing of approximately 128,000 acres of irrigated farmland in average years. (SED, at 20-25.) The SED also estimates that in dry years, the proposed regulation would fallow approximately 220,000 acres. This is a large discrepancy. While the SED

analyzes the environmental impacts of the proposed project in average hydrologic years, it does not evaluate the impacts of the proposed project in a dry year or consecutive dry years. Because the impacts of the proposed project vary so widely between average and dry years and because the dry year data is readily available, it is not adequate to analyze only the average water year type.

Because the State Water Board was required to analyze dry year impacts, and it did not, it failed to proceed in the manner required by law.

(2) The SED Employs an Incorrect Baseline.

CEQA requires the SED to designate a proper baseline as the foundation for its environmental analysis. (14 CCR, § 15125.) A proper baseline must reflect the existing physical conditions and enable the environmental analysis to evaluate the impacts of the proposed project. (*Cherry Valley Pass Acres v. City of Beaumont* (2010) 190 Cal.App.4th 316 ("*Cherry Valley*"); *Neighbors for Smart Rail v. Exposition Metro Line Construction* (2012) 205 Cal.App.4th 552.) The general baseline rule provides that the baseline is usually set at the time the notice of preparation ("NOP") is published or at the time the environmental analysis is commenced. (14 CCR, § 15125.) The general rule is not rigid; rather, the State Water Board has flexibility is necessary to accommodate and account for changing conditions. (*Cherry Valley*, at 336.)

Selection of a proper baseline is important; without an appropriate baseline, an adequate analysis of an environmental impact cannot be measured. (*Cherry Valley*, at 337.) Further, selecting an improper baseline will skew the environmental analysis. Setting a baseline too late may incorporate some early project impacts into the baseline without sufficiently analyzing these impacts, while setting a baseline too early may attribute non-project-related impacts to the proposed project. (*Id.*) As discussed in greater detail below, the State Water Board failed to set the baseline in a manner required by law. This failure renders the SED's evaluation of environmental impacts arbitrary and capricious.

(a) VAMP Flows.

The SED baseline is incorrect because it includes the Vernalis Adaptive Management Program ("VAMP") flows. The inclusion of VAMP flows misrepresents the allocation of

responsibility for San Joaquin River flows, mischaracterizes the existing physical environment and underestimates the environmental impacts of the proposed alternative.

Under D-1641, the State Water Board allocated responsibility for meeting the San Joaquin River flows to the United States Bureau of Reclamation ("USBR") out of New Melones. The SJTA members have never been responsible for meeting the San Joaquin River Flow Objectives. Pursuant to the San Joaquin River Agreement ("SJRA"), the SJTA members previously released flows through VAMP. During VAMP, the SJTA members were able to provide flow because SJRA revenue funded conservation programs and efficiencies not otherwise funded. The term of the SJRA expired in 2010. D-1641 recognized VAMP flows would expire and recognized this expiration could occur before new objectives were in place. (Decision No. 1641, at 132, 162.) By including VAMP flows in the baseline the SED misrepresents the existing responsibilities of the USBR and SJTA members.

The inclusion of VAMP flows in the baseline also mischaracterizes the existing physical environment. VAMP flows are no longer in place. The existing environment that should be reflected by the baseline is that USBR is responsible for satisfying the San Joaquin River Flow Objectives and is currently sending down flows to meet the objectives.

The inclusion of VAMP flows in the baseline results in the SED underestimating environmental impacts of the proposed project. First, the SED underestimates the impact of the proposed project's reduction to water delivery. Because the baseline includes VAMP flows, the SED only analyzes the environmental impact of releasing flows in excess of VAMP flow levels. The Irrigation Districts are not currently providing VAMP flows. Therefore, the SED underestimates the impact of the proposed regulation.

Second, the inclusion of VAMP flows in the baseline falsifies operations at New Melones. By including VAMP flows, the SED makes water available from the Merced, Tuolumne and Stanislaus Rivers, masking the impacts of USBR operating New Melones to meet D-1641 requirements. In order to meet D-1641 requirements, New Melones operators would often need to draw down the reservoir to near empty. The SED fails to evaluate the impacts to this extreme

operation scenario and analyze whether the proposed regulation would further adversely impact the operation of New Melones under existing conditions.

(b) San Joaquin River Restoration Program.

The SED baseline does not include any flows from the San Joaquin River Restoration Program ("SJRRP"). Currently, the SJRRP affects flows, seepage and drainage in the San Joaquin River system. The SJRRP is part of the existing physical environment and therefore should be reflected as part of the baseline.

(c) OCAP Requirements.

The SED baseline does not include the Operations Criteria and Plan ("OCAP") Table 2E requirements which have been in place since 2009 and currently affect water delivery and instream flow on the Stanislaus River. By not including Table 2E flows in the baseline, the SED falsely concludes that 20 percent unimpaired flow alternative would reduce flows compared to baseline conditions, causing negative impacts to fish and wildlife. If the SED baseline included Table 2E, as required by CEQA, 20 percent unimpaired flows on the Stanislaus River would not reduce flows and no adverse impacts would result. Because the SED employs an incorrect baseline, the State Water Board has not proceeded in a manner required by law.

(3) The SED No-Project Alternative is Incorrect.

The SED analysis of the no-project alternative on the Stanislaus River is not correct for several reasons and therefore does not proceed in a manner required by law. First, the no-project alternative does not include the NMFS BO Action IV.2.1, which requires the Irrigation Districts provide minimum flows at Vernalis between April 1 – May 31. Because this requirement would be in place if the State Water Board took no action, the requirement should be included in the no-project alternative. (14 CCR, § 15126.6(e)(2) ["The 'no project' analysis shall discuss existing conditions at the time the notice of preparation is published…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."].) The SED must be revised to correct the no-project alternative to include Action IV.2.1.

Second, the environmental analysis of the no-project alternative includes operational requirements which would not exist if the State Water Board took no action. Specifically, the no-project alternative assumes Oakdale Irrigation District ("OID") and South San Joaquin Irrigation District ("SSJID") would share the responsibility of the USBR to comply with D-1641. This assumption is unfounded and unsupported; neither OID nor SSJID are responsible for existing D-1641 flows and in addition, both OID and SSJID have water rights that are senior to those of the USBR. Thus, if the State Water Board took no action, no such water delivery reductions would occur. If the State Water Board took no action, OID and SSJID would continue delivering water to their respective service areas and the USBR would meet the existing requirements by drawing down New Melones. Therefore, the environmental analysis of the no-project alternative is based on flawed operational assumptions. These flaws prevent the SED from properly analyzing the environmental impacts of taking no action.

Third, the SED estimates the impacts of the no-project alternative by using the WSE Model. The WSE Model assumes water delivery and reservoir storage constraints that do not exist and would not exist if the State Water Board took no action. For this reason, the WSE Model skews the no-project analysis and misrepresents the environmental impacts.

Fourth, the environmental analysis of the no-project alternative does not reflect the reality that the no-project alternative is not viable and will result in New Melones Reservoir emptying in dry years. The SED does not understand how New Melones Reservoir is operated. This lack of understanding is demonstrated in the SED's description of the no-project alternative on the Stanislaus River and lack of accounting for the water right priority of OID and SSJID. The State Water Board must understand the operation of the reservoirs it is proposing to regulate. The failure to demonstrate this understanding is a fundamental defect in the SED. Had the SED understood New Melones operations, the environmental analysis would reflect that compliance with the existing regulations is not operationally possible, as these requirements would often require New Melones to be emptied. Therefore, the SED's no-project alternative, which assumes OID and SSJID allocate water to meet the existing requirements is faulty and misrepresents environmental impacts.

Fifth, the environmental analysis does not accurately analyze the impacts of the no-project alternative on aquatic resources. The flaws in the SED no-project analysis result in a false scenario in which the no-project analysis would provide increased instream flows. Although these flows would not occur in reality, the SED is internally inconsistent because it does not include an analysis of the environmental impact of these supposed increased flows. Therefore, the SED does not properly estimate the impact on fish and wildlife. For the reasons above, the State Water Board failed to analyze the no-project alternative according to the manner required by law.

(4) The SED Fails to Provide a Sufficient Project Description.

An accurate description of the project is a necessary element of environmental review. (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192.) The purpose of environmental review is to provide the public with detailed information about the effects a proposed project is likely to have on the environment. (*Laurel Heights Imp. Ass'n of San Francisco, Inc. v. Regents of University of California* (1988) 47 Cal.3d *37*, 391 ("*Laurel Heights*"); Pub. Resources Code, § 21061; 14 CCR, § 15003(b).) CEQA requires a project description sufficient to permit preparation of a meaningful and accurate report of the impacts of the proposed project. (*Laurel Heights*, at 396.)

Most environmental documents dedicate an entire chapter to describing the project purpose and goals. The SED does not include such a chapter. In fact, the SED fails to include even a section in which the proposed project is described. Instead, the SED buries the description of the proposed project in a few sentences in the introduction. The introduction states the proposed project would create a new LSJR Flow Objective for the protection of fish and wildlife beneficial uses and an associated program of implementation. (SED, at 1-1.) The SED goes on to describe the alternatives for the LSJR Flow Objective as various percentages of unimpaired flows. Together, the description of the proposed project and alternatives do not provide sufficient information to determine the impacts the proposed project will have on the environment. Instead of clarifying and buttressing the project description, the program of implementation further confuses the proposed project.

The program of implementation is included in Appendix K. Appendix K does not set forth a program of implementation that is sufficiently developed to allow meaningful environmental review. The SED fails to describe the actions that will be included in the program of implementation. Instead, the SED states the program of implementation will be developed by stakeholders in the future. (Appendix K, at 4.) Because the program of implementation is part of the proposed project and the SED does not describe the program of implementation sufficiently to allow meaningful environmental review, the project description is deficient. Because the SED does not include a sufficient project description and program of implementation the State Water Board failed to proceed in the manner required by law.

(5) The SED Phasing Approach is Unlawful.

Historically, the State Water Board has performed its review of the Bay Delta Plan in one comprehensive process. (*See* 2006 Bay Delta Plan; *See* 1995 Bay Delta Plan; *See* 1991 Bay Delta Plan; *See* 1978 Bay Delta Plan.) Although the objectives are complex and multi-faceted, the Bay Delta Plan is a single basin plan that sets forth water quality measures which contribute to the beneficial uses in the Bay Delta Estuary. (*See* 1995 Bay Delta Plan, at 3.) Because the purpose of the water quality objectives is to benefit a single basin, they are often inextricably interrelated. For example, the San Joaquin River Flow Objective is affected by and affects the objectives which set reverse flows, export/inflow ratios, and floodplain habitat flows.

Currently, the State Water Board split its review of the Bay Delta Plan into phases by reviewing south Delta salinity and San Joaquin River Flow Objectives in a process preceding and separate from the remainder of the "comprehensive" review. This separation is unlawful for several reasons.

First, the Bay Delta Plan is a basin plan covering a single designated area. Separating south Delta and San Joaquin River flows from the remainder of the basin plan review results in a piecemealed analysis that is non-comprehensive. The San Joaquin River is one of the two rivers whose confluence makes up the Delta. Separating the flow objectives on the San Joaquin River from the larger "comprehensive" review of the remainder of the Bay Delta Plan makes little sense.

The quantity of San Joaquin River flows that will reasonably be required to protect the beneficial uses in the Delta is affected by reverse flows, exports, and other factors being reviewed in the "comprehensive" review. For this reason, evaluating San Joaquin River flows in isolation, without considering the other basin-wide mechanisms that are interrelated, results in a non-comprehensive piecemealed review.

Second, separating the processes will require water users on the San Joaquin River to expend twice the resources to achieve the same result. Because SJTA interests will be subject to all "phases" of the Bay Delta Plan review, it will be required to participate in two different review processes in front of the State Water Board, review at least two different environmental documents, and to the extent the adoption and/or implementation of any revised objectives do not comply with law, the SJTA will have to challenge two different actions adopting objectives and two different implementation plans. This unfairly prejudices the regulated parties on the LSJR.

Third, the piecemealed process is not conducive to properly evaluating the cumulative impacts of the proposed project. The SED does not take into consideration the impact of the potential subsequent amendment of objectives in the later "comprehensive" review. As noted above, these subsequent objectives may require different flows from San Joaquin River water users or impact the efficacy of the flows required by amended south Delta salinity and San Joaquin River Flow Objectives. The SED must consider the cumulative environmental impacts from Phase 1 and Phase 2.

Fourth, the California Code of Regulations, title 23, section 3777, requires a single SED be performed for each basin plan amendment. (23 CCR, § 3777.) Section 3777 specifically states that "Any water quality control plan . . . proposed for [State Water] Board approval or adoption must be accompanied by an SED." (*Id*.) This code provision does not provide or otherwise allow for multiple SED's for a single basin plan amendment.

For these reasons, the phasing approach to a single basin plan results in the failure of the State Water Board to proceed in a manner required by law.

(6) The SED Did Not Disclose or Evaluate Environmental Impacts From Changing the Narrative Objective.

The State Water Board is required to disclose and analyze the environmental effects of any proposed changes to its water quality objectives. (Pub. Resources Code, § 21159; 23 CCR, § 647.2(b).) The SED proposes to change the Narrative Objective. (Appendix K, at 1[Table 3].) However, the SED is completely devoid of analysis considering the environmental impacts from this change.

The 1995 Water Quality Control Plan established the existing Narrative Objective and it remained unchanged in the 2006 Bay Delta Plan. This objective provided a narrative description which called for the doubling of native salmon populations. The SED now proposes to replace the previous salmon doubling objective with an objective which requires the support and maintenance of the natural production of viable native fish populations migrating through the Delta. (Appendix K, at 1[Table 3].)

The SED does not analyze the potential environmental impacts that may result from changing the salmon doubling objective. Nor does the SED state that changes to the Narrative Objective will not result in environmental effects. In fact, it is likely that the changes will affect the environment. The proposed Narrative Objective does not appear to require the increase in salmon numbers, but only the support and maintenance of the natural production of viable native fish populations. Because the SED does not analyze the environmental impact of changing the Narrative Objective, the State Water Board has not proceeded in the manner required by law.

(7) The SED Fails to Consider a Range of Reasonable Alternatives.

The SED must consider a reasonable range of alternatives which could feasibly attain the basic objectives of the project. (Pub. Resources Code, § 15126(d); *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 873 ("*Friends of Eel River*").) It is well-established that environmental review is not required to analyze every conceivable alternative. (*Preservation Action Counsel v. City of San Jose* (2006) 141 Cal.App.4th 1336.) However, the SED is required to analyze a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. (*Id*.) Further, the SED is required to provide sufficient

information "from which one could reach an intelligent decision as to the environmental consequences and relative merits of the available alternatives." (*San Joaquin Raptor*, at 738; [*quoting Friends of Eel River*, at 873].)

The SED failed to properly consider a reasonable range of alternatives. Instead, the SED, in reality, considered only the unimpaired flow regime. Because the SED fails to consider other flow and non-flow alternatives that could feasibly attain the basic objectives of the project, the discussion of alternatives does not foster informed decision-making and the State Water Board failed to proceed in the manner required by law. (*Friends of Eel River*, at 874.)

(a) The Alternative Considered Is Extremely Narrow.

The purpose of the proposed project is to provide reasonable protection to fish and wildlife. There are a number of factors or stressors that affect native fish, including, but not limited to, ocean harvest, ocean conditions, hatchery practices, predation, temperature, dissolved oxygen, nutrients, toxics, turbidity, availability of food, and habitat. Taking these factors into account, there are literally hundreds of actions the State Water Board could have considered as feasible alternative actions.

The SED failed to consider any of these alternatives. Instead, the SED evaluated only a single alternative: unimpaired flow. The SED claims that by considering varying percentages of unimpaired flow it satisfied the requirement to evaluate a range of reasonable alternatives. This is not the case; the varying unimpaired flows ranges are simply gradations of the same alternative, they are not separate alternatives.

(b) The SED Failed to Consider Other Reasonable Flow Alternatives.

The proposed project attempts to extinguish the need to consider non-flow alternatives by including flow requirements as part of the project definition. Even if this were lawful, which it is not, the SED's flow alternatives fall short. For example, the SED could have analyzed an objective based on unimpaired flow in months different than the February to June period. The SJTA provided the State Water Board staff with significant information regarding the lack of fish benefit and disproportionate cost burden related to increasing flows in June. This information makes the

alternative of flow requirements for February through May a reasonable alternative that should have been analyzed in the SED. The SED did not analyze a February through May alternative. For this reason, the SED did not consider a range of reasonable alternatives.

The SED also failed to consider flow alternatives other than percentages of unimpaired instream flow. For example, several stakeholders suggested pulse flows may provide more benefit to fish and wildlife as compared to a constant level of unimpaired flow because such pulse flows may provide floodplain habitat, assistance in outmigration, and/or increased turbidity. Based on this information, a flow regime which allowed pulse flows for floodplain habitat, outmigration, or other benefits is a reasonable alternative that the SED should have analyzed.

The State Water Board also could have considered an alternative that tailored specific flow regimes for each tributary based upon different flow functionality goals. For example, flows on the Tuolumne River could be focused on spawning flows, flows for outmigration on the Merced River, etc. The SED did not analyze the environmental impacts of a pulse flow objective or a tributary-specific flow objective. For this reason, the SED did not consider a range of reasonable alternatives, and the State Water Board did not proceed in the manner required by law.

(c) The SED Failed to Consider Reasonable Non-Flow Alternatives.

The purpose of the proposed project is to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta. (Appendix K, at 1.) Because it is feasible that the support and maintenance of fish could be achieved through a variety of non-flow actions, the SED alternatives should have included the analysis of non-flow measures.

For example, several recent studies have been released which show predation is the dominant stressor to salmon smolts in the San Joaquin River tributary systems – allowing less than five percent salmon smolt survival to the mainstem of the San Joaquin River. (VAMP 2011 Report; 2013 FERC Tuolumne River Predation Report.) An alternative that addresses the stressor causing approximately 95 percent mortality is not only reasonable, but necessary. Predation rates are so high, it is likely that no flow regime could be crafted to support and maintain salmon. In this

situation, flow alternatives may be rendered "infeasible" because without addressing predation, a flow-only alternative will not achieve the basic objectives of the project.

The SED is required to include an analysis of a predation alternative because it would mitigate significant impacts arising out of the existing alternatives. (Pub. Resources Code, § 21002 ["[P]ublic agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental impacts of such projects"] (emphasis added); *Friends of the Eel River*, at 873 [the lead agency "must discuss project alternatives that would mitigate any significant cumulative impacts" of the project].) Predation programs have minimal water costs and provide a substantial and measurable benefit to native fish species, which would result in less significant environmental impacts compared with any of the flow alternatives evaluated in the SED. Thus, the omission of a predation alternative amounts to an omission of relevant, crucial information and therefore, the SED has subverted the purposes of CEQA and is legally inadequate. (*Friends of Eel River*, at 783.)

In addition, the SED failed to analyze objectives which amend ocean harvest, increase floodplain habitat, develop spawning habitat, and other non-flow measures. Because the SED does not include this analysis, the State Water Board has not proceeded in the manner required by law.

(d) The SED Failed to Explain the Infeasibility of Alternatives it Decided Not to Consider.

The SED acknowledges it must identify all alternatives the State Water Board considered but did not analyze due to infeasibility. (SED, at 3-8.) Further, the SED makes clear the State Water Board is required to explain the reasons it determined analysis of the alternatives was infeasible. (*Id*.) Pursuant to these requirements, the SED includes Section 3.6.1, which discloses approximately fifteen alternatives that stakeholders suggested the State Water Board analyze. Although these alternatives are disclosed, the SED fails to explain the basis for the State Water Board's determination that they are not feasible.

For example, the SED discloses that stakeholders suggested the State Water Board consider an alternative that would measure the protection of fish and wildlife based on environmental

condition metrics. (*Id.*, at 3-9.) The SED did not explain why this alternative was not feasible. In fact, the SED stated it "anticipated that environmental condition metrics will be considered during the development of monitoring or special studies programs." (*Id.*) The State Water Board's anticipation that an alternative will be otherwise "considered" is not a reason that it is infeasible to fully analyze in the SED. Further, the State Water Board's anticipation that an alternative will be "considered" when developing monitoring programs does not replace or otherwise satisfy analysis that would be performed if environmental condition metrics were an alternative in the SED. For these reasons, the SED fails to properly disclose and analyze reasonable alternatives.

The SED did not adequately explain its refusal to consider the "upstream inclusion" alternative. (SED, at 3-24.) The suggested alternative would require the SED to evaluate the impacts of requiring San Joaquin River water users upstream of the Merced River to contribute flows to comply with the LSJR Flow Objective. The SED does not state it is infeasible for the State Water Board to consider the "upstream inclusion" alternative. Instead, the State Water Board stated that it would be considering the "need" for "additional flows" from the upper San Joaquin River Basin to "contribute to the narrative LSJR flow objective" "during the next review of the Bay Delta Plan." (*Id.*) Therefore, in this circumstance, the SED has admitted it plans to evaluate the proposed alternative at a later date. The SED does not provide a reason or other defense as to why the analysis is not included in the current SED. For this reason, the SED failed to properly explain why it is not legally obligated to consider the "upstream inclusion" alternative.

The SED did not adequately explain its refusal to consider the "south Delta and lower San Joaquin River" alternative. (SED, at 3-24.) The suggested alternative would require the SED to evaluate the impacts of ensuring flows are not rediverted by south Delta and downstream San Joaquin River diversions. The SED does not state it is infeasible for the State Water Board to consider the "south Delta and lower San Joaquin River" alternative. Instead, the SED stated the State Water Board "may" take actions to ensure water would not be unlawfully diverted in the program of implementation. (*Id.*) This statement of possible future action does not provide a reason or other defense as to why the analysis is not included in the current SED. For this reason, the SED

failed to properly explain why it is not legally obligated to consider the "south Delta and lower San Joaquin River" alternative.

(8) The SED Failed to Consider Reasonably Foreseeable Methods of Compliance.

Section 3777 states the SED must analyze the reasonably foreseeable methods of compliance. (23 CCR, § 3777(b)(4).) Specifically, this section requires the methods of compliance analysis include "***at a minimum all***" of the following:

> (A) An identification of the reasonably foreseeable methods of compliance with the project;
>
> (B) An analysis of any reasonably foreseeable significant adverse environmental impacts associated with those methods of compliance;
>
> (C) An analysis of reasonably foreseeable alternative methods of compliance that would have less significant adverse environmental impacts; and
>
> (D) An analysis of reasonably foreseeable mitigation measures that would minimize any unavoidable significant adverse environmental impacts of the reasonably foreseeable methods of compliance.

(23 CCR, § 3777(b)(4).)

The SED does not include the disclosure or analysis required by section 3777. Instead of disclosing and analyzing all reasonable methods of compliance, the SED assumes a single method of compliance and analyzes only this single method. Further, the method of compliance assumed by the SED is not reasonable.

(a) Appendix H Does Not Satisfy Section 3777.

Appendix H purports to satisfy the requirement to identify and evaluate the environmental impacts of reasonably foreseeable methods of compliance. It does not do so. Appendix H explains its approach by stating:

> The methods described in this section are aimed at obtaining alternative supplies to replace surface water that may no longer be available due to implementation of an LSJR alternative.

(Appendix H, at 5.) Thus, by its own admission, the SED has confused identifying reasonable methods of compliance with potential mitigation measures for impacting surface water supplies. Simply naming a few ways in which reliance on surface water can be lessened or otherwise mitigated is not the same as identifying the reasonable methods of complying with the LSJR Flow Objective. Methods of compliance would describe the methods by which water users and water storage facilities would operate to achieve the LSJR Flow Objective. Although the four "methods" identified in Appendix H may be a part of such operations, they are not, by themselves, methods of compliance.

Further, even if the mitigation measures offered in Appendix H were methods of compliance, which they are not, Appendix H fails to analyze the environmental impacts of these methods of compliance. For example, Appendix H does not include any analysis regarding how each of these methods would affect the protection of fish and wildlife, water delivery, hydropower generation, groundwater supplies, the regional economy, or agriculture. Appendix H must be completely revised to identify and evaluate the environmental impacts of all reasonable methods of compliance.

(b) <u>The SED Fails to Identify a Single Method of Compliance for Which it Performs Environmental Analysis</u>.

The SED does not specifically identify any method of compliance. Not only does it fail to identify all the reasonably foreseeable methods, the SED fails to identify the one method of compliance upon which its environmental analysis is based. There are four "methods of compliance" listed in Appendix H, yet there is no section of the SED that explains or otherwise identifies the method of compliance assumed for the SED's environmental analysis. Because the method of compliance assumed for the purpose of the SED's environmental analysis is not identified and explained, it is difficult to understand how the SED assumes stakeholders will comply with the proposed project. This violates the most fundamental requirements of CEQA,

which require the SED to disclose sufficient information to facilitate environmental analysis. The SED must be revised to identify the method of compliance assumed for the purpose of its environmental analysis.

(c) The SED Analysis is Based on a Single Method of Compliance which is Unreasonable.

After significant investigation into the water and hydrogeneration models and the assumptions and model inputs, it appears the SED assumed the following method of compliance:

- Annual water delivery quantities would be determined based on reservoir storage levels on January 31. (SED, at 5-57.)
- Water delivery would be reduced in order to maintain reservoir levels. (SED, at 5-58.)
- Water delivery reduction would not be affected by water right priority.
- Water delivery reduction would not be proportional, but depend on crop type.
- Water delivery would be made based on the proposed project, which would negate all existing requirements. (SED, at 5-58.)

The method of compliance assumed by the SED is not reasonable. No water delivery system would determine annual water delivery based on looking at reservoir storage on a single day. Instead, water delivery would depend largely on the hydrology at various points throughout the year and delivery assessments would be made and adjusted in response thereto. Further, even if it were reasonable to base annual delivery upon a single date, January 31 is not a reasonable date to choose. The San Joaquin River system is a snow-melt system; the San Joaquin River Tributaries receive most water from snow melting in the Sierra Mountains rather than precipitation or rainfall. Because the tributaries are fed by snow-melt, the hydrologic distribution provides most water to the system starting in April and May, which means most of the water in the basin does not arrive until well after January 31. For this reason, it is not reasonable to determine the water delivery for the entire year based on reservoir storage levels on January 31.

It is not reasonable to assume water delivery would be sacrificed in order to maintain reservoir levels. Reservoirs are water storage tools. It is reasonable to assume that in times of shortage reservoir operations would be used more aggressively, i.e. empty and fill more often. It is not reasonable to assume that in times of shortage (or in response to regulatory shortages) reservoirs would not be exercised aggressively, but instead water delivery would be decreased in order to avoid reservoir fluctuation or to maintain reservoir levels.

It is not reasonable to assume water delivery would be reduced evenly across the region regardless of water right priority. The rules of water right priority require junior water users be curtailed completely before senior water right holders are affected. (*El Dorado Irr. Dist. v. State Water Resources Control Bd.* (2006) 142 Cal.App.4th 937, 963-964.) Therefore, the assumption that the proposed reductions would affect all water right holders similarly is unreasonable. It is reasonable to assume that the rule of water right priority would apply and result in the proposed regulations having greatly different impact on junior water right holders compared to senior water right holders.

It is not reasonable to assume water delivery would be reduced by crop type. For the reasons stated in the paragraph above, water delivery would be reduced across the region based on water right priority, not crop type. Further, it is not reasonable to assume water delivery would be reduced by crop type among various water users under a single water right. The Irrigation Districts hold water rights and distribute water throughout District service areas to various agriculture, domestic, industrial, and other uses. Each Irrigation District has water shortage policies, which regulate the allocation of water when the demand for water is higher than the supply. None of the Irrigation District shortage policies allow for distribution based on crop type. Instead, the policies prioritize specific beneficial uses over others and call for proportional reduction across each use type. Therefore, it is reasonable to assume that Irrigation Districts will deliver water proportionally to each agricultural water user. It is not reasonable to assume Irrigation Districts would deliver water based on the type of crop grown.

Finally, it is not reasonable to assume the proposed project would replace existing requirements and the biological opinions would be ignored. Biological opinions require certain operations on the Stanislaus River. OID and SSJID are public agencies charged to operate in accordance with the law. For this reason it is reasonable to assume the OID and SSJID, as well as the USBR, would divert water pursuant to the biological opinion requirements and it is not reasonable to assume they would not comply. Because the environmental analysis in the SED is based on a single method of compliance which is not reasonably foreseeable, the State Water Board has not proceeded in the manner required by law.

(d) The SED Fails to Identify or Analyze Other Reasonably Foreseeable Methods of Compliance.

Unlike the method of compliance employed by the SED, there are several methods of compliance that are reasonably foreseeable. The SJTA met with State Water Board staff several times after the State Water Board released the draft appendices to the SED and discussed at lenth the operational constraints in the plan area. After the meetings, the SJTA followed up with staff by providing written communication further describing reasonable methods of compliance. The methods of reasonable compliance include, but are not limited to: exercising reservoirs aggressively, updating water delivery based on hydrologic events, prioritizing water delivery over reservoir storage, including upstream reservoir contributions, pumping groundwater, increasing water conservation, increasing water use efficiency, deliver water pursuant to the rules of water right priority, among other practices historically relied upon by regional irrigation districts during drought or water shortage periods. The SED should be revised to identify and evaluate the environmental impacts of the proposed project based on these methods of compliance.

(9) The SED Failed to Properly Consider Cumulative Impacts.

The SED is required to analyze whether the proposed project together with other past, present, and reasonably foreseeable probable future projects, result in significant environmental impacts. (Pub. Resources Code, § 15355.) The purpose of the cumulative analysis is to evaluate whether a project impact that is not significant in and of itself is significant when viewed together

with other past, present or future projects. (Pub. Resources Code, § 15064.) Thus, to meet the cumulative analysis requirement, the SED is required to (a) identify past, present, and reasonably foreseeable future projects, (b) analyze whether the combined effects from the proposed project and the other projects would result in significant adverse environmental impacts; and (c) determine whether the proposed project's incremental effects are cumulatively considerable. (*Communities for Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98.)

The SED does not satisfy the cumulative analysis requirement. In Chapter 16, the SED identifies the past, present, and reasonably foreseeable future projects. Chapter 16 provides a summary table of the cumulative impacts of these projects. (SED, at 16-16.) However, Chapter 16 does not analyze whether the combined effects of the proposed project and other projects will result in significant adverse environmental impacts. Instead, Chapter 16 states that the cumulative analysis for each resource is performed separately and can be found at the end of each chapter (*Id.*, at 16-1.). Unfortunately, the end of each resource chapter only provides unsupported conclusions regarding cumulative impacts; no analysis of potential cumulative impacts is provided. For example, the cumulative impacts section of the Aquatic Resources Chapter is less than four pages. (*Id*., at 7-126 to 7-129.) This section is supposed to disclose the impacts of all past, present, and future projects on fish and wildlife. However, the section does not discuss any specific project at all. Instead, it makes the general observation that fish species have been affected by human development. (*Id*., at 7-126.) This is not sufficient to comply with the cumulative analysis requirement; it does not identify or analyze the impact of the proposed project in conjunction with other existing projects.

Perhaps most egregious, the cumulative impacts section on aquatic resources makes no mention of the SJRRP. (SED, at 7-127 to 7-129.) Earlier in the Aquatic Resource Chapter, the SED dedicates significant attention to water temperature and the impact warm waters have on fish and wildlife. (*Id.*, at 7-85 to 7-89; 7-117 to 7-119.) The SJRRP will release water that does not comply with temperature requirements into the San Joaquin River. Despite this release, and the potential of some of the alternatives evaluated in the SED to affect temperature, the SED fails to evaluate whether the combined effects will be cumulative.

Additionally, the SED fails to determine whether the proposed project's incremental effects are cumulatively considerable. This is largely predicated on the fact that the SED fails to perform the foundational analysis of whether a cumulative impact exists in the first instance. Without performing the original analysis, the next step of further refining that analysis to determine whether the incremental effects are cumulatively considerable is not possible. Because the SED does not analyze the cumulative effects of the proposed project, the State Water Board has not proceeded in the manner required by law.

(10) The State Water Board Did Not Set Forth a Process to Obtain Information in a Manner Required By Law.

The State Water Board is required to include all information, comments, or proposed findings relevant to the proposed project or the State Water Board's compliance with CEQA. (Pub. Resources Code, § 21167.6.) The State Water Board originally noticed it planned to prepare an environmental document to review of the San Joaquin River flow and south Delta salinity requirements on February 13, 2009. In this 2009 NOP, the State Water Board set up a schedule to hold several workshops for the purpose of collecting information required to perform the environmental review. These workshops were subsequently cancelled; the State Water Board did not provide a reason for the cancellation. Despite repeated requests and recommendations from stakeholders, the State Water Board failed to hold a single informational workshop or otherwise provide a forum to collect sufficient information upon which a defensible environmental analysis could be conducted.

In addition, the State Water Board did not hold a single scoping meeting or other informational hearing in the area affected by the proposed project. Nor did State Water Board staff contact the water right holder or Irrigation Districts in the affected area to inquire about existing information, operations, or other local information necessary to draft the SED. Despite the lack of State Water Board outreach, the SJTA provided State Water Board staff over 650 pages of information and met with State Water Board staff several times upon SJTA request.

The SED does not include information submitted by stakeholders in the Phase 1 process. The SED does not address the information in any fashion. It does not identify the information and reject it as prejudicial or incorrect. Nor does the SED incorporate the information into its analysis. Instead, the State Water Board completely ignored the information provided by the regulated community.

On or about January 24, 2012, the State Water Board provided the public with notice that it planned to develop an environmental document to analyze the impacts of the remaining objectives in the Bay Delta Plan. In order to collect sufficient information to conduct that environmental review, the State Water Board set up a series of workshops. The State Water Board hired an independent facilitator and held workshops over a period of three months. The independent facilitator then drafted a report summarizing the workshops.

The SJTA requested the information from the Phase 2 workshops be included in the administrative record for Phase 1. The State Water Board affirmed they would include the information from the Phase 2 workshops in the administrative record for Phase 1. However, the SED fails to include the information from the Phase 2 workshops. Without the inclusion of information from Phase 1 or Phase 2, the SED is not supported by the administrative record. Due to the lack of process and the SED's failure to analyze information in the administrative record, the State Water Board has not proceeding in a manner required by law.

(11) <u>The SED Fails to Identify Local Agencies as Responsible Agencies and Has Failed to Properly Consult with Local Agencies</u>.

CEQA defines a "responsible agency" as "a public agency, other than the lead agency, which has responsibility for carrying out or approving a project." (Pub. Resources Code, § 21069; *See also* 14 CCR, § 15381.) Pursuant to this definition, the Irrigation Districts qualify as responsible agencies because they will be primarily responsible for carrying out the LSJR Flow objective. (*See* Appendix K, at 2-3 [noting that each LSJR tributary will be responsible for 35 percent unimpaired flow].)

As the lead agency, the State Water Board is required to consult with responsible agencies prior to determining whether the lead agency may perform a negative declaration or will be required

to perform a more rigorous environmental review. (Pub. Resources Code, § 21080.3(a).) The lead agency must also solicit comments from responsible agencies regarding the choice and content of environmental documents. (Pub. Resources Code, §§ 21080.4(a) [requiring solicitation of comments on "the scope and content of the environmental information that is germane to the statutory responsibilities of that responsible agency" when the lead agency determines an environmental impact report is required for the proposed project]; 21104(a) [requiring consultation with, and solicitation of comments from, responsible agencies prior to completing an environmental document]; *See also* 14 CCR, §§ 15082(a), 15086.)

The State Water Board did not comply with these consultation requirements. Neither the State Water Board nor State Water Board staff consulted with the Irrigation Districts regarding the extent or content of environmental review. Quite the opposite, the State Water Board put all communication and information provided by the Irrigation Districts into a folder titled "Unsolicited Comments." Thus, the State Water Board concedes it did not solicit the participation and comments of responsible agencies. The State Water Board's failed to proceed in the manner required by law; the lack of consultation and communication with responsible agencies violates CEQA requirements.

(12) The SED Fails to Properly Consider Mitigation Measures.

The State Water Board is precluded from approving a proposed project with significant environmental effects if "there are feasible alternatives or mitigation measures" that could substantially lessen or avoid those effects. (23 CCR, § 3777(b)(3); Pub. Resources Code, § 21002; *Citizens for Quality Growth v. City of Mount Shasta* (1988) 198 Cal.App.3d 433, 439 ("*Mount Shasta*"); *Mountain Lion Foundation v. Fish & Game Commission* (1997) 16 Cal.4th 105, 134.) For each significant impact, the SED must identify specific mitigation measures. Where several potential mitigation measures are available, each should be discussed separately, and the reasons for choosing one over the other should be stated. (*Id*.) If the inclusion of a mitigation measure would itself create new significant effects, these too, must be discussed, though in less detail than that required for those caused by the project itself. (*Sacramento Old City Assn. v. City Council* (1991)

229 Cal.App.3d 1011, 1027 ("*SOCA*"); *Mount Shasta*, at 439; 23 CCR, § 3777(b)(3); Pub. Resources Code, § 21002.) The SED has not provided the requisite mitigation analysis.

(a) The SED Summarily Dismisses Feasible Flow Mitigation.

In considering mitigation measures, the SED summarily dismisses the consideration of flow as a mitigation measure. (SED, at 7-116.) Specifically, the SED states that because other alternatives consider various percentages of unimpaired flow, the SED cannot "independently apply" additional flow as mitigation because it would be "inconsistent with the terms" of the alternative. (*See* SED, at 7-116.) This rationale is unsupported.

First, the SED does not state that it is not feasible to consider additional flow, only that it would be inconsistent with the alternative. This is not a sufficient reason for failing to consider additional flow. Second, the statement that other alternatives consider additional flow is only true in terms of percentages of unimpaired flow. There are several flow measures that the SED does not consider including, but not limited to, pulse flows, highly variable flow regimes, outmigration flows, and flow regimes by water year type. Because the SED fails to properly evaluate flow as mitigation measures, the State Water Board has not proceeded in a manner required by law.

(b) The SED Fails to Consider Feasible Non-Flow Mitigation Measures.

The SED does not properly consider non-flow mitigation measures. For example, the SED concludes that LSJR Alternative 2 would have significant impacts on aquatic resources because it would reduce Stanislaus River flows, thereby increasing thermal stress on salmonids and prey vulnerability. (SED, at 7-116.) The SED fails to properly analyze potential mitigation measures for increased prey vulnerability. For instance, the SED fails to evaluate a predator suppression program as a mitigation measure. By not considering predator suppression, the State Water Board has not proceeded in a manner required by law.

In Chapter 7, the SED lists four potential mitigation measures: modification of in-river gravel pits, creation of floodplain habitat, gravel supplementation, and reestablishment of riparian vegetation on floodplains. The SED concludes in-river gravel pits are too expensive. (SED, at 7-116.) The SED does not provide citation, analysis, or other support for this conclusion. The SED

concludes that gravel supplementation may reduce exposure to predators, but it has not been demonstrated as effective in reducing predation. (SED, at 7-116.) The SED does not discuss the other two mitigation measures related to floodplain and riparian habitat at all; no analysis, no mention, no further discussion other than listing as potential mitigation measures. The mitigation sections in each chapter of the SED are similar; mitigation measures are not identified or evaluated and the mitigation that is disclosed is not properly analyzed or supported. Because the SED does not include sufficient mitigation analysis, the State Water Board has not acted in a manner prescribed by law.

(13) The SED Fails to Adequately Analyze the Environmental Impacts of Climate Change.

The SED fails to analyze the cumulative impacts of climate change. The SED attempts to skirt around the cumulative impacts analysis, stating: "No single project could generate enough GHG emissions large enough to trigger global climate change on its own. Rather, climate change is the result of the individual GHG contributions of countless past, present, and future sources." (SED, at 14-31.) The SED goes on to recognize that because of the global nature of emissions, "climate change is the result of individual CHG contributions of countless past, present, and future sources." (*Id.*) Thus, the State Water Board recognizes the cumulative climate change impacts are considerable. However, the SED fails to include an analysis of these impacts.

For instance, the SED does not consider whether flooding will become more frequent or severe as a result of the increased flow from the proposed project, combined with rising sea levels and earlier snowmelts caused by climate change. Nor does the SED analyze impacts of the proposed project and climate change to reservoir storage or aquatic resources. Because the SED does not analyze climate change impacts of the proposed project, the State Water Board has not proceeded in the manner required by law.

(14) The State Water Board Cannot Adopt Statements of Overriding Consideration.

If the State Water Board is to approve a project that has significant and unavoidable impacts, it must first adopt a statement of overriding considerations. CEQA requires a statement of

overriding considerations to be supported with substantial evidence that a project will confer benefits. (*Woodward Park Homeowners Ass'n, Inc. v. City of Fresno* (2007) 150 Cal.App.4th 683, 718.) General benefits are not sufficient; the State Water Board is required to perform a good-faith balancing and find the proposed project outweighs significant and unavoidable impacts. (*Id.*) In other words, the State Water Board must explicitly find the fish and wildlife benefit outweighs the significant impacts to groundwater, agriculture, water supply, service providers, and the economy. Because the State Water Board has not identified the proposed project's benefits to fish and wildlife, the State Water Board cannot support such a determination. Without information to support an statement of overriding consideration, the State Water Board will not be able to proceed in a manner required by law.

(15) The SED Fails to Evaluate the Proposed Changes to the October Flow Requirements.

The program of implementation suggests the State Water Board intends to change the responsibility for meeting the October flow objective. (Appendix K, at 3.) However, the State Water Board makes no mention of this reallocation in its environmental analysis. Changing the allocation of responsibility for meeting the October flow objective is not without consequence; it has the potential to impact water supply effects, aesthetics, hydrology, groundwater pumping, and fish and wildlife. A CEQA document "must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Laurel Heights*, at 404-405.) Without analyzing the environmental effects of changing the responsibility to meet the October flow objective, the SED is deficient and the State Water Board has not proceeded in the manner required by law.

B. The SED is Not Supported By Substantial Evidence.

The State Water Board must support its conclusions, findings, or determinations with substantial evidence. (*Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 595-596; *See* Pub. Resources Code, § 21168.) Substantial evidence requires "enough relevant information and reasonable inferences from [the information in the administrative record] that a fair

argument can be made to support a conclusion." (*Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1198 [*quoting Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 139]).) Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinions supported by facts. In contrast, argument, speculation, unsubstantiated opinion or narrative, or evidence which is clearly inaccurate or erroneous does not amount to substantial evidence. (Pub. Resources Code, § 21082.2(c).) Much of the analysis in the SED is not supported by substantial evidence, including the sections described below.

(1) The Water Supply Effects Model is Not Supported by Substantial Evidence.

The Water Supply Effects ("WSE") Model is the basis of the environmental analysis in the SED. The WSE Model estimates how the proposed project will affect surface water supply and reservoir storage. As more fully described in section V(A)(8)(c), entitled "The SED Analysis is based on a Single Method of Compliance which is Unreasonable," above, the WSE Model is based on a series of operational assumptions that are not currently being used, have never been used, and will never be used. The operational assumptions ignore the hydrologic system, the water storage system, the rules and policies of the irrigation districts, and the laws of the state of California.

This section is not going to repeat each place the WSE Model renders the SED analysis deficient. The defects from the WSE Model are so fundamental and pervasive they undermine the entire basis of the SED. Because of the pervasive nature of the WSE Model defects, the SED is not supported by substantial evidence.

(2) Evaluation of the Impacts to Agriculture Are Not Supported by Substantial Evidence.

The SED uses the SWAP Model to evaluate the impacts of the proposed LSJR Flow Objective on the agricultural sector. The SWAP Model is driven by the water supply effects results from the WSE Model. (SED, at 11-16.) Therefore the defects of the WSE Model are embedded into the SWAP model. These defects alone result in the SWAP model failing to be supported by substantial evidence.

In addition to the deficient WSE Model input data, SWAP has other deficiencies as well. The SED describes the SWAP Model as follows:

> SWAP model is an agricultural production model that simulates the decisions of farmers at a regional level based on principles of economic optimization. The model assumes that farmers maximize profit (revenue minus costs) subject to resource, technical, and market constraints. The model selects those crops, water supplies, and irrigation technology that maximize profit subject to these equations and constraints. The model accounts for land and water availability constraints given a set of factors for production prices, and calibrates to observed yearly values of land, labor, water and supplies use for each region.

(Appendix G, at 14.) There are several fundamental problems with the SED's application of SWAP which preclude the resulting analysis from being supported by substantial evidence.

(a) The Large Geographic Region Dilutes the Localized Environmental Impact.

The SWAP Model estimates agriculture impact based on units of land. These units do not match up with the plan area of the proposed project. The SED uses SWAP Model units 11, 12, and 13 to estimate the impacts of the proposed project because these units mostly include the plan area of the proposed project. (SED, at 11-17.) However, these units are large and include a huge amount of farm acreage that is outside the plan area. Units 11, 12, and 13 include approximately 1,154,200 acres of qualifying farmland, whereas, the plan area includes only 530,825 acres of qualifying farmland. (*Id.*, at 11-17 to 11-18.) The acreage of qualifying farmland becomes even smaller under the SED analysis, which takes the position that operations on the Stanislaus River will not be affected by the preferred alternative. (*Id.*, at 11-24.) Thus, if the SED analysis regarding impacts on the Stanislaus is to be believed, the impacts of the proposed project will be localized to 319,000 acres of qualifying farmland acreage in the Modesto, Turlock, and Merced Irrigation District service areas.

The SED analysis does not adjust or otherwise calibrate the SWAP Model results to evaluate the environmental impact of agriculture using the localized acreage. Instead, the SED analysis is based on the much larger SWAP unit acreage. (SED, at 11-17.) This approach is inconsistent with the other analysis in the SED. In addition, spreading the impact over such a large area results in a

significant dilution of the environmental impact and fails to evaluate the true impact to local agricultural communities. For example, the SED concludes the proposed project will only fallow 11 percent of qualifying farmland. (SED, at 20-25.) However, this conclusion is based on the larger SWAP area acreage. Applying the estimated reduction of irrigated agriculture to the localized area impact, the proposed project would fallow more than 40 percent of qualifying farmland in the affected project area in an average year. The environmental impact of fallowing 40 percent of qualifying farmland is much different than the impact of 11 percent. The SED must disclose and analyze the true localized nature of the impact. Because the analysis is diluted, it is not supported by substantial evidence.

(b) The Low Value Crop Assumption is Not Implementable.

The SWAP Model assumes farmers will fallow only low value crops in response to water reduction, while high value crops will not be impacted. This assumption is problematic for several reasons. First, it is contrary to the local policies and rules on water shortage. The Irrigation Districts in the plan area each have shortage provisions which require the districts to proportionally reduce water deliveries to the agriculture sector. This means that a farmer growing 100 acres of alfalfa and a farmer growing 100 acres of vines are reduced the same amount in times of water shortages. Thus, fallowing low value crops may be a good idea in theory, but in practice it will not occur.

Second, the assumption is contrary to the rules of water right priority. The low value crop assumption is made over the entire SWAP unit area. Therefore, the SWAP Model assumes that over the entire unit areas 11, 12, and 13, all low value crops will be reduced before higher value crops. Across these unit areas water is provided under several different water rights, held by different irrigation districts and different individuals. Amongst these different water rights, there are junior and senior water right holders. The rule in California is that junior water right holders must cease all water use before a senior water right holder is required to curtail diversions. (*El Dorado Irr. Dist. v. State Water Resources Control Bd.* (2006) 142 Cal.App.4th 937, 963-964.) This priority system applies regardless of crop type. The priority system requires a junior water right holder growing almonds to curtail water use before a senior water right holder growing alfalfa. Therefore, the rule of

water right priority is inconsistent with the assumption that low value crops will be fallowed before high value crops. Because the assumption that low value crops will be fallowed and high value corps will not be affected violates district rules and water right priority rules, the analysis based on this faulty assumption is not supported by substantial evidence.

(c) The Low Value Crop Assumption Impacts High Value Crops.

The SED assumes that low value crops can be fallowed throughout the region without impacting high crop values. This assumption is unfounded. The low value crops of corn, alfalfa, and pasture are used to support the high value agriculture land use of dairy and cattle farming. Without the local supply of low value feed crops, the dairy and cattle industries will be adversely impacted. The SED does not identify or analyze the impact of eradicating low value crops on the dairy and cattle industries. Because this analysis is not included in the SED, the SED is not supported by substantial evidence.

(d) The SED Overestimates the Amount of Low Value Crops in the Region.

A problem that results from the two issues described above is that the large geographic SWAP units overestimate the amount of low value crops. The SED estimates there are 140,550 acres of corn, 44,667 acres of field crops, 63,479 acres of pasture, and 4,340 acres of rice existing in units 11, 12, and 13. (SED, at 11-25.) From the estimated acreages, the SED concludes the proposed project would fallow 99 percent of rice, 73 percent of pasture, 85 percent of field crops, and 28 percent of corn. (*Id.*, at 11-25.) However, the actual acreage of these low value crops in the impacted plan area is far less than the acreage in the SWAP unit area. Because the SED overestimates the acreage of low value crops, it fails to evaluate the economic impact from fallowing higher value crops. The SED must identify the much lower acreage of low value crops available and evaluate the resulting environmental impact from having to fallow higher value crops. Because this analysis is not included in the SED, the SED is not supported by substantial evidence.

(3) The Evaluation of the Impacts to Aquatic Resources is Not Supported by Substantial Evidence.

Chapter 7 analyzes the proposed project's impact to aquatic resources. The analysis is deficient for two reasons. First, the SED fails to identify the level of protection the proposed project will have on aquatic resources. The SED does not even attempt to provide a qualitative assessment of the proposed project's benefits to aquatic resources. Instead, the analysis makes a sweeping generalization that flow will benefit fish. (SED, at 7-30) This sweeping generalization is not supported by citation, science, reports, modeling, or other necessary validation. In addition, this sweeping generalization is not supported by sufficient analysis. In order to provide sufficient information for meaningful environmental review, the SED must estimate (a) the impact of the proposed project on flow-related mechanisms (such as impact on temperature, velocity, turbidity, dissolved oxygen, predation, among other stressors); and (b) how the projected improvement to the stressor will affect fish populations. The SED does not include either analysis and therefore is devoid of any analysis linking increased flow to fish benefit. This missing analysis renders the SED unsupported by substantial evidence.

Second, the conclusion that the 20 percent alternative will have significant impacts to aqutic resources is not supported. The aquatic resources analysis assumes the 20 percent unimpaired alternative on the Stanislaus River will reduce flows. This assumption is due to the SED's incorrect baseline, which fails to include existing Stanislaus River flow requirements. The State Water Board's adoption of a 20 percent unimpaired flow would not actually reduce flow on the Stanislaus River; the water users on the Stanislaus River will be required to comply with the BO requirements regardless of the proposed project. Because the SED conclusion that 20 percent unimpaired flow would result in significant adverse impacts to aquatic resources is based on the faulty assumption that the regulation would lower flows on the Stanislaus River, this analysis is not supported by substantial evidence. It is worth noting that the SED analysis concludes the only significant impacts to aquatic resources will occur on the Stanislaus River from the 20 percent unimpaired alternative, due to the faulty assumption that flows will be reduced.

(a) The Evaluation of the Proposed Project's Impact on Coldwater Pool Storage is Not Supported by Substantial Evidence.

The SED fails to properly analyze the proposed project's impacts to coldwater pool storage. This failure is due to the WSE Model assumption that reservoir storage will remain unaffected by the proposed project. This assumption is not supported. The absurdity of this assumption is demonstrated by the SED analysis of Alternative 3 and 4 on coldwater pool storage. The SED analyzes the effect of the 40 percent unimpaired flow on reservoir storage levels at Lake McClure, New Melones and New Don Pedro. (SED, at 7-66.) The SED concludes that a requirement of 40 percent unimpaired flow would actually increase storage at Lake McClure and would not decrease reservoir storage at New Melones or New Don Pedro. (*Id*.) At the 60 percent unimpaired flow level the SED determines storage at New Melones would increase slightly, storage at New Don Pedro would remain at existing levels and Lake McClure would see a slight decrease of one percent in storage levels. (*Id*.) Therefore, the SED's coldwater pool analysis concludes that despite the large amount of water that will be required to be dedicated to instream uses from the tributaries, the storage levels of the rim dams on these tributaries will remain unchanged, and at times increase. This conclusion is contrary to common sense, based entirely on the assumption that reservoir storage will remain constant, and is not scientifically supported. For this reason, the cold water pool analysis is not supported by substantial evidence.

(b) The Evaluation of the Proposed Project's Impact on Juvenile Rearing and Outmigration Flows on the Stanislaus River is Not Supported by Substantial Evidence.

The SED concludes that 20 percent of unimpaired flow would have significant adverse impacts on rearing and outmigrating salmon on the Stanislaus River. (SED, at 7-74.) The SED states that the 20 percent of unimpaired flow requirement is lower than the baseline flow requirement on the Stanislaus and "consequently there would likely be insufficient water available in most years to adaptively manage flows to improve spring flow for outmigrating salmonids." (*Id*.) This conclusion is not supported for many reasons.

First, as noted earlier, the adoption of a 20 percent unimpaired flow regulation would not lower flows on the Stanislaus River. Second, having lower flows than currently exist does not alone support the conclusion that there will be insufficient flows for outmigration. Third, the SED fails to identify the quantity of flow needed to "improve spring flow for outmigrating salmonids." Without this information it is difficult to support any conclusion that there is not sufficient outmigration flow.

Fourth, the SED does not differentiate between rearing and outmigration flows. Optimal rearing flows have different attributes (timing, quantity, temperature, velocity) than outmigration flows. (Appendix C, at 3-18 to 3-19.) By lumping the two together, the SED is unclear and this section becomes contradictory.

Fifth, the SED does not explain the population level impacts rearing or outmigration flows will have on salmonids. Without this explanation or context, it is difficult to determine significance; if the lack of rearing flows is estimated to improve salmon populations by one percent, these flows may not be significant; however, if the rearing flows are estimated to improve salmon populations by 100 percent, the lack of flow necessary to support rearing is likely to be significant. For these reasons, the finding of significance is not supported by substantial evidence.

(c) <u>The Evaluation of the Proposed Project's Impact on Juvenile Rearing and Outmigration Flows at Vernalis is Not Supported by Substantial Evidence</u>.

The SED concludes that 20 percent of unimpaired flow would have significant adverse impacts on rearing and outmigration flows at Vernalis. (SED, at 7-76.) The SED supports this conclusion with the following sentence:

> Based on historical relationships between spring flows at Vernalis, abundance of smolts entering the Delta, and survival of smolts through the Delta, lower spring flows in the SJR at Vernalis under Alternative 2, especially in April, would be expected to reduce smolt abundance and survival to the estuary.

(SED, 7-76.) Despite the reference to historical data, the SED does not provide any citation to support this sentence. In addition, the *expectation* that spring flows may reduce smolt abundance and survival is not sufficient to support a finding of significant impact. Without understanding the

extent to which abundance and survival is "expected" to be reduced, the SED cannot make a finding of significant impact. For this reason, the finding of significance is not supported by substantial evidence.

(d) The Evaluation of the Proposed Project's Impact on Temperature is Not Supported by Substantial Evidence.

The SED concludes that 20 percent unimpaired flow would result in significant and unavoidable impacts on temperature, but that 40 and 60 percent of unimpaired flow would not result in significant impacts to temperature. Neither of these conclusions is supported by substantial evidence.

The SED makes sweeping conclusions that generally more flow will result in lower temperatures. (Appendix C, at 3-51.) This sweeping conclusion is not supported. The release of cold water can lower ambient water temperatures in certain circumstances for limited distances. However, depending on ambient air temperature and the temperature of the released flows, flow releases may not lower, but rather, increase temperatures. Without an analysis of the relationship between ambient air temperature and the temperature of the released flows, the SED's analysis is inadequate.

In addition, the sweeping conclusion is not sufficient to support a determination of significance. The SED does not provide any analysis regarding the relationship between the proposed project and the impact on temperatures. Nor does the SED provide any analysis, even at a qualitative level, of the impact temperature will have on salmon abundance or survival. Therefore, the SED does not provide any guidance as to the quantity of flow necessary to lower temperatures, the general amount that temperature will improve from increased flows, or the impact temperature has on fish abundance or survival. Without this information, the conclusion of significance is not supported by substantial evidence.

(e) The Evaluation of the Proposed Project's Impact on Predation is Not Supported by Substantial Evidence.

The SED concludes that the 20 percent alternative on the Stanislaus River would result in significant impacts caused by predation. (SED, at 7-115.) The SED makes the assertion that

predation is correlated with flow, stating that "predation appears to be a function of river flow, and high predation rates result from lower flows when smolts and predators are concentrated into a smaller volume of water." (*Id.*, at 7-115.) This conclusion is unsupported.

The SED cites Bowen and Bark (2010) ("Bowen Study") in support of the idea that predation is a function of flow. (SED, at 7-115.) However, the Bowen Study does not support this conclusion. First, the Bowen Study does not support the link between flow and predation. Instead, the Bowen Study guesses that the low flows of a single year "might" concentrate predators, which "could" increase predatory encounter rates. (Bowen Study, at 26.) This supposition does not support the SED's conclusion that predation is a function of flow.

Second, the Bowen Study is not a report on predation. The Bowen Study is a draft report compiled by the Bureau of Reclamation entitled "2010 Effectiveness of a Non-Physical Fish Barrier at the Divergence of the Old and San Joaquin Rivers (CA)." The Bowen Study has not been subject to peer review and the purpose of the Bowen Study was to "design, implement, and monitor a non-physical barrier called the Bio-Acoustic Fish Fence (BAFF)." (Bowen Study, at 1.) Thus, the SED draws its conclusion that lower flows lead to higher predation from a study, the primary purpose of which was not to analyze predation, but rather to determine whether a non-physical barrier would cause migrating fish to take a less precarious route on their way to the ocean.

Third, the Bowen Study is based on only two years of data. This is an incredibly small sample of data and is insufficient to support any scientific conclusions regarding predation.

In opposite to the SED's conclusion, the existing science indicates predation is unaffected by flows. VAMP reports have been issued from 2000 to 2011. During this period, there have been wet, normal and dry years. Despite the varying year types, the VAMP reports have shown a continuing increase in predation. The 2011 VAMP report reflects the highest predation rate of 98 percent, yet 2011 was a very wet year. Thus, on the LSJR system, predation is not a function of flow.

(f) The Evaluation of the Proposed Project's Impact on Disease is Not Supported by Substantial Evidence.

The SED determines that a 20 percent unimpaired flow requirement would result in significant impacts to disease risk on the Stanislaus River. This determination is based on the sweeping conclusions that generally more flow will result in lower temperatures and lower temperatures will minimize disease. (SED, at 7-119.) These sweeping conclusions are not supported.

First, as noted earlier, the adoption of a 20 percent unimpaired flow regulation would not lower flows on the Stanislaus River. Second, the SED provides no citation or scientific support for the conclusions. The SED states that projected increase in temperature is "expected to substantially increase the incidence of disease." (SED, at 7-119.) There is no citation to the record, a report, a journal, or any other support for this scientific conclusion. The SED does not estimate whether the proposed project will increase water temperature. The SED does not evaluate whether increased temperature will increase disease. The SED does not evaluate whether increased temperatures will deter certain diseases. The SED does not estimate the incidence of disease or the impact disease will have on fish populations. Without this information, it is not possible for the SED to make the determination that the proposed project will have a significant impact on aquatic resources.

Third, the SED analysis is based on eight months - March through October. The project proposes to regulate flows from February to June. This means that four of the eight months analyzed are outside the period of proposed regulation. The SED does not evaluate the impact of temperature change in the regulated period. For these reasons, the SED's analysis of disease risk is not supported by substantial evidence.

(g) The Evaluation of the Proposed Project's Impact on Transport is Not Supported by Substantial Evidence.

The SED determines that the 20 percent unimpaired flow requirement would result in significant impacts to transport on the Stanislaus River. The SED concludes that "lower inflows could result in lower velocities and slower travel times (increased residence time) for juvenile salmonids, and consequently, increased exposure to a variety of environmental stressors (eg.

Predation, contaminants, poor feeding conditions, stressful water temperatures)." (SED, at 7-121.) This conclusion is not supported.

First, as noted earlier, the adoption of a 20 percent unimpaired flow regulation would not lower flows on the Stanislaus River. Second, the SED offers no citation to the record, a report, a journal, or any other support for this scientific conclusion. Third, the SED qualifies the conclusion by stating lower flow "could" affect transport. The SED does not provide further estimation or otherwise attempt to make this potential impact more definitive. The possibility of impact on transport cannot be considered a significant environmental effect.

Fourth, the SED relies on the VAMP reports to support the general premise that increased inflows to estuaries, along with increased down-estuary net current velocities, decrease juvenile salmon travel times. (SED, at 7-121.) The SED does not explain how this information provides support for non-estuary salmon transport through the tributaries. Nor does the SED address how increased flows, without the down-estuary net current velocities, affect transport.

Fifth, the analysis on transport concedes that transport only affects the impacts of other stressors on fish and does not affect fish populations directly. (*Id*., at 7-121.) For this reason, the transport analysis is duplicative and does not analyze an impact to fish populations not already analyzed in the SED.

Sixth, the SED does not estimate the effect transport will have on fish populations. Without this information it is not possible for the SED to make the determination that it will have a significant impact on aquatic resources. For these reasons, the SED's analysis of transport is not supported by substantial evidence.

(4) <u>The Evaluation of the Proposed Project's Impact on Groundwater is Not Supported by Substantial Evidence</u>.

The SED concludes that proposed project will have significant and unavoidable impacts on groundwater. The SED's analysis of impacts is deficient because it lacks support of substantial evidence and is internally inconsistent.

(a) The SED Does Not Accurately Describe the Groundwater Baseline Conditions.

The SED fails to accurately describe the baseline groundwater conditions. For example, the SED stated the Eastern San Joaquin Subbasin "appears to have a greater overdraft condition." (SED, at 9-10.) This statement is not correct. The Eastern San Joaquin Subbasin has continuously declined over the last 40 years with an estimated loss of 2 million acre feet. (California's Groundwater Bulletin 118, at 3.[1]) The impacts of the proposed project will affect this sub-basin significantly. Conditions will be significantly exacerbated when no surface water deliveries are available to compensate for urban and agricultural water demands. The SED does not identify the baseline reliance or evaluate the impacts of the proposed project based on the varied reliance within the project area; certain regions are more reliant on groundwater than others. The SED must accurately describe each groundwater basin potentially affected by the proposed project and identify the regional reliance on each groundwater basin in the description of the groundwater baseline.

(b) The SED Fails to Analyze Recharge Impacts of the Proposed Project.

The SED is not supported by substantial evidence because it does not analyze the proposed project's impact to groundwater recharge. The regional groundwater basins receive substantial recharge from surface water applied to crops. The SED recognizes the proposed project will reduce the surface water applied to crops; however, the SED does not analyze the environmental impact on the regional groundwater basins. (SED, at 9-9 to 9-10.)

For example, the SED recognizes there is significant groundwater recharge in the Turlock sub-basin and seepage from unlined water conveyances. (SED, at 9-9.) The proposed project will significantly cut deliveries for agriculture irrigation, which will drastically reduce groundwater recharge. Because the SED did not analyze the impacts from the reduced recharge, the analysis is not supported by substantial evidence.

[1] *Found at* http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/5-22.01.pdf

(c) The SED Mischaracterizes the Proposed Project's Impacts to Groundwater.

The SED states that, "It is not expected that the impact to groundwater resource in these sub-basins would occur at the same time as an impact or reduction to overall water supply." (SED, at 9-26.) This is untrue; impacts occur simultaneously, especially during dry and critical years. For instance, the SED water supply analysis shows a reduction of water to TID and MID of approximately 450,000 acre feet from 1987 – 1995. During these dry and critical years, there is less rainfall to recharge groundwater basins, deliveries are reduced which thereby reduce recharge and seepage, and increased groundwater pumping occurs to compensate for the drought conditions. The result is depletion in overall water supply and groundwater supply. This impact occurs simultaneously and is patently correlated to impacts and reductions in the overall water supply. Because the SED's groundwater analysis is based on faulty assumptions, it is not supported by substantial evidence.

Additionally, the conclusory statement that "more water in the river [would] (recharge) the groundwater basins" is incorrect; the Tuolumne, Merced and San Joaquin Rivers are gaining rivers. (SED, at 9-9) The proposed project would increase flow in the Tuolumne, Merced, Stanislaus and Lower San Joaquin Rivers. However, the San Joaquin River tributaries are gaining rivers, which means percolating groundwater sub-basins actually boost these rivers, rather than take from them. In other words, the regional groundwater basins are not recharged by increased river flow. Therefore, the conclusion that groundwater will be recharged by the proposed project mischaracterizes the system and is not supported by substantial evidence.

(5) The Evaluation of the Proposed Project's Impact on Hydropower is Not Supported by Substantial Evidence.

The SED's evaluation of the proposed project's impact on hydropower is based entirely on results from the WSE Model. (SED, at 14-15.) As more fully set forth above, the WSE Model assumes any reduction from the proposed project will be taken in water deliveries and therefore reservoir storage will remain unaffected. Also as explained more fully above, this assumption is incorrect, unrealistic, and completely without support. One of the absurdities that results from this

unsupported assumption is that the SED concludes the proposed project has almost no hydropower impact. Because the hydropower analysis is based entirely on faulty assumptions that reservoir storage will remain unchanged, it is deficient and unsupported by substantial evidence.

Apart from the fundamental defect of wrongly assuming hydropower will not be affected, the hydropower analysis has other deficiencies as well. First, it fails to properly analyze the impact from shifting the seasonal timing of water releases from reservoirs. Appendix J concedes the proposed project will decrease hydropower generation during the months of July and August because of reduction in reservoir releases during those months. (Appendix J, at 8.) Likewise, the proposed project will increase hydropower generation during the months of May and June due to increased reservoir releases. (*Id*.) However, the SED analysis only evaluates annual hydropower impacts and therefore fails to analyze the impact of shifting hydropower generation from summer to spring.

During summer months, energy demands peak, supply is low and transmission is constrained. This combination makes summer energy more valuable and costly. Spring demand is lower, supply is higher, and transmission is less constrained compared to summer. Thus, the proposed transfer of summer hydropower generation to spring hydropower generation is not without impact. It has the potential to result in increased costs, increased supply problems, and increased capacity issues. Because the SED fails to analyze these impacts, it is not supported by substantial evidence.

Second, the SED fails to consider the cost of replacement energy. The spring season is a high production period for wind and Pacific Northwest hydropower generation which drives down the value and price of energy. The summer months are high demand months with low supply, which drive energy costs up. Thus, the proposed project's shift of hydropower generation from summer to spring will require stakeholders to purchase energy in summer months when it is most expensive. Because he SED fails to consider this cost and the environmental impact therefrom, it is not supported by substantial evidence.

Third, the SED analysis fails to analyze the impact of the proposed project on the reliability of energy statewide. The SED summarily concludes the LSJR alternatives "would not adversely impact the reliability of California's electric grid." (Appendix J, at 25.) However, this conclusion is not supported. The SED does not analyze the proposed project's impact in terms of the intermittent nature of other renewable energy sources such as solar and wind power, the flexibility of hydropower, the value of quick dispatch in times of emergency, and capacity of transmission, among other factors. For example, hydroelectric power can be dispatched within minutes; this must be considered in the context of other resources which are not capable of such control such as wind and solar power. While wind and solar power have low operating costs, neither can be reliably dispatched on short notice during an emergency event or to compensate for over-stressed peak load hours. Hydropower is inexpensive and can be brought online almost instantly. This helps to offset the lag in time to get other sources up and running, provided that other sources (i.e. wind and solar) are available at that time. Because the SED does not include this analysis, the hydropower section is not supported by substantial evidence.

Fourth, the SED incorrectly assumes regional economic effects due to hydropower loss are "virtually imperceptible" when compared to annual statewide electricity production. (SED, at 18-22.) To the contrary, the proposed project will impact the local regions that depend on the hydropower that would be reduced by the LSJR Flow Objective. The region includes hydropower sources that supply only regional customers and do not contribute to the statewide grid. Therefore, the impacts of the proposed project will be much more substantial and concentrated to the project area. The SED misleadingly dilutes the regional effects by spreading the effects statewide, when in fact those effects will be localized. Because the SED fails to analyze the regional hydropower impacts, the analysis is not supported by substantial evidence.

Fifth, the SED fails to evaluate the hydropower impacts on the Governor's Clean Energy Jobs Plan which sets goals for renewable energy to be achieved by 2020. The goals include building 12,000 megawatts of localized electricity generation, and building 8,000 megawatts of large scale

renewables and necessary transmission lines. The SED not only ignores these statewide policies, but jeopardizes the Clean Energy Jobs Plan's objectives by decreasing localized hydropower generation.

(6) The Analysis of Flood Risk is Not Supported by Substantial Evidence.

The SED finds the proposed project will have a less than significant impact on flooding and flood risk. (SED, at 6-25 to 6-26.) The SED's flooding risk analysis, however, is inadequate. The SED's analysis is inadequate for two primary reasons.

First, the SED's evaluation of the proposed project's impact on flood risk is based entirely on results from the WSE Model. (SED, at 6-20.) As more fully set forth above, the WSE Model assumes any reduction from the proposed project will be taken in water deliveries and therefore reservoir storage will remain unaffected. Also, as explained more fully above, this assumption is incorrect, unrealistic, and completely without support. For instance, the SED states, "The same flood control curves and daily operations would be used for actual operations of the three reservoirs under the LSJR alternatives as under the baseline." (*Id.*, at 6-22.) In other words, the SED did not evaluate the impacts of the proposed project on flood control, it simply assumed reservoir storage levels would remain unchanged and there was no analysis to perform.

Second, because the SED relies on the faulty operational assumption of the WSE Model, it fails to evaluate the flood risks that will occur if the proposed project results in increased reservoir fluctuation. For example, the proposed project may increase reservoir fluctuation and alleviate flood risk by increasing the frequency that reservoir levels are low or close to empty. The SED does not disclose or analyze this potential impact.

Third, the SED lacks transparency regarding flood control relief from the proposed project. The SED seems to indicate that the State Water Board has yet to identify the level at which the proposed requirements would cease to apply due to flood control requirements by stating:

> "[T]he percent of unimpaired flow requirement, as specified by a particular LSJR alternative, would cease to apply during high flows or flooding to preserve public health and safety. The State Water Board would coordinate with federal, state and local agencies to determine when it is appropriate to waive the requirements."

(SED, at 6-20.) However, this statement is misleading. The WSE Model includes a specific flood control maximum for each tributary. (Appendix F, at 1-17 [capping flows on the Tuolumne River at 3,500 cfs, the Stanislaus River at 2,500 cfs and the Merced River at 2,000 cfs].) Therefore, the SED is internally inconsistent and misleading; the flood analysis fails to disclose that flood control limits have already been selected and instead states that such limits will be determined at a later date after coordination with appropriate agencies. In reality, however, the WSE Model has already included specific flood control limits for each tributary. These limits were not specifically disclosed and the SED fails to analyze whether the selected limits are sufficient or overly protective of flood risk. For these reasons, the SED's flood risk analysis is not supported by substantial evidence.

(7) The Anti-Degradation Analysis is Not Supported by Substantial Evidence.

Chapter 19 of the SED does not provide adequate analysis of the state and federal antidegradation policies, or draw a conclusion as to whether the proposed water quality objectives comply with the state and federal antidegradation policies. (Water Code, §§ 13140, 13240; Resolution 69-16.) Rather, Chapter 19 only quotes the federal and state antidegradation policies.

(a) The Narrative Objective, Southern Delta Water Quality Objective, and LSJR Flow Objective for Salinity Are Not Consistent With Resolution 69-16.

To show consistency with the State Antidegradation Policy, Resolution 69-16 ("Antidegradation Policy"), the State Water Board must show that the objectives (i) are consistent with the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of water, and (iii) will not result in water quality less than that prescribed in the policies. (Resolution 68-16(1).) The SED does not analyze whether the Narrative Objective, the south Delta salinity objective, or the LSJR Flow Objective are consistent with the Antidegredation Policy.

(i) Narrative Objective.

The existing Narrative Objective calls for a doubling of the natural average salmon population between 1967 and 1991. The proposed Narrative Objective proposes to maintain the natural production of viable native fish populations. The SED does not analyze whether the

protection offered by the new Narrative Objective is more or less protective than the previous salmon doubling objective. Therefore, it is unclear whether the new Narrative Objective is less protective compared to the salmon doubling objective. Without this information and analysis, the State Water Board cannot and has not performed a proper antidegredation analysis.

(ii) Southern Delta Water Quality Objectives for Salinity.

The State Water Board proposes to raise the Southern Delta Water Quality Objectives for Salinity from 0.7 dS/m to 1.0 dS/m during certain times of the year. This would allow for a higher salt content during these times of year, thereby degrading the water quality. While this may be permissible, the State Water Board is required to provide an analysis to demonstrate that it is consistent with the maximum benefit to the people of the state and will not unreasonably affect present and anticipated beneficial use of water. Because the SED does not include the requisite analysis, it is not supported by substantial evidence.

(iii) Lower San Joaquin River Flow Objective.

The existing San Joaquin River Flow Objective protects "the [Bay Delta] Estuary's beneficial uses." (2006 Water Quality Control Plan, at 3.) The proposed project no longer protects the Bay Delta Estuary, but rather seeks to protect only the LSJR. (SED, at ES-1.) Since the amended flow objectives no longer protect the waters of the entire Bay Delta Estuary, this lack of protection may degrade the conditions of those beneficial uses.

The SED fails to analyze what environmental impacts the proposed project will have on the Bay Delta Estuary despite no longer protecting those beneficial uses. This threatens to violate the state's Antidegradation Policy without any analysis or explanation. The 1995 and 2006 Bay Delta Water Quality Control Plans actively sought to protect beneficial uses within the entire Bay Delta Watershed. Further, by explicitly narrowing the geographic scope of beneficial uses protected, the proposed flow objectives will unreasonably affect present and anticipated beneficial uses of water in the entire Bay Delta Estuary which are no longer protected. This violates the Antidegradation Policy.

Because the SED does not analyze whether the proposed project violates the Antidegradation Policy, the SED is not supported by substantial evidence.

VI. The SED Must Be Revised and Recirculated.

An environmental document must be recirculated when significant new information is added after its release to the public. (Pub. Resources Code, § 15088.5(a).) Significant new information includes:

- a new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented;
- a substantial increase in the severity of an environmental impact would result unless mitigation measures area adopted that reduce the impact to a level of insignificance;
- a feasible project alternative or mitigation measure considerably different from others previously analyzed; and
- the draft document was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

(Pub. Resources Code, § 15088.5(a)(1)-(4).)

As the substance of these comments make clear, the revisions necessary to the SED will include increased severity of environmental impact, considerably different project alternatives, and considerably different mitigation measures. For these reasons, the SED will need to be revised and recirculated.

As currently drafted, the SED is fundamentally inadequate. As mentioned elsewhere in these comments, the SED does not analyze the environmental impacts stemming from the Narrative Objective, the program of implementation, methods of compliance, mitigation measures, or a reasonable range of alternatives. The environmental analysis included in the SED is deficient; it is filled with errors, unsupported assumptions, conjecture, internal inconsistencies, and promises to develop appropriate analysis at a later date. Perhaps most importantly, these deficiencies are so fundamental that the SED does not allow for meaningful review of the environmental impacts. For these reasons, the State Water Board is required to redraft and recirculate the SED.

STATE WATER RESOURCES CONTROL BOARD

Draft Substitute Environmental Document In Support of Potential Changes to the Water Quality Control Plan for the San Francisco Bay-Sacramento/San Joaquin Delta Estuary; San Joaquin River Flows and Southern Delta Water Quality	)))))))

SAN JOAQUIN TRIBUTARIES AUTHORITY

Technical Comments on the Draft Substitute Environmental Document

Dated: March 29, 2013

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CHAPTER 1

Section 1.1.

1. The Substitute Environmental Document ("SED") is not clear as to whether the State Water Resources Control Board ("State Water Board") is proposing to establish flows for each of the three eastside tributaries. The SED must be revised to more clearly describe the actions proposed by the State Water Board.

2. The State Water Board provided notice it was reviewing the San Joaquin River Flow Objective, but did not provide notice it planned to create new objectives on the tributaries. If the State Water Board is proposing to develop new flow objectives on the tributaries, it must provide proper notice before doing so.

3. The SED does not disclose the compliance points for the proposed tributary flows. The SED must be revised to describe the compliance points and other basic facts of the proposed project.

4. The SED states the State Water Board will conduct the review of the Water Quality Control Plan for the San Francisco Bay-Sacramento/San Joaquin Delta Estuary ("Bay Delta Plan") in phases, but does not provide a citation or other supporting authority for such approach. The SED must be revised to explain the State Water Board's review of the Bay Delta Plan, including a clear description of each phase and the authority of the State Water Board to perform its review in this manner.

5. The SED fails to describe the method and extent to which the proposed project protects the beneficial use of fish and wildlife. The SED does not identify the specific fish species for which the Lower San Joaquin River ("LSJR") Flow Objective is supposed to protect. The SED does not identify the quality or quantity of protection the LSJR Flow Objective will offer or how this protection will be measured; e.g. population, escapement, smolt survival to a specific location. The SED must be revised to clearly describe how the State Water Board proposes the LSJR Flow Objective will provide reasonable protection to fish and wildlife beneficial uses.

Section 1.2.

1. The SED provides a description of the "plan area." The plan area is a complete departure from the plan area of the 2006 Bay Delta Plan. The SED does not explain, provide support for or analyze the environmental impacts of changing the geographic scope. The SED must be revised to explain the change in the geographic scope, support why the State Water Board can make this change under the guise of a review of the Bay Delta Plan, and analyze the environmental impacts of the change.

2. Figure 1.1 is incorrect and irrelevant. It is incorrect because it does not include Fresno Slough and the Kings River, which are in the San Joaquin River ("SJR") Basin. It is irrelevant because the plan area is not the entire SJR Basin. The SED should be revised to remove this Figure. If Figure 1.1 remains, it should be corrected to accurately reflect the SJR Basin and overlay the plan area for context.

3. The SED does not provide sufficient explanation or analysis in support of Figure 1.2. The SED fails to explain why certain areas are included and others are excluded. In addition, the SED fails to explain how the departure from the geographic scope of the 2006 Bay Delta Plan is supported. The SED must be revised to provide this explanation.

Section 1.3.1.

1. The SED does not discuss the State Water Board's authority under section 401 in this section. The SED must be revised to disclose and explain its 401 certification authority if it intends to rely on this authority to implement any part of the LSJR Flow Objective.

Section 1.3.2.

1. The SED does not include an initial assessment of water available to protect fish and wildlife beneficial uses. The SED must be revised to include this assessment.

2. The SED claims the State Water Board has reserved jurisdiction over water right permits under Water Code section 1394. The SED does not include an analysis of whether the water diverted in the plan is diverted pursuant to a permit and, therefore, the extent to which this provision provides jurisdiction. The SED must be revised to include this analysis.

3. The SED fails to assess how much water in the plan area is diverted pursuant to riparian rights and how the SED proposed to regulate water diverted pursuant to a riparian right. The SED must be revised to estimate the riparian diversions in the plan area and describe how the proposed regulation will affect riparian diversions.

4. The SED fails to assess how much water in the plan area is diverted pursuant to pre-1914 appropriative rights and how the SED proposed to regulate water diverted pursuant to a pre-1914 appropriative right. The SED must be revised to estimate the pre-1914 diversions in the plan area and describe how the proposed regulation will affect pre-1914 appropriative right diversions.

Section 1.4.

1. The SED does not include information provided by the San Joaquin Tributaries Authority ("SJTA") and other stakeholders within the plan area. The SJTA and members of the SJTA provided the State Water Board with a significant amount of information, in the form of comments, letters, data, model runs, and in-person meetings with State Water Board staff. The SED does not address or analyze any of this information. The SED must be revised to evaluate the information provided by stakeholders.

2. The SED states it will identify areas of controversy and disputes will be addressed. The SED does not identify controversy or address disputes. The SED must be revised to identify controversies and address disputes.

3. The SED states that "Since that time LSJR fish populations . . . have declined." The SED does not provide citation or other support for this conclusion. The SED should be revised to delete this statement or provide support for the allegation.

4. The SED states that populations of salmon have experienced on-going declines. The SED does not provide citation for this assertion. Further, Central Valley fall-run Chinook salmon have been deemed by NMFS to be "rebuilt." The SED must be revised to delete the statement that populations of salmon are declining or provide support for that statement and a response to the NMFS statement.

5. The SED states that the "ongoing population declines of salmonids" have been "largely attributed to inadequate flow conditions." (SED, at 1-6.) The SED does not identify who is attributing the decline to flow. Nor does the SED include any support or other reference. As this section suggests, the VAMP reports have historically shown no causal relationship between flow and fish decline. The SED must be revised to delete this conclusion regarding flow and salmon decline or provide support for this statement.

6. The SED states it is not making a determination of water rights or otherwise allocating responsibility for meeting the new flows. Although this is correct, the SED must acknowledge that any implementation of the proposed flows will need to comply with water right priority rules and take into consideration the restraints and limitations of water right priority when analyzing methods of compliance and environmental impacts. Because the SED fails to do this, it must be revised to identify water right priority and explain how the proposed flows can be implemented consistent with water right priority rules.

7. The SED is not clear regarding proposed amendments. The existing Salmon Narrative Objective and the San Joaquin River Flow Objective are two separate objectives. The SED refers to a single narrative flow objective. (SED, at 1-6 ["As part of the program of implementation the narrative flow objectives are applied as percentages of unimpaired flow in order to achieve protection of beneficial uses."].) It appears as though the State Water Board is proposing to revise the existing Narrative Objective; however, the State Water Board did not provide public notice it is reviewing the Salmon Narrative Objective. The SED does not analyze the environmental impacts of changing the Salmon Narrative Objective. The SED must be revised to delete all references to the proposed amendment of the Narrative Objective; it has not been noticed and no environmental review of the Narrative Objective has been performed.

8. The SED is unclear how the Narrative Objective and the numeric flow objectives are related. The SED notes that the alternatives are "the narrative flow objectives [] applied as percentages of unimpaired flow." (SED, at 1-6.) This description does not make clear whether the proposed project is a single LSJR flow objective that is narrative or whether the proposed project is

a narrative and a numeric objective. The SED must be revised to clearly describe the proposed amendments.

9. The SED explains that each Alternative proposes to require a certain percent of unimpaired flow "equally" on the Tributaries. This is unclear and ignores the rules of water right priority. The SED must be revised to explain what "equal" distribution of unimpaired flow means and how this comports with the differing water right priorities in the system.

10. The SED does not explain its authority to set an objective that is more protective than necessary to protect the identified beneficial use. Because 1.0 ds/m April-August is fully protective of south Delta agriculture, the SED must provide such explanation if it proposes to adopt an objective of 0.7 ds/m. The SED must be revised to address this issue.

11. The SED acknowledges that discharges and return flows are responsible for the salinity levels between Vernalis and the interior south Delta. The SED does not address or otherwise explain why it is not regulating the release of salinity instead of requiring increased flows. Similarly, the SED does not explain how this objective is consistent with the State Water Board policy regarding dilution flows. The SED must be revised to address these issues.

12. The SED discusses the *City of Tracy* case, but does not explain how the State Water Board will weigh and balance the factors set forth in Water Code section 13241. The SED must be revised to comply with the requirements in section 13241.

13. The SED includes only a short summary of the Bay-Delta Conservation Plan ("BDCP"). The BDCP has collected a significant amount of science and information regarding the Bay and Delta areas and has performed substantial analyses. The SED does not include or rely on this pertinent information. The SED must be revised to include the relevant information and analysis developed by the BDCP.

14. The SED only includes a short summary of the San Joaquin River Restoration Program ("SJRRP"). The environmental analysis for the SJRRP includes substantial relevant information and analysis regarding the upper SJR Basin. Further, the environmental analysis provides information regarding how the SJRRP will alter the hydrology of the LSJR from February

through June. The SED must be revised to include the relevant information and analysis developed by the SJRRP.

Section 1.5.

1. The SED states it performs a "program level (i.e. macroscopic) analysis" of the methods of compliance. (SED, at 1-19.) The SED does not include a program level analysis. The SED must be revised to disclose the level of detail and analysis required by a program level analysis and conduct such analysis.

2. The SED states the State Water Board considered public comments. The SJTA provided the State Water Board with volumes of information, modeling, and data. Most of the information, modeling and data is not referenced or otherwise addressed in the SED. The SED must be revised to explain how it considered this information and, if the information was disregarded, a brief explanation of why.

3. Table 1-1 does not include notice for review of the salmon narrative objective. The SED must be revised to disclose the public planning process for review of this objective.

4. Table 1-1 does not include a process for response to public comment on the Technical Report. The SJTA submitted significant comments regarding the deficiencies of this report to which the State Water Board has yet to respond. These comments were not addressed in the Final Technical Report. The SED must be revised to explain how the State Water Board will respond to public comments and deficiencies in the Technical Report.

5. The SED recognizes the State Water Board must identify issues of known controversy. (SED, at 1-23.) The SED has not identified issues of known controversy. The SJTA has submitted a large volume of comments concerning areas of controversy which were not identified or analyzed. Specifically, the failure to include the controversy over whether a natural flow regime will adequately protect fish and wildlife resources is alarming. The SED must be revised to identify and analyze issues of known controversy.

6. The SED states it plans to consult with public agencies having jurisdiction with respect to the plan amendments and with persons having special expertise with regard to the

environmental effects involved in the plan amendments. (SED, at 1-24.) The SED lists resource agencies, but does not include any planned consultation with local irrigation districts. The SED must be revised to identify the local agencies and irrigation districts with which the State Water Board plans to consult. In addition, the SED must set forth a proposed time schedule in which it plans to consult with local agencies.

7. The SED states that the State Water Board is the only agency with responsibility for approving and implementing the plan and for this reason there are no responsible agencies. (SED, at 1-24.) This directly contradicts the SED's position on the analysis pertaining to compliance methods. The SED takes the position that it will not be the State water Board, but local irrigation districts and other public agencies that will determine how best to comply with the Plan. The SED must be revised to resolve this contradiction. The SED must either identify local agencies as responsible agencies and set forth a compliant consultation plan or analyze each method of how the State Water Board will implement the Plan.

Section 1.6.

1. The SED states CEQA requires it to describe the "main points of disagreement" when expert opinions differ on issues of environmental impacts. This statement of rule is correct. There are many points of disagreement; however, the SED fails to identify any points of disagreement throughout the document. The SED must be revised to disclose and describe the main points of disagreement throughout the document.

2. The SED correctly sets forth the rule for selecting a baseline that complies with CEQA. The SED fails to set a baseline that complies with these rules. The SED must be revised to set a compliant baseline.

3. The SED sets forth the rule for mitigation measure requirements. The SED fails to include mitigation measures that comply with these rules. The SED must be revised to provide proper mitigation measures.

4. The SED sets forth the rules for evaluation of alternatives. The SED fails to include alternatives which would meet the requirements of these rules. The SED must be revised to include these alternatives.

CHAPTER 2

Section 2.1.

1. This section is overbroad. Because the SED proposes to regulate only a specific area, it is misleading to describe the larger area which the State Water Board is not attempting to regulate. The SED must be revised to tailor this section to the plan area.

2. The SED's description of Delta diversions summarizes the major diversions as exports. This description is deficient because it does not estimate the quantity or location of in-Delta diversions. D-1641 estimated South Delta Water Agency diversions amounted to approximately 1,800 cfs daily. The SED must be revised to include estimates of Delta diversions.

Section 2.2.

1. This section is overbroad and misleading. The SED must focus on the area of proposed regulation for the San Joaquin River Flow Objective. The SED must be revised to delete this section or make clear it is only for broad geographic context.

2. The SED states that "infrequent flood waters from the Kings River flow into the SJR at Mendota pool reservoir via the Fresno Slough." (SED, at 2-3.) The SED must be revised to estimate the quantity of water in different year types.

3. The SED states that the three eastside tributaries contribute the majority of the flow at Vernalis. It is unclear whether the SED is referencing the existing flows or historic flows. The SED should be revised to disclose the historic amount of flow the tributaries contribute to the San Joaquin River.

4. The SED states there are "no required fishery flow releases below these tributary reservoirs." (SED, at 2-4.) It is unclear to which reservoirs the SED is referring. The SED must be revised to clearly describe the system, including existing fishery flows.

Section 2.3.

1. It is unclear why the SED includes a section on the upper San Joaquin River, as it does not include contributions from the upper San Joaquin River in the LSJR Flow Objective. The SED must be revised to delete this section or make clear that it is provided only as background and is not relevant to the LSJR Flow Objective.

2. The "Hydrology" section analyzes unimpaired flow from 1984 through 2009. No indication is given as to why this range of dates was chosen, or whether this range of time reflects normal conditions in the project area. The SED must be revised to include this information.

Section 2.4.

1. Table 2.3 is incorrect. Stockton East Water District ("SEWD") does not use water diverted pursuant to SSJID or OID water rights. The SED must be revised to correct Table 2.3.

2. Table 2.4 is incorrect. The range of flows required under Table 2E of the NMFS BO is not included. The SED must be revised to correct Table 2.4.

3. The SED states the upper Tuolumne River watershed is outside the plan area. (SED, at 2-16.) The SED provides no support or explanation for why the upper watershed has been excluded. The SED must be revised to include the upper watershed and consider the environmental impacts of the proposed project on the upper watershed.

4. The SED states water released at New Don Pedro Dam is regulated at LaGrange Dam and Reservoir. (SED, 2-16.) This is not correct. The SED must be revised to correctly describe the system.

5. The SED states Oakdale Irrigation District ("OID") and South San Joaquin Irrigation District ("SSJID") generate hydropower for their service area. (SED, at 2-23.) This is not correct; currently they sell to the California Independent System Operator ("CALISO"). The SED must be revised to correctly describe the system.

6. The SED does not disclose that water is impounded at Goodwin Dam for diversion to SEWD and Central San Joaquin Water Conservation District ("CSJWCD"). The SED must be revised to reflect these uses.

7. The SED states water is pumped into Goodwin Tunnel. That is not correct; Goodwin Tunnel is gravity fed. The SED must be revised to correctly describe the system.

8. The SED describes the water diversions of OID and SSJID incorrectly. OID and SSJID hold water rights separate and distinct from the 1988 Agreement and Stipulation with the United States Bureau of Reclamation ("USBR"). OID and SSJID have adjudicated pre-1914 appropriative water rights to the first 1,816.6 cfs of flow in the Stanislaus River. The districts also have numerous appropriative right licenses for storage, hydropower and irrigation, above, in and below New Melones Reservoir. The 1988 Agreement and Stipulation is an operation agreement between the districts and the USBR for putting a 2.45 maf reservoir on top of Old Melones and between the upstream and downstream operations of the districts. The 1988 Agreement and Stipulation was approved by the State Water Board and made a condition of the permits issued by the State Water Board for the New Melones project. The SED must be revised to correctly describe the water rights of the irrigation districts.

Section 2.5.

1. The SED states the State Water Board "first established LSJR flow objectives" in the 1995 Bay Delta Plan. This is not correct. The 1995 Bay Delta Plan included San Joaquin River flow objectives at Vernalis. The 1995 Bay Delta Plan did not include an objective for Lower San Joaquin River flow objectives; nor did it establish objectives for the SJR tributaries.

2. The SED indicates that unimpaired flows are the same as natural flows. (SED, at 2-29.) This is not correct. The SED must be revised to clearly define unimpaired flow.

Section 2.6.

1. The SED describes the water exported as "tidally mixed." (SED, at 2-33.) The Department of Water Resource's ("DWR") presentation in Workshop 3 and the data presented by the SJTA from Dr. Paulsen show the water pumped at Jones Pumping Plant is almost entirely SJR flow.

2. The SED does not explain or otherwise discuss the existing water rights for pumping SJR water at the Jones Pumping Plant. The exchange contract clearly contemplated the San Joaquin

Exchange Contractors ("Exchange Contractors") would forego their rights to the SJR in exchange for CVP water from Shasta and Folsom Lakes. The Bureau would then take the Exchange Contractor's rights, plus its own appropriate rights at Millerton Lake. This arrangement does not allow USBR to divert SJR water to provide to the Exchange Contractors. Unfortunately, as the DWR's modeling points out, Jones is pumping water from the San Joaquin River. The SED must be revised to properly disclose the hydrology, identify the discrepancy between hydrology and existing water rights, and how the State Water Board will reconcile the discrepancy.

3. Figure 2-9 includes historical flows from the entire SJR Basin. Because the plan area is significantly different than the SJR Basin, this figure is misleading and mischaracterizes the impact of the proposed project. The SED must be revised to delete Figure 2-9 or revise the figure to reflect only the flows from the plan area.

4. The SED states the LSJR delivers water of "relatively poor water quality" to the Delta. (SED, at 20-36.) It is unclear what this means and which waters this assessment is regarding. The SED also provides no support or citation to support this statement. The Vernalis salinity standard has been met since 1995. The SED must be revised to delete this comment or provide support for the conclusory statement.

5. The SED states that higher pumping results in lower salinity due to increasing Sacramento River water in the Delta. (SED, at 2-37.) This statement is contrary to the theory behind the X-2 objective. In addition, the SED provides no support or citation to support this statement. The SED must be revised to delete this comment or provide support for this conclusory statement.

CHAPTER 3

Section 3.2.

1. The SED states the purpose of the LSJR Flow Objective is to protect fish and wildlife beneficial uses in the LSJR watershed and the eastside tributaries. (SED, at 3-1.) This is a significant departure from the previous San Joaquin River flow objectives, which sought to protect fish and wildlife migrating through the Delta. The SED does not address, explain or otherwise

justify these changes. The SED must be revised to address, explain and justify these changes, including the procedural problems with changing the designated beneficial uses.

2. The SED states that scientific information "indicates that higher flows of a more natural pattern are needed from the three eastside salmon-bearing tributaries to the LSJR during the spring (February-June) to protect fish and wildlife beneficial uses." (SED, at 3-1.) The SED alleges the Technical Report supports this statement. (SED, at 3-1.) This is not correct; the Technical Report does not support this statement. The information in the Technical Report discusses flows in the San Joaquin River, it does not discuss the need for flows on the lower San Joaquin River or the tributaries. The Technical Report does not specify that flows in certain months are necessary. Finally, the Technical Report is not supported by the best available science. The Technical Report relies primarily on the DFG Salmon Model 1.6. The DFG Salmon Model 1.6 run at the preferred alternative estimates the proposed project will provide no protection to fish and wildlife. Instead, the Salmon Model 1.6 shows that compared to historic flow levels, the proposed project would decrease, rather than increase salmon population levels. The SED must be revised to include only scientific conclusions that can be supported.

3. The SED defines fish and wildlife beneficial uses as "including San Joaquin River Basin fall-run Chinook salmon and other important ecosystem processes." (SED, at 3-2.) Other important ecosystem processes are outside the beneficial use of fish and wildlife. The SED provides no support for the inclusion of ecosystem processes. The SED must be revised to delete the reference to ecosystem processes; if the State Water Board would like to develop an objective to provide protection to ecosystems, it must notice a new process and develop a new objective, but it cannot do so through the review of the San Joaquin River Flow Objective.

Section 3.3.

1. The SED states it is proposing to update the coordination process for the provision of the October pulse flows. (SED, at 3-3.) The SED does not include any analysis regarding the environmental impacts of changing the October pulse flows, and the State Water Board never noticed such a change. Before the State Water Board is authorized to change the October pulse flow,

or reallocate responsibility therefor, it must notice the review and analyze the environmental impacts of this change. The SED must be revised to delete the proposed changes to the October pulse flow.

2. The SED includes a revised narrative objective. The State Water Board failed to notice the review of the Salmon Narrative Objective and does not include any environmental analysis of the proposed change. The SED must be revised to delete all references and changes to the review and revision of the Salmon Narrative Objective.

3. The SED identifies four compliance points: one at Vernalis and another three at the confluence of the LSJR and the three eastside tributaries. (SED, at 3-3.) This is not consistent with Appendix K which identifies the Vernalis compliance point and states "to be determined" on the other three. The SED must be revised to be consistent, especially on such a fundamental issue.

4. The SED states compliance points will be on the confluence of the LSJR and each of the tributaries. (SED, at 3-3.) If the compliance points are on the LSJR, it is not clear how the SED will ensure that flow is from the tributary rather than from another water source. The SED should be revised to explain how a compliance point on the LSJR will distinguish between flow from different water sources.

5. The SED states the program of implementation includes specific flow requirements and other measures to implement the Narrative Objective. (SED, at 3-3.) This is not correct; Appendix K does <u>not</u> include specific flow requirements or any other specific measures. The SED must be revised to delete this section or revise Appendix K to include the information.

6. The SED states the unimpaired flow requirements would not apply when "such flows would cause flooding or other related public safety concerns." (SED, at 3-3.) The SED goes on to state these levels will be established through consultation with federal, state, and local agencies. The State Water Board should have already performed this consultation and must identify and analyze the flow cap in the SED. The SED must be revised to clearly identify and analyze the environmental impacts of the flood flow limit of the LSJR Flow Objective.

7. The SED states that the proposed project requirements would not apply when such flows would cause flooding. (SED, at 3-3.) The SED does not disclose the caps imposed by flood restrictions, but includes specific caps in modeling. In addition, the SED does not analyze the impact of imposing caps on the proposed project. The SED must be revised to disclose the flood control caps relied upon in the modeling and analyze the impacts of imposing caps on the proposed project.

8. The SED proposes to establish an implementation workgroup to develop recommendations for implementing the proposed project. (SED, at 3-4.) The description of the process is unclear. Further, the State Water Board is required to analyze implementation and set forth a plan of implementation in the SED. Planning to have another group do this in place of the State Water Board is unlawful. The SED should be revised to delete the references to the implementation workgroup and explain how the State Water Board is proposing to implement the proposed project.

9. The SED proposes to establish an adaptive management program that would allow a coordinated operations group to change the timing and quantity of flow requirements. The description of this process is unclear. Further, the wide latitude provided to the Coordinated Operations Group ("COG") undermines the SED analysis and public disclosure, amounts to an unlawful delegation and violates other periodic review requirements in the Water Code. The SED must be revised to eliminate the adaptive management component of the proposed project or significantly revise the adaptive management component to be lawful.

10. The SED proposes an adaptive management program which allows the COG to change the timing and quantity of flows. The SED does not analyze the environmental impacts of the adaptive management plan. The SED must be revised to delete the adaptive management plan or analyze the impacts thereof.

11. The SED provides a brief description of the alternatives. The alternatives considered by the SED are deficient and the State Water Board is required to consider a much broader set of

alternatives. For instance, the SED does not analyze non-flow alternatives. The SED must be revised to consider sufficient alternatives.

Section 3.6.

1. The SED briefly discusses several suggested alternatives that were not analyzed in the SED. (SED, at 3-8.) The explanation as to why each alternative was not included in the SED is insufficient. None of the explanations provide an explanation as to why or how the suggested alternative is not reasonable or feasible. The SED must be revised to provide specific reasons each alternative is not feasible.

2. The SED states that it summarizes suggested alternatives from the public. The SJTA requested the State Water Board to include an alternative that includes contributions from Friant flows. This suggested alternative was not disclosed, summarized or evaluated in this section. The SED must be revised to include an analysis of the Friant contribution alternative.

3. The SED states that it summarizes suggested alternatives from the public. The SJTA requested the State Water Board to include an alternative that includes contributions from the entire SJR Basin. This suggested alternative was not disclosed, summarized or evaluated in this section. The SED must be revised to include an analysis of the SJR Basin contribution alternative.

4. The SED explanation regarding why it did not consider contribution of flows from the upper SJR is unclear and unsupported. The SJRRP flows are not related to basin plan objectives and do not support the protection of beneficial uses. Further, the concession that the State Water Board plans to review the need for additional flows from the upper SJR later is unlawful. The State Water Board is piecemealing the environmental review and there is no reason for not including the upper SJR in the current review. The SED should be revised to include an alternative that considers flow contribution from the upper SJR.

5. The SED states that it addressed the South Delta and Lower San Joaquin Alternative by including a statement in Appendix K that says the State Water Board "may" take actions to assure water quality flows are not improperly diverted downstream. This is insufficient. First, the State Water Board is required to ensure water of the state is not improperly used or diverted; stating

it may take action is not enough. The State Water Board must take action. Second, the inclusion that the State Water Board may take action is not the same as identifying and analyzing the impacts of an alternative. The SED must be revised to delete this response to the South Delta alternative.

CHAPTER 4

Section 4.2.

1. The SED states Appendix H provides sufficient analysis to satisfy Public Resources Code section 21159. This is not correct. Appendix H is substantially deficient and does not analyze the reasonable methods of compliance. For instance, Appendix H does not consider the environmental effects of increasing reservoir fluctuation. The SED must be revised to include an analysis of the reasonable methods of compliance that is sufficient and lawful.

2. The SED refers to "existing" LSJR Flow Objectives. (SED, at 4-2.) This is a misnomer; there are no existing Lower SJR Flow Objectives, there is a San Joaquin River Flow Objective. The SED must be revised to address the change in geographic scope and provide support for such a change.

Section 4.3.

1. The SED recognizes that it must identify feasible mitigation measures for each significant environmental impact. However, the SED does not identify feasible mitigation measures. The SED must be revised to include sufficient mitigation sections to comply with CEQA requirements.

2. The SED recognizes it is required to consider the cumulative impacts of the proposed project; however, the SED fails to consider the cumulative impacts. In fact, two projects that should be analyzed in each cumulative impacts section – the BDCP and the SJRRP – are not disclosed or analyzed to determine the cumulative impacts of the proposed project.

Section 4.6.

1. The SED sets forth a baseline that is unlawful and not reflective of the current physical environment. Specifically, the baseline includes VAMP flows when it should not. In addition, the baseline must include the following:

- D-1641 Vernalis flow requirements met by the CVP
- D-1641 Vernalis water quality requirements met by the SWP/CVP
- Ripon DO requirement
- NMFS BO instream flow requirements (Table 2E)
- NMFS BO interim temperature objectives
- NMFS BO Vernalis April/May flow requirements
- OID/SSJID entitlement diversions
- SEWD/CSJWCD CVP contractor deliveries

The SED fails to include several of the above requirements. Setting forth a proper baseline is necessary to ensure the public is informed regarding the impacts of the proposed project. The SED must be revised to correct the baseline to reflect the existing physical environment. In addition, the environmental analysis must be revised to reflect the changes to the baseline.

Section 4.7.

1. The SED uses the Water Supply Effects ("WSE") Model as the basis for all water supply analysis. Thus, the vast majority of the SED's analysis is built on the foundation laid by the WSE. The WSE Model has fundamental deficiencies that undermine the entire environmental analysis. The WSE Model is based on a set of operating assumptions that have never been and will never be used by the irrigation districts. The WSE Model assumes the irrigation districts will implement the proposed water reductions by deciding the annual water delivery schedule based on the reservoir level on January 31st. The WSE Model further assumes the irrigation districts will not draw down reservoir levels, but instead keep the reservoir at existing levels and provide all additional water by cutting water deliveries. These incorrect inputs drive the WSE Model and the analysis of the SED. Thus, the WSE Model assumes the proposed project will have little, if any, impact on groundwater, hydropower, reservoir levels, and flooding, among other impacts.

The SJTA provided written comments to the State Water Board noting the problems with the WSE Model. In addition, in several different meetings with State Water Board staff, the SJTA discussed the problems with the WSE Model, provided guidance regarding more realistic

assumptions, and offered the use of the existing models used by SJTA members to model actual operations. Despite these communications, the State Water Board staff did not amend the WSE Model inputs. The SED must be revised to correct the fundamental deficiencies with the WSE and revise the resulting environmental analysis based on this correction.

2. The SED states the WSE Model is "run using 82 years of monthly hydrology." (SED, at 4-13.) However, the SED is not transparent regarding how the 82 years of the hydrologic information is used. The SED averages the 82 years of hydrology, evaluating the environmental impacts of the proposed project only in this average year. This means that the SED does not include any analysis of the environmental impacts of the proposed project in dry or consecutive dry years. This is a fundamental deficiency. The SED must be revised to analyze the impacts of the proposed project in dry and consecutive dry years.

CHAPTER 5

Section 5.1.

1. The SED includes increasing the concentration of 303(d) pollutants in the significance threshold. The SED does not explain how this threshold protects fish and wildlife or south Delta agriculture beneficial uses. The SED should be revised to delete the increased concentration of pollutants from the significance threshold or provide a scientifically-supported analysis about how limiting the concentration of pollutants will protect the identified beneficial uses.

2. The SED establishes a significance threshold of reducing baseline instream flow by 5 percent or more. (SED, at 5-2.) Because the baseline improperly includes VAMP flows and VAMP flows are not currently being provided, the significance threshold would be skewed. The SED must disclose this impact on the threshold and disclose the approximate percentage the threshold represents of existing flows.

3. The SED establishes a significance threshold of reducing baseline instream flow by 5 percent or more. (SED, at 5-2.) The SED is not clear whether this threshold is for the tributaries, the SJR, or the Delta.

Section 5.2.

1. The SED states the hydrology and water quality of the southern Delta is "strongly influenced" by San Joaquin River inflow. This statement is not correct. In Workshop 3 of the Phase 2 workshops, the independent science panel presented hydrologic modeling information which concluded that very little, if any, San Joaquin River water made it to the Delta. The SED must be revised to correct this misstatement.

2. The SED states that beneficial uses are designated for specific water bodies. The SED goes on to state the "tributary rule" allows a "regional water board to apply the designated beneficial uses that exist in the nearest downstream tributary." (SED, at 5-8.) This section is unclear. First, it is not clear what the "tributary rule" is; the SED provides no citation and little explanation regarding this rule. Second, it is not clear whether the SED is just stating a rule in the abstract, or whether the SED is recognizing that the SJR Flow Objective under the Bay Delta Plan protects a different beneficial use than the proposed LSJR Flow Objective. As described, the tributary rule would not empower the State Water Board to set the LSJR Flow Objective through a review of the SJR Flow Objective. The rule allows the regional board to apply a beneficial use where none exist to a downstream tributary. Here, the State Water Board is acting, beneficial uses have been identified in the LSJR, and the LSJR is upstream (not downstream) of the Bay Delta. The SED must be revised to explain the purpose of this section, delete or support the tributary rule, and explain how the tributary rule could apply to the LSJR Flow Objective.

3. The SED section regarding water quality and impairments is not related to the protection of fish and wildlife and south Delta agriculture. Therefore, the SED must be revised to delete this section.

4. The SED includes a section on the water supply from the upper SJR. (SED, at 5-15.) This section is not relevant because the proposed project does not include flow from the upper SJR. The SED should be revised to delete this section.

5. The SED states OID and SSJID hold contracts with the USBR. This is not correct; OID and SSJID are not CVP customers or settlement contractors. The SED must be revised to correctly describe the system.

6. The SED describes the SJR Vernalis Flow Objective, recognizing minimum Vernalis flows are dependent on the Delta outflow or X-2 requirements. The SED does not explain whether the proposed project will include flows that are similarly dependent on X-2 requirements. The SED does not state that flows under the proposed project will no longer rely on X-2, nor does the SED make clear whether SJR flows will be considered in Phase 2 to contribute to the X-2 requirement. The SED must be revised clarify the relationship between the proposed project, SJR flows, and the X-2 requirement.

7. Section 5.2.7 discusses exports, water surface elevations, and south Delta barriers. These issues have all been noticed for Phase 2. It is unclear how these issues relate or otherwise implicate the proposed project and the LSJR Flow Objective. The SED must be revised to delete this section.

8. The Southern Delta section does not estimate the quantity of diversions in the south Delta. To the extent the proposed project requires flows at Vernalis for the benefit of the Delta, the State Water Board must understand and disclose the quantity of water diverted within the Delta. The SED must be revised to identify the Delta benefit, if any, of the LSJR Flow Objective. The SED must also be revised to disclose the quantity of water diverted within the interior Delta and analyze the impact of these diversions on flows released pursuant to the LSJR Flow Objective.

9. The SED includes several figures (Figures 5-3(a)-(b), 5-4(a)-(b), 5-5(a)-(b)) which reflect water surface elevation in July. These figures are not relevant to the proposed project, as they are outside the regulated period of February – June. The SED must be revised to delete these figures.

10. The SED includes a section on salinity measurements. The Vernalis EC standard has been met every year since 1995. EC measurements are not an issue. The SED must be revised to

delete this section or note that the requirements are always met and the section is for informational purposes only.

Section 5.3.

1. The SED does not explain how the proposed project will comply with the Raker Act. The SED must be revised to provide an explanation of how the proposed project will comply with the Raker Act.

2. The SED states the 2006 Bay Delta Plan identified beneficial uses for Delta waters. The LSJR Flow Objective is not protecting beneficial uses of Delta water, but of waters in the Stanislaus, Tuolumne and Merced Rivers. Therefore, the proposed project does not appear to amend the objectives in the Bay Delta Plan, but instead creates new out-of-basin objectives. The State Water Board must properly notice a new basin plan or the creation of new objectives.

3. The SED includes VAMP flows in the baseline and states the flows are "appropriately modeled." (SED, at 5-53.) VAMP flows should not be included in the baseline. The SED must be revised to remove VAMP flows from the baseline.

Section 5.4.

1. The SED discloses the Fourth Agreement implicates the City and County of San Francisco ("CCSF") in the operation of New Don Pedro. This description is inconsistent with the SED's conclusion that the proposed project will not impact the operations of the CCSF. The SED must be revised to address this inconsistency.

2. The SED states it excludes upstream hydroelectric facilities because the LSJR Flow Objective will be "implemented further downstream." (SED, at 5-56.) This statement is not consistent with the rules of water right priority and is pre-decisional. The SED must be revised to remove the exclusion for upstream facilities and revise the environmental analysis accordingly.

3. The SED states it excludes upstream reservoirs from the environmental analysis because "the fraction of the unimpaired runoff that is retained in these upstream reservoirs depends on the upstream watershed area and is a small fraction of the watershed runoff." (SED, at 5-56.) The SED goes on to state that the upstream diversions "can continue without regard to the downstream

flow objectives." (*Id.*) The SED does not provide support for this conclusion; it does not disclose the amount of upstream runoff over a historical period. In addition, the conclusion is not consistent with the rules of water right priority, which require junior users to curtail water use before seniors, regardless of the quantity of the right. Finally, the conclusion makes little sense; if the upstream contribution is small, it should be easy for the SED to consider. The SED must be revised to include the upstream reservoirs in the environmental analysis and the permission to continue diversions without regard to the proposed project must be deleted.

4. The SED recognized that on the Tuolumne River there are "major" upstream reservoirs. (SED, at 5-56.) Despite these major reservoirs, the SED concludes that water banking between TID, MID, and CCSF will be modified, and for this reason, CCSF operations "are expected to be unchanged." (Id.) This statement is not supported. The SED does not explain what it means by water banking, nor does it explain why water banking would leave the CCSF without any impact. This is a serious deficiency which results from the failure of the SED to analyze the environmental impact of the proposed project on Hetch Hetchy and the CCSF. This deficiency is compounded by the fact that CCSF provided information to the State Water Board regarding the potential environmental impacts of the proposed project on its system. This information was not included in the SED. The SED must be revised to include an environmental analysis of the proposed project impacts to CCSF.

5. In the section on Methods and Approach, the SED fails to disclose or explain that the proposed project is not expected to have an impact on the upper SJR. The plan area suggests the proposed project will not include the upper SJR. However, the SED fails to explain the reason for this exclusion. The upper SJR must be included if the SED relies on the premise that unimpaired flow is required to protect fish and wildlife species. The SED must be revised to include the upper SJR contribution to meet the LSJR Flow Objective.

6. The SED states that the baseline reservoir levels were based on CALSIM. (SED, at 5-57.) The CALSIM model for the Stanislaus River is flawed; in order to prevent modeling the emptying of the reservoir, add water or magic water is added. The SED does not disclose this flaw

or otherwise account for the fact that CALSIM's modeling of the Stanislaus cannot be used as the baseline because it does not reflect the physical environment, but reflects the physical environment plus water that does not exist in the physical environment. The SED must be revised to not rely on CALSIM for reservoir levels, or to disclose and take into account that CALSIM adds non-existent water in order to allow the model to work.

7. The SED includes VAMP flows in the baseline because VAMP flows were in place at the time the 2009 Notice of Preparation ("NOP") was issued. (SED, at 5-57.) VAMP flows were provided based on an agreement that expired in 2010. At the time the NOP was issued, the State Water Board knew or should have known VAMP flows were not a part of the existing physical environment. For these reasons, VAMP flows should not be included in the baseline. The SED must be revised to remove VAMP flows from the baseline.

8. The SED explains its reliance on the WSE Model. As more fully set forth above, the WSE Model is fatally flawed and cannot be used to evaluate the impact of the proposed project. The SED must be revised to correct the fundamental deficiencies with the WSE and revise the resulting environmental analysis based on this correction.

9. The SED discloses that the WSE Model does not reflect baseline requirements. Specifically, the SED states that although the NMFS BO requirements are included in the baseline, the WSE Model does not include these requirements. Instead, the WSE Model assumes that the LSJR Flow Objective will control, regardless of the NMFS BO requirements. The SED fails to provide support for this assumption. The assumption is contrary to the rules of federal preemption. Instead, the SED acknowledges the State Water Board would not be able to change the existing NMFS BO requirements. Thus, the SED concedes the WSE Model does not reflect reality. The SED fails to fully explain the resulting impacts of this assumption and modeling deficiency. The SED states that "accordingly, a conservative assessment of potential impacts on the Stanislaus River" was performed. (SED, at 5-58.) In reality, the WSE Model ignores the existing minimum flow requirements on the Stanislaus River and the analysis of the 20 percent alternative on the Stanislaus falsely estimates significant impacts. The reason this is important is because the 20 percent

unimpaired flow alternative is estimated to have significant impacts only on the Stanislaus River and only because the WSE Model does not include the NMFS BO requirements. The SED must be revised to include the NMFS BO requirements in the WSE Model.

10. The SED explains that it analyzed the effect of each alternative relative to the baseline by "subtracting" monthly tributary flows, reservoir storage levels and annual diversions output from the CALSIM baseline from "the WSE model outputs on a tributary basis." (SED, at 5-58.) This makes no sense. Comparing CALSIM and WSE results is not supported; the models do not generate the same data, so the comparison is like apples to oranges. Further, it is not clear what the WSE model outputs and how that can be subtracted on a "tributary basis." The SED must provide sufficient information and explanation to the public to enable public participation and comment. The SED must be revised to clearly explain the method of analysis.

11. The SED includes a section on Monthly Flow Value that evaluates the "magnitude" of benefits provided by the monthly flow changes. (SED, at 5-59.) The SED explained that this analysis is based on the "common assumption that more flow is generally beneficial, up to a relatively high flow that would achieve full benefits." (Id.) The SED does not provide any citation, evidence, or other explanation in support of this assumption. Because this unsupported assumption is the foundation for the SED, the SED is deficient. Such a sweeping assumption that more flow is better and will provide some measure of benefit is unacceptable. The SED must be revised to remove this section and estimate the benefit various levels of flow have at different times of the year, in different year types on the identified beneficial uses. The revisions must be supported by the best available science.

12. The SED analysis of the environmental impact of reduced river flow values is based on the premise that increased flows benefit fish habitat, temperature, salinity, and other public trust resources. (SED, at 5-65.) The SED fails to provide support for this premise. The assumption that more flow by itself, regardless of season, timing, frequency, duration, etc., will benefit fish and wildlife is not supported. The SED must be revised to delete unsupported presumptions based on the "more flow equals more fish" paradigm.

13. The SED analysis of the environmental impact of reduced river flow values is based on an average hydrologic year. The SED must be revised to analyze impacts in dry years.

14. The SED states, "The number of hours of releases is a function of daily average release flow and the turbine capacity flow." (SED, at 5-83.) This statement fails to take into account the demand for energy, which plays a role in how long releases last, and thus how much power is generated. Without considering demand, the analysis relating to hydropower effects is flawed. The SED must be revised to properly analyze impacts to hydropower, considering demand as a function of how much water is released on a daily basis.

15. The SED analysis of the proposed project's impact on peaking energy operations is deficient and contradictory. The SED states that normal peaking energy would continue under all LSJR Flow Objective alternatives. (SED, at 5-84.) The SED then states the only changes would be "slightly different hours with peaking energy releases each day." (*Id*.) The SED must be revised to determine whether the proposed project would change or remain the same; it cannot be both. In addition, the SED does not analyze the environmental impact of the shift in peaking hour energy hours. The SED must be revised to analyze this shift.

16. The SED states that dam operators have flexibility to choose their operations pursuant to hydropower releases. (SED, at 5-84.) This statement is unsupported and ignores the myriad of operational requirements and restraints on dam operations. The SED must be revised to disclose hydropower flexibility and analyze how the proposed project impacts this flexibility.

17. The reductions in surface water supply deficits in Table 5-22(b) are not reflected in the SWAP or IMPLAN Model. The SWAP and IMPLAN Models show significantly more water being diverted than reflected by the WSE Model. The SED must be revised to explain the discrepancy between the water supply analysis and the water supply estimates used for the SWAP Model.

18. The SED states that "some portion" of the proposed project's required flows "could be shared by CCSF." (SED, at 5-89.) The SED does not include any environmental analysis of the

impacts to CCSF. The SED must be revised to disclose and analyze any potential environmental impact of the proposed project on CCSF.

19. The SED states that storage on the Merced River is fixed by New Don Pedro capacity. This is incorrect. The SED must be revised to correct this error.

20. The SED concludes that "there is no mitigation possible" for significant impacts because the project purpose is to increase flows. (SED, at 5-89.) This conclusion is not supported. First, there are other flow regimes that the SED does not evaluate. Second, the SED cannot require that the protection of the beneficial use be restricted to protection from flow and then refuse to consider non-flow mitigation because of the self-imposed limitation. The SED must be revised to properly consider all feasible (flow and non-flow) mitigation measures.

21. The SED describes the analysis of groundwater pumping as "conservative" – assuming no groundwater pumping when estimating agricultural economic impact and assuming 100 percent groundwater replacement when estimating groundwater impacts. (SED, at 5-89.) The purpose of environmental analysis is to analyze the impacts of the proposed project – this approach does not analyze how the proposed project will impact the area, but instead analyzes impacts that will not result from the proposed project. The SED must be revised to identify project impacts and analyze the impacts thereof.

22. The SED concludes that, "The State Water Board would need to require lower flows then [sic] are currently required by LSJR Alternative 3 on the Merced and Tuolumne Rivers in order to reduce significant impacts identified above to existing diverters." (SED, at 5-90.) However, the State Water Board is only so "required" because they refuse to analyze the contribution of upstream water users to meet the flow requirements. The SED must be revised to analyze the contribution from water users within the SJR Basin and not limit contribution to the plan area.

23. The SED states, "some of the potential surface water supply reductions predicted by the WSE model…would be made up through increased groundwater pumping, thus potentially reducing some of the possible agriculture and economic impacts." (SED, at 5-91.) This approach contradicts the SED's groundwater analysis in Chapter 9. In addition, the SED does not identify or

analyze the degree or effects of these reductions. The SED must be revised to provide a consistent groundwater analysis and analyze the proposed project's impact on groundwater and its effects on agriculture and economics.

24. The SED concludes that water temperature "would generally increase if river flow is reduced and would decrease if river flow is increased." (SED, at 5-105.) This statement is unsupported and unfounded. The SED does not include any citation or support for this assertion. In addition, the SED does not state the amount of flow necessary to alter river temperature or estimate the resulting impact to temperature. In addition, this statement is not qualified by the influence of other factors, including water depth, ambient temperature, temperature of flow releases, and quantity of flow releases. Depending on these factors, flow may reduce, increase or have no effect on water temperature. Therefore, the conclusion that more flow will lower water temperature is untrue. The SED must be revised to delete this statement and all analysis resulting therefrom.

25. The SED states that "the WSE carryover storage did not change appreciably from the baseline." (SED, at 5-105.) The SED must be revised to disclose this lack of change is an assumption made by the State Water Board and not an outcome of the analysis of project impacts.

26. The SED used a two degree significance threshold in the analysis of temperature impacts. (SED, at 5-112.) The SED does not explain or support this threshold. The SED does not state a temperature requirement would be violated or fish would be adversely impacted from water temperatures increasing by two percent. The SED must be revised to delete the threshold or provide sufficient explanation and support.

27. The SED states, "The minimum flow that would be adequate for dilution of pollutant concentrations are assumed to be 150 cfs for the Merced River, based on the median July-September baseline flows. Because this was also the minimum target flow used in the WSE model, no Merced River flows of less than 150 cfs were simulated in the February-June period." (SED, at 5-114.) The SED provides no citation for this assumption. Without any basis, it concludes that flows outside the regulated period will be the same as flows during the regulated period. In addition, the SED fails to identify whether pollutants are a problem on the Merced River, analyze whether the flows are

sufficient to dilute pollutants, and how this dilution will affect water quality and aquatic resources. The SED must be revised to identify whether pollutants are a problem on the Merced River, analyze the impacts of the proposed project on pollutants, and analyze how the impact on pollutants will impact aquatic resources.

28. The SED discusses pollutant concentration generally. (SED, at 5-115.) The SED does not identify which pollutants it is proposing to dilute with flow. The SED must be revised to identify the specific pollutants it is targeting and analyze how the proposed project will affect each.

29. The SED assumes adequate dilution flow at Vernalis is 1,600 cfs. (SED, at 5-115.) The SED does not provide any support, citation or explanation for this assumption. The SED must be revised to explain and support this assumption with the best available science.

30. The SED states, "A concentration ratio of more than 1.5 would increase pollutants with a baseline concentration that approach the water quality criteria potentially resulting in a water quality concern." (SED, at 5-115.) The SED does not identify which pollutants would increase. The SED does not define the term "water quality concern." The SED does not identify the water quality criteria. The SED does not analyze how likely the concern is to arise. The SED does not provide any support or citation for this scientific conclusion. Without the missing information, this sentence makes little sense. The SED must be revised to delete this sentence or provide supporting information.

31. The SED states there is an "inverse relationship between flow and pollutant concentrations." (SED, at 5-115.) The SED provides no citation or support for this scientific conclusion. In addition, the SED does not indicate the pollutants to which it is referring, whether there is a direct inverse relationship, and fails to identify the saturation point in this inverse relationship. The SED must be revised to provide the information noted as missing and support all scientific conclusions.

32. The SED states there are "few additional water resources development projects that could be constructed to provide any greater water supply diversions." (SED, at 5-117.) This

statement is unsupported and likely untrue. The SED must remove the statement or provide citation and support therefor.

33. The SED concludes cumulative water supply impacts are unavoidable because "the purpose of the LSJR alternatives is to allocate more of the total runoff to river flows for improved fish habitat, improved fish survival and migration to the estuary, and increased fish populations." (SED, at 5-118.) The purpose of the proposed project is to protect the beneficial use of fish and wildlife. It is predecisional and prejudicial for the SED to include the mechanism (flow) in the purpose (fish and wildlife benefit). The State Water Board is required to consider all mechanisms, not just flow, to achieve the protection of beneficial uses. The SED must be revised to remove flow from the description of the purpose of the proposed project.

CHAPTER 6

Flooding, Sediment and Erosion

1. The SED does not evaluate flood impacts or contribution to flood impacts above the rim reservoirs because flow in the tributaries is "primarily controlled by the three rim dams on these rivers." (SED, at 6-1.) This statement is not supported. The SED does not support this statement by identifying the extent that upstream facilities influence or control flow. There are several regulating reservoirs above the upstream dams that are a part of the flood control system on the tributaries. The SED must be revised to identify these facilities and evaluate the impact of the proposed project considering the upstream system.

2. The SED bases its analysis of flooding and erosion on average water years. The SED fails to evaluate flooding, sediment, and erosion in wet and high flow years when potential impacts would be greatest. The SED should be revised to analyze the proposed project's impact on flooding, sediment, and erosion in wet years.

3. The SED is not clear regarding floodplain habitat. The SED recognizes the flows that are necessary to increase wetted surface area along the Tuolumne and Merced Rivers are higher than the maximum flow rates required to protect from flooding. (SED, at 6-13; 6-15.) In addition, the SED discloses the proposed project will waive unimpaired flow requirements during periods of

potential flooding. However, the SED does not affirmatively conclude that the proposed project will not result in any floodplain inundation. The SED must be revised to be clear that the proposed project will not result in floodplain inundation.

4. The SED is not clear regarding turbidity. The SED recognizes flows required to increase turbidity are higher than the maximum flow rates required to protect from flooding. (SED, at 6-13; 6-15.) In addition, the SED discloses the proposed project will waive unimpaired flow requirements during periods of potential flooding. However, the SED does not affirmatively conclude that the proposed project will not result in any increased turbidity. The SED must be revised to be clear that the proposed project will not result in increased turbidity.

5. The Technical Report states benefits such as "increased complexity and diversity of the channel, riparian, and floodplain habitats, and mobilization of the streambed and upstream sediment" will result from a more natural flow regime. (App. C, at 3-50.) Chapter 6 specifically concludes the proposed project will not result in floodplain habitats, increased turbidity or other increases in the complexity and diversity of the tributaries. Chapter 6 does not analyze how the lack of these "benefits" will affect the ability of the proposed project to protect fish and wildlife beneficial uses. The SED must be revised to include this analysis.

6. The SED concludes that the LSJR Flow Objective would not "[e]xpose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam." (SED, at 6-19.) The SED provides no citation or analysis for this conclusion. The SED must provide adequate analysis for this assertion including an analysis of wet years in which flooding is more likely and damage is more severe.

7. The SED states, "The State Water Board would coordinate with federal, state and local agencies to determine when it is appropriate to waive the requirements." (SED, at 6-20.) Flood flow limits are foundational to the analysis of flood impact; the SED cannot adequately analyze impacts based on flooding without first determining the point at which unimpaired flow requirements will be suspended. The SED must provide this information and adequately analyze the associated impacts.

8. The SED's flood analysis is premised on the assumption that the proposed project would not result in any change in reservoir operation. (SED, at 6-22; 6-26.) This assumption is unfounded and unsupported. The SED must be revised to analyze the impacts of the proposed project on flood risk recognizing the proposed project will affect reservoir operation.

9. The SED concludes the proposed project will not "enhance" flows sufficiently to "contribute to levee instability." (SED, at 6-24.) The SED provides no citation or supporting analysis. The SED must be revised to provide adequate support or analysis for this conclusion.

10. The SED states, "because the flow objectives would cause minimal changes to storage, and would maintain the USACE flood reservation, there would not be any changes in flood-control releases during major flood events." (SED, at 6-26.) There is no support for this statement. None of the water quality objectives mandate the maintenance of reservoir levels and the State Water Board does not have the power to control reservoir operations. The SED must be revised to contain adequate analysis considering foreseeable methods of compliance; it is foreseeable that the proposed project will result in increased reservoir fluctuation.

11. The SED assumes the proposed project will not result in adverse seepage impacts. (SED, at 6-26.) This analysis is not supported. The SED does not analyze project impacts, but rather just concludes seepage will not be a problem. Further, it appears to be based on the analysis of average year impacts and does not consider the impacts of the proposed project in wet years. The SED must be revised to include an adequate seepage analysis that is based on information and consideration of wet year impacts.

CHAPTER 7

1. The SED fails to analyze the environmental impact of the proposed project on fish and wildlife. Specifically, the SED fails to analyze how the proposed project will benefit any specific fish species. This analysis is fundamental to determining whether the proposed project provides reasonable protection to fish and wildlife. In addition, this analysis is required to weigh and balance the factors required by Water Code section 13241. The failure of the SED to clearly demonstrate the specific benefit the proposed project will have on fish and wildlife species is a

fundamental flaw. The SED must be revised to analyze the proposed project's benefits to fish and wildlife.

2. The SED makes the sweeping generalization that increased flow will provide benefits to fish and wildlife. The SED does not analyze whether increased flows may, at some level, adversely impact fish and wildlife species. The SED does not analyze whether the timing or quantity of flow will adversely impact any aquatic species. The SED must be revised to include this analysis.

3. The SED approach to environmental analysis of aquatic species is unclear. The SED explains it "evaluates expected impacts by comparing the occurrence and potential occurrence of fish species populations and their critical life stages relative to changes in the magnitude, timing, frequency and duration of flows." (SED, at 7-1.) It is unclear what is meant by the "occurrence and potential occurrence" of populations. It is unclear which fish species the SED is analyzing. It is unclear whether the SED intends to analyze all impacts – both positive and negative. The SED must be revised to clearly describe the analysis of aquatic species.

4. The SED states that "fish species are the aquatic resource most sensitive to changes in flow." (SED, at 7-1.) The SED provides no citation or support for this statement. This statement does not consider phytoplankton, zooplankton, and micro-organisms that are much more sensitive to flow compared to fish. The SED must be revised to delete this statement or otherwise provide support for this statement.

5. The SED describes steelhead populations in the LSJR as non-viable. (SED, at 7-29.) The SED does not include further analysis regarding the application of the proposed project to non-viable species. Because the narrative objective requires protection of only viable species, further analysis on the protection of steelhead is necessary. The SED must be revised to analyze the extent to which the proposed project protects steelhead populations.

6. The basis for the SED's environmental review of the proposed project's impact on aquatic resources is the assertion that "a number" of "experimental investigations" "suggest that flow in the SJR and major tributaries has a major influence on juvenile salmon survival between March and June." (SED, at 7-30.) The SED cites the Technical Report in support of this statement.

The Technical Report does not provide support for this statement. Further, even if the Technical Report did support this statement, the "suggestion of experimental investigations" does not provide a sufficient scientific basis for changing water quality objectives. The SED must be revised to delete this statement and revise any environmental analysis that relies upon it.

7. The SED cites a study stating that "the presence of striped bass in a river system near California's San Francisco Bay region resulted in estimated losses of 11-28 percent of native fall-run Chinook salmon." (SED, at 7-32.) This study is from 1999. This is not the best available science. There are volumes of more recent and more credible predation studies on the tributaries and the LSJR. The SJTA has provided many of these reports to State Water Board staff. These studies and reports indicate mortality of salmon smolts due to predation is significantly greater than 28 percent – estimating losses in the mid-90 percent range. The SED must be revised to identify this information and properly analyze the impact of predation.

8. The SED recognizes that small unscreened Delta diversions have the "potential to directly remove fish from the channels and alter local movement patterns." (SED, at 7-44.) Despite this acknowledgement, the SED contains no mitigation measures dealing with Delta diversions. The SED must be revised to include feasible mitigation measures dealing with the impact of Delta diversions on aquatic species.

9. The SED analysis of aquatic resources is based on median flows. (SED, at 7-58.) The SED states that median flows are used because they are a "useful benchmark" for detecting significant changes. (*Id*.) This is unsupported and analysis reliant on median flow data is insufficient and contradictory to the stated project purpose. The project purpose is to provide flows that mimic the fluctuation of the natural hydrograph. The fact that the SED fails to evaluate any fluctuation at all is contradictory to the project purpose. Further, the lack of evaluation of different water year types fails to provide sufficient information regarding the environmental impacts of the proposed project.

10. Table 7-2 states that Central-V alley spring-run Chinook salmon are in the plan area. (SED, at 7-9.) This is not correct; there are no spring-run Chinook in the plan area. The SED must be revised to reflect that the plan area does not support spring-run Chinook.

11. Figure 7-1 is mischaracterized by the SED. The graph represents the escapement of fish – which are fish returning to the system. The graph assumes all returning fish are natural, which is an assumption that is not supported and is contradicted by recent studies which show that almost half of the fish returning to the Stanislaus and Tuolumne Rivers are hatchery fish, despite the fact that there are no hatcheries on these rivers. In addition, the graph does not disclose or analyze the number of fish taken by ocean harvest. The SED must be revised to adjust Figure 7-1 to reflect the above information.

12. The SED includes a discussion of exports and entrainment. (SED, at 7-44.) These issues have been noticed for the Phase 2 process, are not relevant to setting LSJR flows, and are not relevant. The SED must be revised to delete this section.

13. The SED asserts that wetted surface area serves as a general indicator of habitat availability. (SED, at 7-58.) This is not correct. Effective rearing, spawning and outmigration habitat each require specific suitable attributes, which are distinct from general wetted surface area. The SED must be revised to delete this assertion and all analysis reliant thereon.

14. The SED sets forth the threshold of significance for aquatic resources by stating "it is assumed that a change in median flows of 10 percent or more would be sufficient to result in a measureable or significant long-term response in populations." (SED, at 7-67.) This threshold is unclear and unsupported. The SED does not provide any citation or explanation supporting this threshold. It is unclear whether the SED is asserting that this threshold will capture all significant impacts. Certainly, there would be some impacts from dry or consecutive dry years that would not be accounted for because only the median flows are analyzed. In addition, it is unclear whether the SED is stating that this threshold will identify all measurable impacts or all significant impacts; there is a significant difference. It is not clear which populations the SED is referring to. It is not clear whether the SED is referring to all fish populations, or just the ones previously diverting water.

Most strikingly, the threshold for aquatic species must measure a benefit to aquatic species (abundance, population, smolt survival, etc.); it cannot be a measure of flow. The SED must be revised to develop a supportable threshold of significance for aquatic species.

15. The analyses in AQUA-1 and AQUA-2 are not supported and are incorrect. Both analyses are based on the conclusion that the proposed project will not result in increased reservoir fluctuation. This conclusion is a direct result of the WSE's incorrect operational assumption that reservoir levels will be unchanged. There is no support for the assumption that the proposed project will not affect reservoir operations. The SED must be revised to reanalyze the impact of reservoir habitat without the assumption that reservoir levels will remain unchanged.

16. The SED threshold of significance of 10 percent reservoir fluctuation is not supported. Scientific data indicates reservoir reduction of more than six feet within a 30-day period during bass nesting would result in significant effects on bass reproduction and the bass population sustainability. The SED must be revised to identify other reservoir threshold impacts on aquatic resources and support the identification.

17. The SED states, "Because LSJR Alternatives 2, 3, and 4 provide for adaptive management, it was assumed that if flows were reduced in any one month that as long as the median flow for the entire February–June period were not less than baseline conditions, flows would be adaptively managed to avoid impacts fish and wildlife [sic]." (SED, at 7-67.) This is an unfounded assumption. It is not cited, supported or otherwise explained. The assumption that impacts can be avoided is not supported. The purpose of adaptive management is not to ensure protection; it is to measure the efficacy of the project. The SED makes this assumption to avoid analyzing project impacts to the environment – this is the purpose of an environmental document. The SED must be revised to analyze the impacts of the proposed project and delete all reliance on protection supposedly provided by adaptive management.

18. The analysis in AQUA-2 (coldwater habitat) is not supported and is incorrect. The SED does not accurately describe the impact of the proposed project to the coldwater pool in Lake McClure. Modeling performed as part of the FERC process on the Merced River shows that the

coldwater pool will be dramatically reduced as a result of the proposed project. The SED must be revised to analyze the modeling performed by Merced Irrigation District pursuant to the FERC process and revise the impact on coldwater fisheries accordingly.

19. The analysis in AQUA-3 (spawning, rearing, migration) is not supported and is incorrect. The needs of spawning, rearing and migration habitat are not always the same. The SED lumps the analysis of these three distinct fishery attributes together. The SED must be revised to separate the analysis and evaluate the environmental impacts of spawning, rearing and migration habitat separately.

20. The analysis in AQUA-3 (spawning, rearing, migration) is not supported and is incorrect. The term migration habitat is not defined, is not a common industry term and the baseline for migration habitat is not provided. The SED must be revised to define what migration habitat is and provide sufficient information to understand the baseline migration habitat.

21. The analysis in AQUA-3 (spawning, rearing, migration) is not supported and is incorrect. Each SJR tributary has undergone extensive IFIM studies, which have set the maximum flows for optimal rearing habitat. The SED does not reference, explain or otherwise analyze the existing rearing habitat information. The SED must be revised to include the IFIM information and data.

22. The analysis in AQUA-3 (spawning, rearing, migration) is not supported and is incorrect. The SED estimates how the proposed project will increase flow, but does not include analysis regarding how the proposed project will impact the quality or quantity of spawning, rearing or migration habitat. The SED must be revised to disclose and analyze the proposed project's impact on spawning, rearing, and migration habitat.

23. The analysis in AQUA-3 (spawning, rearing, migration) fails to identify or analyze the results of the Merced Irrigation District's FERC modeling. Merced Irrigation District modeled the likely changes in flow and temperature during the Chinook salmon upmigration and spawning-incubation period from the proposed project. These results need to be included in the SED evaluation as they represent a change in conditions that could decrease spawning success, egg

viability, life stage periodicity and ultimately delay emigration timing. The SED must be revised to consider the modeling results from Merced Irrigation District.

24. The SED acknowledges that outmigration concludes in May. There is no analysis regarding the benefit of regulating June flows. The SED must be revised to include this analysis.

25. The SED concludes "insufficient water would be available for adaptive management" if Alternative 2 were adopted. (SED, at 7-76.) This is unclear; the SED does not explain why the quantity would be insufficient. It is also irrelevant; whether flows will facilitate the State Water Board's adaptive management program is not an impact to the environment. The SED must be revised to delete this statement and all reliance on adaptive management to provide protection to aquatic resources.

26. The analysis in AQUA-4 (temperature) is not supported and is incorrect. In the summary of impact thresholds, the SED states it uses the USEPA temperature criteria. (SED, at 7-55.) This is not correct. The analysis is based on thermal criteria used in the LSJR Water Temperature Model and Analysis. (SED, at 7-85.) The criteria in the LSJR Water Temperature Model were developed for the purpose of comparing simulated alternatives and are not agreed-upon or binding requirements. The SED must be revised to analyze the impacts of the proposed project on the USEPA temperature criteria.

27. The analysis in AQUA-4 (temperature) is not supported and is incorrect. The SED does not identify temperature levels that may be harmful to fish, nor does it analyze the extent of the potential harm to aquatic resources. The SED does not analyze how the proposed project will impact temperature. The SED must be revised to include the disclosure and analysis above.

28. The analysis in AQUA-4 (temperature) is not supported and is incorrect. The SED does not analyze which temperature levels can be controlled with flow. There are several temperature requirements (59 degrees in May for smoltification and 64 degrees in September for migration) which cannot be achieved with the release of flow. The SED must be revised to consider the limits of flow and whether the temperature requirements can be achieved.

29. The analysis in AQUA-4 (temperature) is not supported and is incorrect. The SED does not disclose the baseline temperature conditions on each of the tributaries, nor does it analyze the temperature impacts from the proposed project. To the extent the proposed project will result in temperature changes, the SED must analyze the resulting impacts to rearing and emigration of Chinook salmon. The SED must be revised to include this analysis.

30. The SED includes temperature exceedence tables. (SED, 7-87 to 7-88.) These tables include exceedence points outside the January to June timeframe of the proposed project. These exceedences will not be affected by the proposed project and are therefore irrelevant. The SED must be revised to delete the irrelevant material of exceedences outside the project time frame.

31. The SED includes an analysis of temperature impact on spawning and incubation. (SED, at 7-89.) The temperature criteria being analyzed are all outside the time period of the proposed project and are not relevant. The SED should be revised to delete the spawning and incubation temperature analysis.

32. The SED assumes that Alternative 3 will increase flow and therefore improve temperature. (SED, at 7-85.) This assumption is contradicted by the data in the SED. The comparison of the exceedence charts for the baseline and Alternative 3 show that in the vast majority of the months, temperatures are unchanged by the proposed project. In fact, in some months Alternative 3 increases temperature slightly. The SED must be revised to disclose the fact that at 40 percent of unimpaired flow there are no temperature benefits.

33. The analysis in AQUA-5 (pollutants) is not supported and is incorrect. The SED does not identify the baseline pollutants in each tributary, nor does the SED identify that pollutants are a problem on the tributaries. The SED must be revised to identify the baseline pollutant condition on each Tributary, determine if pollutants are a problem, and, to the extent applicable, identify the extent to which baseline pollutant conditions affect aquatic resources.

34. The analysis in AQUA-5 (pollutants) is not supported and is incorrect. The SED admits it does not have sufficient information to analyze the impacts of pollutants on fish. Specifically, the SED states that “direct effects on fish cannot be accurately or precisely quantified

for the LSJR alternatives given the current understanding of the complex process involved in mobilizing sediment-linked toxins." This section goes on to equivocate about possible scenarios, however, the SED is unable to provide any valuable analysis due to lack of information. Further, if pollutants impact fish species, the State Water Board or Regional Water Boards must address this issue through pollutant regulation, not the regulation of flow. The SED must be revised to delete this section; it is admitted conjecture, it is uninformative and not supported.

35. The analysis in AQUA-5 (pollutants) is not supported and incorrect. The SED does not identify which pollutants may be harmful to fish, nor does it analyze the extent of the potential harm. The SED does not analyze how the proposed project will impact the type of pollutants, the time period of exposure, or the impacts to fish from exposure. The SED must be revised to include the disclosure and analysis above.

36. The analysis in AQUA-6 (mobilization) contradicts other analysis in the SED. Chapter 6 of the SED concludes the proposed project will result in little, if any mobilization. The SED must be revised to include this analysis in AQUA-6.

37. The analysis in AQUA-7 (dewatering stranding) is not supported and is incorrect. The SED does not provide a baseline for existing dewatering or stranding. Without the provision of a baseline, the SED cannot properly determine the impact of the proposed project on stranding. The SED must be revised to provide a baseline or description of existing dewatering and the impact of this dewatering on fish survival.

38. The analysis in AQUA-7 (dewatering stranding) is not supported and is incorrect. Stranding and dewatering is an issue very specific to each tributary and specific reaches within each tributary. The SED analyzes dewatering generally and does not analyze dewatering by reach, which provides very little information regarding how the proposed project will impact dewatering. The SED should be revised to delete this section or provide analysis of dewatering and stranding by reach.

39. The analysis in AQUA-7 (dewatering stranding) is not relevant to the proposed project. The SED states that its analysis of dewatering impacts was "based on a median reduction of

1 foot or more during the primary Chinook salmon and steelhead incubation season (October-March).” (SED, 7-108.) The timeframe for analyzing the dewatering issue shares only two months with the proposed project. Thus, the analysis is largely irrelevant. The SED must be revised to delete this section.

40. The analysis in AQUA-7 (dewatering stranding) is not supported and is incorrect. The SED does not analyze the impact of the proposed project on stranding. The SED does not analyze the impact of stranding on fish populations. The SED must be revised to demonstrate and analyze the relationship between the proposed project, dewatering and fish populations.

41. The analysis in AQUA-9 (food web) is not supported and is incorrect. The SED does not provide a baseline for existing food web support. Without the provision of a baseline, the SED cannot properly determine the impact of the proposed project on the food web. The SED must be revised to provide a baseline or description of existing status of food web support and the impact this issue has on fish survival.

42. The analysis in AQUA-9 (food web) is not supported and is incorrect. The SED does not analyze the impact of the food web on fish populations. The SED must be revised to demonstrate and analyze the relationship between the food web and fish populations.

43. The analysis in AQUA-9 (food web) is not supported and is incorrect. The SED does not analyze what food is currently available, which food sources could be increased, the relationship between life-stage and food needs, or whether there is a lack of food availability. The SED must be revised to disclose this information and analyze how the proposed project would impact the issues above.

44. The analysis in AQUA-10 (predation) is not supported and is incorrect. The SED does not provide a baseline for existing predation. Without the provision of a baseline, the SED cannot properly determine the impact of the proposed project on predation. The SED must be revised to provide a description of existing predation and the impact predation has on fish survival.

45. The analysis in AQUA-10 (predation) is not supported and is incorrect. The SED drastically underestimates the baseline impact of predation by stating predation “pressures” are

"considerable." (SED, at 7-114.) The SED must be revised to disclose the magnitude of predation on salmon populations.

46. The analysis in AQUA-10 (predation) is not supported and is incorrect. The SED makes general statements regarding temperature and available habitat increasing "prey vulnerability." (SED, at 7-115.) The SED does not analyze the extent to which prey vulnerability results in increased mortality from predation. The SED must be revised to analyze how the estimated increase in prey vulnerability affects fish mortality.

47. The analysis in AQUA-10 (predation) is not supported and is incorrect. The SED surmises that increased water temperature and increased prey vulnerability may be responsible for increased mortality due to predation. The SED fails to compare predation and prey mortality rates in areas that meet and do not meet temperature standards. Without this analysis, the SED cannot conclude that temperature impacts predation. The SED must be revised to include this analysis or analyze the impact of the proposed project directly on predation, rather than using temperature as a surrogate.

48. The analysis in AQUA-10 (predation) is not supported and is incorrect. The SED does not analyze how the proposed project will impact predation. The SED must be revised to analyze how the proposed project will impact predation.

49. The analysis in AQUA-11(disease) is not supported and is incorrect. The SED does not provide a baseline for existing disease. Without the provision of a baseline, the SED cannot properly determine the impact of the proposed project on disease. The SED must be revised to provide a baseline or description of existing disease and the impact on fish survival.

50. The analysis in AQUA-11(disease) is not supported and is incorrect. The SED does not provide any analysis regarding the impact disease will have on fish populations. The SED must be revised to demonstrate and analyze the relationship between disease and fish populations.

51. The analysis in AQUA-11(disease) is not supported and is incorrect. The SED only analyzes disease in terms of temperature. Disease is a function of age, health, food, toxins, genetic

variance, and other factors. The SED does not consider or analyze these factors related to disease. The SED must be revised to analyze these factors within its analysis on disease.

52. The analysis in AQUA-12 (transport) is not supported and is incorrect. Salmon smolts are volitional swimmers and swim faster than the velocity of the flow in the LSJR and the Tributaries. The SED fails to include this fact in its analysis of transport. The SED must be revised to address this issue in the transport analysis.

53. The analysis in AQUA-12 (transport) is not supported and is incorrect. The SED assumes that decreased travel time to and through the Delta will benefit fish. However, the SED does not analyze the impact of reduced travel time or provide scientific support for this assumption.

54. The SED states that "the overall availability of water appears to be sufficient in most years to adaptively manage flows to optimize spring rearing and outmigration conditions for juvenile salmonids." (SED, at 7-122.) The SED provides no support for this statement. Furthermore, the SED cannot assume adaptive management will provide reasonable protection; adaptive management is not intended to provide protection, but to evaluate whether the protection offered is effective. The SED must be revised to remove all reliance on adaptive management and its protection of aquatic resources.

55. The analysis in AQUA-13 (south delta/estuarine habitat) is not supported and is incorrect. The SED fails to disclose the baseline of southern Delta diversions. (SED, at 7-123.) Without understanding the quantity of water diverted in the southern Delta, it is not possible to measure the impacts of the proposed project on the Delta estuary.

56. Chapter 7 is generally deficient because it does not identify measurable mechanisms or end goals the State Water Board believes will provide reasonable protection. For example, the SED does not identify the location, depth, duration or other qualities of floodplain habitat that will provide reasonable protection for native fish. The SED must be revised to identify the mechanisms through which the State Water Board proposes to reasonably protect aquatic resources.

57. Chapter 7 includes several references to steelhead on the Merced River. There is no evidence that a steelhead population currently exists in the lower Merced River. The SED must be revised to accurately describe the current status of steelhead on each of the tributaries.

58. The SED cumulative impacts section is deficient. The cumulative impacts analysis does not identify any specific existing or future project. Instead, the SED states that aquatic resources have been impacted by "primarily human-caused factors, including the introduction of nonnative fish species; highly altered flow regimes and substantial flow reductions; isolation of floodplains from the river channel by channelization and levee construction; substantial reductions in the frequency, magnitude, and duration of floodplain inundation; creation of false migration pathways by flow diversions; and poor water quality." (SED, at 7-127.) Despite this recognition, the SED fails to evaluate any of these impacts together with the impacts of the proposed project. The SED must be revised to include a sufficient cumulative impacts section that identifies projects that have affected aquatic resources and analyzes the cumulative impacts of the proposed project in conjunction with the existing projects.

CHAPTER 8

1. The SED concludes that the proposed project "could indirectly affect or conflict with the HCP by reducing the habitat value of conserved lands adjacent to the Stanislaus River." (SED, at 8-40.) The SED does not disclose what provisions of the HCP could be violated, nor does it analyze how reduced flows would negatively impact the "habitat value." The SED must be revised to provide this information and analysis.

2. The SED states, "This alternative is expected to contribute to reductions in habitat necessary for special-status species on the Stanislaus River." (SED, at 8-42.) This conclusion is completely devoid of analysis and information. The SED does not explain why or how the alternative will contribute to habitat reductions, does not state which species will be affected, and does not state to what extent the species will be affected. The SED must be revised to provide this information and analysis.

CHAPTER 9

Section 9.2.2.

1. The SED does not analyze the proposed project's impact on groundwater caused by the reduction of irrigation water deliveries. The regional groundwater recharge from the application of surface water to crops is significant, estimated to be as much as 375,000 afa in some basins. Thus, the proposed project's impacts on groundwater recharge caused by irrigation restrictions are likely to be substantial. The SED must be revised to include this analysis.

2. The SED states that each of the sub-basins in the plan area "may be generally in balance, although the Eastern San Joaquin Sub-basin appears to have a greater overdraft condition." (SED, at 9-10.) This is not correct, not clear and does not provide sufficient information. The Eastern San Joaquin County Basin is critically over-drafted. The SED must be revised to include specific information regarding over draft for each basin in the plan area.

3. The SED states that it did not analyze the proposed project's impacts on groundwater overdraft because there is "limited information for evaluating the possible decline in groundwater elevations." (SED, at 9-21.) The SED does not provide any explanation or support for this statement. The statement is untrue; there is significant information available which would allow the State Water Board to analyze the environmental impacts of the proposed project on groundwater overdraft. The SED must be revised to include this analysis.

4. The SED does not analyze the geomorphologic impacts from increased groundwater and decreased recharge. The regional sub basins develop a cone of depression when groundwater is over-drafted. The SED must disclose this impact and analyze the proposed project's impact on the development, deepening and widening of cones of depression.

Section 9.4.

1. The SED states there is limited information regarding declining groundwater elevations. (SED, at 9-21.) This is untrue. The SJTA members have access to volumes of information regarding their regional groundwater basins. The SED must be revised to identify this information and include it in the groundwater analysis.

2. The SED states, "These increased water supply deficits (increased pumping) were allocated to the groundwater subbasin based on the percentage of land for each irrigation district within the subbasin." (SED, at 9-22.) The approach assumes that each district relies on groundwater equally. This implied assumption is not supported by evidence or analysis. The SED must be revised to use an adequate method for determining the expected degree of increased pumping for each district, or must support its current method with evidence and analysis.

3. The SED states, "Because it generally costs more to irrigate with groundwater than with surface water due to the cost of pumping equipment and energy, groundwater may be delivered more efficiently than surface water supplies (e.g., delivered through sprinkler and drip irrigation)." (SED, at 9-23.) This conclusion makes no sense and assumes water is not already being delivered by efficient methods. The SED must be revised to delete this sentence and all analysis reliant thereon.

4. The SED concludes there would be no significant impacts under the no-project alternative. This is not correct. Because the no-project analysis is based on the WSE Model and the WSE Model includes operational assumptions that would not exist if the State Water Board decided not to take action, the no-project alternative does reflect changes to the existing physical environment. For example, the no-project alternative assumes the irrigation districts would reduce water delivery when they are not required to do so. The SED must be revised to analyze the no-project alternative without using the WSE Model.

5. The SED concludes there would be no significant impacts under Alternative 2; this is not correct. Because the Alternative 2 analysis is based on the WSE Model and the WSE Model does not properly model surface water delivery, the resulting groundwater analysis is also flawed. The SED must be revised to correct the WSE Model or properly analyze the Alternative 2 project impacts.

6. The SED states it is "not expected that the impact to groundwater resource in these sub basins would occur at the same time as an impact or reduction to overall water supply." (SED, at 9-26.) This is unclear, unsupported, and counterintuitive. The impact to groundwater would, in fact, occur at the same time water supplies are reduced. The proposed project proposes to reduce

water deliveries, which will increase groundwater pumping at the same time other water supplies are reduced. The SED must be revised to delete this statement and analyze the impact the proposed project will have on groundwater.

CHAPTER 10

1. The SED recognizes the proposed project will "increase in the frequency of inundation of on-bank recreation areas during the recreation season (May and June)," however, the SED concludes that "this inundation would not significantly degrade the functionality of the facilities." (SED, at 10-30.) This conclusion is not supported or explained. The SED does not provide citation in support of this conclusion, nor does the SED disclose information and explain how it came to this conclusion. The SED must be revised to include the information necessary to make this conclusion and analyze the information in the SED.

2. The SED concludes that the "changes in elevation at the reservoirs would not render existing recreation facilities inoperable." (SED, at 10-30.) These conclusions are not supported or cited. It appears the basis of the conclusion is the assumption that the proposed project will not result in increased reservoir fluctuation. This is unsupported and untrue. The SED must be revised to analyze the impacts of the proposed project to recreation, recognizing that the proposed project will increase reservoir fluctuation.

CHAPTER 11

1. The foundation of the SED analysis of agricultural impacts is the WSE Model. As more fully set forth above, the WSE Model is fatally flawed and cannot be used to evaluate the impact of the proposed project. The SED must be revised to correct the fundamental deficiencies of the WSE model and revise the resulting agriculture analysis based on this correction.

2. The SED analyzes the proposed project impacts to agriculture in an average water year. The SED does not analyze the impacts of the proposed project to agriculture in dry or consecutive dry years. The SED must be revised to include an analysis of the impacts of the proposed project to agriculture in dry and consecutive dry years.

3. The SED agriculture analysis is fundamentally flawed. The analysis is based on several unsupported assumptions that are input into the SWAP Model. For example, the SWAP model assumes that low value crops will be taken out of production before high value crops. This assumption is contrary to water right priority and shortage provisions of the local districts. The SED must be revised to ensure any modeling assumption or input does not require the violation of law. Specifically, the SED must be revised to delete the assumption that low value crops will be fallowed before any other crops.

4. The SED agriculture analysis is also incorrect because it relies on the SWAP model units 11, 12, and 13, rather than the plan area. The SED recognizes that the SWAP unit geography is not a perfect fit to the proposed project's plan area. However, the SED does not evaluate how this mismatch will affect its environmental analysis. The SED must be revised to evaluate how the differences between the SWAP unit geography and the plan area affect the environmental analysis.

5. The geographic mismatch between the SWAP units and the plan area renders much of the SED analyses deficient. There are basic problems with the gross acreage in the SWAP unit area. Table 11-2 depicts the total number of acres in units 11, 12 and 13 as approximately 1,789,825 acres. In contrast, the irrigated acreage of the plan area is approximately 530,825 acres. (SEWD 50,980; CSJWCD 55,100; SSJID 48,110; OID 57,068; MID 59,153; TID 144,426; MeID 115,988). This vast difference in irrigated acreage results in several problems. First, it greatly skews the percent of agriculture impacted by the proposed project. The SED estimates that under Alternative 3, the proposed project will only fallow about 11 percent of the irrigated agriculture based on the large acreage under the SWAP Model. However, applying the reduction of irrigated agriculture to the plan area, Alternative 3 would result in a 25 percent reduction of irrigated agriculture. If you further adjust this percentage to reflect the SED conclusion that Alternative 3 would not impact irrigated agriculture that relies on deliveries from the Stanislaus River, Alternative 3 would fallow more than 40 percent of the irrigated agriculture in the region. The difference between fallowing 11 and 40 percent of irrigated agriculture is vast. The SED must be revised to disclose the actual

localized impact of removing irrigated agriculture and the environmental and economic impacts this will have on the region.

6. Another result of the geographic mismatch is overestimation of low value crops. Table 11-14 provides acreage by crop of the SWAP units 11, 12, and 13. (SED, at 11-24.) The SED fails to disclose the acreage by crop type in the plan area. The acreage set forth in Table 11-14 overestimates the acreage of low value crops in the region. This overestimation results in the SED incorrectly assuming there is sufficient acreage of low value crops to cover the fallowing required by the proposed project. Based on this incorrect assumption, the SED concludes the proposed project will not impact high value crops. Because the SED does not estimate the acreage of low value crops in the plan area, this assumption is not supported. The SED must be revised to disclose the acreage of low value crops in the plan area and, specifically, in the area that will be affected by the proposed alternative.

CHAPTER 13

1. The SED fails to analyze how the proposed project will impact local irrigation districts. The SED must be revised to include this analysis.

2. The SED fails to analyze how the proposed project will affect stranded capital costs. The SED must be revised to include this analysis.

3. The SED analysis under the Stanislaus River does not take into account the rules of water right priority. Under the no project alternative and the baseline, the modeling takes water from OID and SSJID, even though they are entitled to the first 600,000 af of inflow. By not recognizing the rules of water right priority the SED does not analyze the disproportionate impact to CVP contractors. The SED must be revised to include this analysis.

4. Table 13-2 is not correct. The USBR does not contract to deliver water to OID/SSJID. (FN 1.) MID delivers 30,000 af of treated surface water to the City of Modesto and will deliver 65,000 af when Phase II of the water treatment plant is completed. (FN 3.) The CCSF does not store water in New Don Pedro. Water stored in New Don Pedro is done so pursuant to MID/TID permits and licenses. (FN 4.) The SED does not understand how the Fourth Agreement works. (FN

4.) The SED must be revised to correct Table 13-2 and correct the analysis that relied upon the incorrect information.

5. The SED's explanation of the contract between MID and the City of Modesto is deficient. (SED, at 13-25.) The contract requires that when MID reduces deliveries to its landowners, there will be proportional reductions to the City of Modesto. This information was provided to State Water Board staff in April. The proposed project will reduce surface water provided to the City of Modesto and this reduction may negate the need for the new treatment facility, which will strand capital costs. Neither of these results is analyzed in the SED. The SED must be revised to analyze these impacts.

6. The SED does not analyze the proposed project's impact on the cost of treated water. The issue on the Stanislaus and Tuolumne Rivers is not building additional water treatment facilities, which will be stranding major capital costs at SEWD, SSJID and MID for under-utilizing the treatment plants that have already been constructed. Since less water is being treated, the costs of delivered water will go up to cover capital costs so the bonds can be repaid. The SED must be revised to include this analysis.

7. The SED recognizes the proposed project may result in the reduction of surface water supply to service providers. (SED, at 13-33.) In response to this reduction, the SED states that service providers "may need to construct or expand new water treatment facilities or water supply infrastructure in order to accommodate the reduction in surface water supply." (*Id.*) This analysis is deficient. It makes little sense for service providers to expand infrastructure if they will be treating and moving less water. The SED must be revised to delete this section or further explain its analysis.

8. The SED suggests that service providers may forge expanded conjunctive use programs by using "agricultural fields that are out of production" to recharge groundwater basins. (SED, at 13-34.) This analysis is deficient and not well thought out. The SED is stating that the proposed project will fallow agricultural fields, but that service providers will be able to use these fields to recharge the groundwater basin. The source of water for recharge is unclear. It is also

unclear why the field is out of production if there is available water. The SED must be revised to delete this section or include the appropriate analysis.

9. The SED fails to analyze the proposed project's impact on service provider pricing. Many of the service provider costs to provide water are set costs that cannot be reduced by volume. Therefore, if the proposed project reduces the quantity of water service providers are providing, the cost of that water increases. The SED does not analyze this impact. The SED must be revised to include this analysis.

CHAPTER 14

1. The WSE Model sets the foundation for hydropower analysis in the SED. Because the WSE is deficient, these deficiencies infect the hydropower analysis and render it deficient as well. This deficiency results in the SED failing to adequately analyze the hydropower impacts of the proposed project. Based on the flawed assumption that the proposed project will not change reservoir levels, the SED performs very little analysis regarding hydropower. The SED must be revised to correct the WSE Model, delete the assumption that reservoir levels will remain unchanged and perform a hydropower analysis that analyzes the true environmental impacts of the proposed project.

2. The SED calculates the timing and amount of energy generated as averaged over an 82-year period. The resulting analysis is deficient and contradicted by other information in the SED. For example, Appendix F recognizes that "[r]eservoir storage and release is used for calculation of hydropower generation effects[.]" (Appendix F, at 1-27) Appendix F includes graphs which highlight the severity of lack of storage during dry years, which will correspondingly result in impacts to hydrogeneration. The SED does not analyze how the proposed project will impact hydropower in dry years. This is a significant deficiency. The SED must be revised to analyze the proposed project's impact to hydropower in dry and consecutive dry years.

3. The SED's analysis of hydropower impacts looks at impacts over the course of the year. (SED, at Table 14-9.) This approach is deficient. Hydropower is measured and regulated in 15 minute increments. Hydropower impacts change due to periods of peak supply and demand over the

course of each day; analyzing the impacts on an annual level is meaningless. The SED must be revised to analyze the impacts of increasing flows in the February through June period on hydropower generation.

4. The SED does not consider supply and demand driven impacts of hydropower. The spring season is a high production period for wind and Pacific Northwest hydropower generation which drives down value and price. The summer months are high demand months which drive costs up, especially when those sources will need to be purchased elsewhere. Therefore, in addition to compensating for lost generation during the summer months, ratepayers will have to purchase power during those summer months when costs are higher. The SED must be revised to analyze the hydropower supply, demand, and purchasing impacts of the proposed project.

5. The SED fails to consider the increased power demand from the proposed project. Chapter 9 of the SED recognizes the proposed project will increase groundwater pumping. This pumping requires power. The energy resources chapter of the SED must be revised to disclose this increase and analyze the environmental impacts from the increased pumping.

6. The SED only analyzes the state-wide impact on energy resources and does not analyze the regional impact. The regions in the plan area are already energy deficient. The SED does not analyze the additional costs and impacts of the proposed project to regional energy deficient areas. The SED must be revised to include this analysis.

7. The SED fails to analyze the proposed project's impact on the Governor's Clean Energy Jobs Plan. This Plan requires building 12,000 megawatts of localized electricity generation, and building 8,000 megawatts of large scale renewables and necessary transmission lines by 2020. The SED not only ignores these statewide policies, but stands to thwart the plan's objectives by decreasing localized hydrogeneration. The SED must be revised to analyze the impact of the proposed project on complying with the Clean Energy Jobs Plan.

8. The SED does not analyze the loss of flexibility from hydropower. The SED assumes that if generation during any given period time of year is reduced, adding generation to any other time of year will adequately make up for it. Most of the renewable energies are not stored and are

intermittent. For instance, wind and solar power are only available when it is windy or the sun is out. Hydropower, on the other hand, is a resource that can respond nearly instantaneously to consumer needs and is more constant and reliable than both wind and solar resources. The SED must be revised to analyze the loss of hydropower flexibility from the proposed project.

9. The SED fails to analyze the cumulative impacts of the proposed project and climate change. There are several available climate change models which the State Water Board can use to estimate the cumulative impacts of increasing climate change and the proposed project. The SED must be revised to include a proper climate change analysis.

CHAPTER 15

1. The SED no-project alternative does not include the NMFS BO Action IV.2.1, which requires minimum flows at Vernalis for the April 1-May 31 period. In addition, the no-project alternative does not include the NMFS BO Action III.1.2 regarding cold water releases to maintain suitable steelhead temperatures in the Stanislaus River. Each of these requirements will be in place if the State Water Board takes no action. For this reason, the SED must revise the no-project alternative to include these flows.

2. The SED models the impacts of the no-project alternative using the WSE inputs and assumptions. The deficiencies of the WSE Model make the no-project analysis similarly deficient. The SED must assume the existing method of operation would continue under the no project alternative. Instead, the no project alternative assumes that, although the State Water Board has not taken any action, the method of operations for the local districts will completely change. This assumption is unsupported and incorrect. The problem with this approach is demonstrated by the fact the SED assumes that under the no-project alternative, the water deliveries to local irrigation districts are significantly reduced. The SED must be revised to model the no-project alternative based on the existing local operations.

3. The SED no-project alternative fails to consider the rules of water right priority. Specifically, the SED models the no-project operation of the Stanislaus River by requiring proportional reductions to the USBR, OID and SSJID. OID and SSJID divert water pursuant to

water rights that are senior to the rights held by USBR. Therefore, the rules of water right priority would require the SED to employ an operations model that would reduce the USBR water diversions in their entirety before reducing the water to OID and SSJID. This seniority was recognized by D-1641 which regulates the rights of the USBR, but does not regulate the rights of OID and SSJID. The SED must be revised to model the no-project alternative in a manner that complies with the rules of water right priority.

CHAPTER 18

1. The SWAP model is run based on water supply impact outputs from the WSE Model. As more fully set forth above, the WSE Model is fatally flawed and cannot be used to evaluate the impact of the proposed project. The SED must be revised to correct the fundamental deficiencies with the WSE Model and revise the resulting agriculture analysis based on this correction.

2. The SED only analyzes the proposed project's economic impacts in the average water year. The SED does not analyze the impacts of the proposed project to agricultural economy in dry or consecutive dry years. The SED must be revised to include an analysis of the impacts of the proposed project to the economy in dry and consecutive dry years.

3. The SWAP model assumes that low value crops will be taken out of production before high value crops. This assumption is contrary to water right priority and shortage provisions of the local districts. The SED must be revised to ensure any modeling assumption or input does not require the violation of law. Specifically, the SED must be revised to delete the assumption that low value crops will be fallowed before any other crops.

4. The SWAP unit geography does not mirror the proposed project's plan area. Because the SWAP Model includes almost twice the acreage of the plan area, the SED analysis regarding the percent of land fallowed and the low value crop acreage is incorrect. The SED must be revised to analyze the economic impacts of the proposed plan in the plan area.

5. The SED estimates the proposed project will result in a reduction of approximately $69,000,000 in an average water year. The SED calculates this as only a -1.5 percent change. This is

not correct. Because the impact is more localized than estimated by SWAP, the local impact would be a reduction of 8 percent of the local economy, which is a loss of approximately $832,077,000. The SED must be revised to analyze the localized economic impacts in the plan area.

6. The SED uses the IMPLAN model to analyze the proposed project's impact on job loss. The IMPLAN Model is based on information generated by the WSE and SWAP Models. As more fully set forth above, the WSE Model is fatally flawed and cannot be used to evaluate the impact of the proposed project. The SED must be revised to correct the fundamental deficiencies with the WSE and revise the resulting agriculture analysis based on this correction.

7. The SED does not analyze the economic impacts from increased groundwater pumping. Regional electric costs to pump groundwater could range between $57.36 and $76.48 per acre foot. Additional operating costs, including labor, maintenance and replacement costs, are also highly variable and are based on the specific characteristics of a groundwater well and pumping components. The SED must be revised to analyze the costs of pumping groundwater due to the proposed project.

8. The SED estimates that a requirement of 40 percent of unimpaired flow will result in annual economic losses of approximately $265,000 based on fallowing 128,000 acres on the three tributaries. In his presentation to the State Water Board, Dr. Sunding noted that for every 100,000 acres that are fallowed on the west side or Kern County, the economic impact was about $300,000,000 per year. There seems to be a discrepancy between Dr. Sunding's estimates and the analysis in the SED. The SED must be revised to explain this discrepancy and correct the analysis in the SED.

9. The SED fails to analyze the proposed project's impact to CCSF. The SED recognizes CCSF may be affected by the proposed project. The rules of water right priority also indicate that CCSF will be impacted by the proposed project. The SED must be revised to identify and analyze the impacts of the proposed project on CCSF.

10. The SED fails to analyze the proposed project's impact to municipal water use. MID has an agreement to deliver surface water supplies to the City of Modesto. Reduction in MID

diversions will result in a proportional reduction to surface water deliveries to the City of Modesto. SSJID delivers water to municipalities and also employs proportional cutbacks for these users. The SED must be revised to identify and analyze the impacts of the proposed project on municipal water use.

11. The SED analysis on economic losses from recreation is incorrect. This analysis is based on the WSE Model assumption that reservoirs will not be impacted by the proposed project. However, without this assumption, modeling indicates the proposed project would have severe impacts on New Melones, causing it to empty in certain years. New Don Pedro and Exchequer would also experience severe and substantial reservoir fluctuation. The SED must be revised to identify and analyze the impacts of the proposed project on recreation without the assumption that reservoirs will remain unchanged.