

Appendix M

Summary of Public Comments on 2012 Draft SED

PHASE I SUBSTITUTE ENVIRONMENTAL DOCUMENT

SUMMARY OF PUBLIC COMMENTS ON THE 2012 DRAFT SED

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Acronyms and Abbreviations

AFRP	Anadromous Fish Restoration Program
BDCP	Bay Delta Conservation Plan
CAISO	California Independent System Operator
CCSF	City and County of San Francisco
CDFW	California Department of Fish and Wildlife
COG	coordinated operations group
CSJWCD	Central San Joaquin Water Conservation District
CVP	Central Valley Project
CVPIA-AFRP	Central Valley Project Improvement Act – Anadromous Fish Restoration Program
DFG	Department of Fish and Game
DO	dissolved oxygen
DWR	California Department of Water Resources
DWR Reliability Study	Department of Water Resources State Water Project Reliability Study
EC	electro-conductivity
FERC	Federal Energy Regulatory Commission
ILRP	Irrigated Lands Regulatory Program
ITP	Incidental Take Permit
LSJR	Lower San Joaquin River
MID	Modesto Irrigation District
NMFS BiOp	National Marine Fisheries Service’s Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project
NOP	Notice of Preparation
OCAP	Operations Criteria and Plan
OID	Oakdale Irrigation District
PKD	proliferative kidney disease
POD	Pelagic Organism Decline
POI	program of implementation
Reclamation or USBR	U.S. Bureau of Reclamation
RPA	Reasonable and Prudent Alternative
RSWSP	Regional Surface Water Supply Project

SED	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
SEWD	Stockton East Water District
SJR	San Joaquin River
SJR basin	San Joaquin River basin
SJRRP	San Joaquin River Restoration Program
SJTA	San Joaquin Tributaries Authority
SMART	Specific, Measurable, Achievable, Relevant, and Time-fixed
SSJID	South San Joaquin Irrigation District
State Water Board	State Water Resources Control Board
SWP	State Water Project
TMDL	Total Maximum Daily Load
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VAMP	Vernalis Adaptive Management Plan
WSE	Water Supply Effect Model
WSE Model	Water Supply Evaluation Model

Introduction and Overview

This document is a summary of public comment received by the State Water Resources Control Board (State Water Board) regarding the *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* (2012 Draft SED). The comment period ran from December 31, 2012, to March 29, 2013. The State Water Board received approximately 4000 responses. Of these, the State Water Board identified and selected 119 responses that covered the range of substantive comments; this summary only covers the comments in those 119 responses.

A response is a single, whole submission that may take the form of a letter, email, fax, or presentation at an organization-sponsored or other type of public meeting. Each response may contain anywhere from one to several hundred comments.¹ Many of the responses received were original responses submitted by individuals, agencies, and organizations, and some of the responses were form letters. The State Water Board intends to revise and recirculate the SED and therefore is not required to respond to all of the comments on this version of the SED. However, to assist in the revision of the SED prior to recirculation, the State Water Board has selected and analyzed the letters that cover the range of substantive comments. No out-of-scope letters were analyzed. This Summary of Public Comment on 2012 Draft SED is a narrative analysis of concerns raised in the responses. Material in quotation marks was selected from responses that reflect the tenor and type of a number of comments.

Although this analysis attempts to capture the full range of concerns raised, it should be used with caution. The respondents are self-selected; therefore, their comments do not necessarily represent the sentiments of the entire population. This analysis attempts to provide fair representation of the wide range of views submitted but makes no attempt to treat input as if it were a vote or a statistical sample. In addition, respondents' reasons for voicing these viewpoints are varied, subtle, or detailed. In an effort to provide a succinct summary of all of the concerns raised, many subtleties are not conveyed in this summary.

This Summary of Public Comment on 2012 Draft SED is divided into the following sections:

- Introduction and Overview
- Content Analysis Process
- Summary of Comments

Content Analysis Process

The goals of this content analysis process are to:

- Ensure that every selected response is considered.
- Identify the concerns raised by all selected respondents.

¹ Responses refer to single, whole submissions from respondents (e.g., letters, emails, faxes, presentations at public meetings). Comments refer to identifiable expressions of concern made within responses.

- Represent the breadth and depth of the public’s viewpoints and concerns as fairly as possible.
- Present those concerns in such a way as to facilitate the Managing Agencies’ consideration of comments.

Content analysis employs both qualitative and quantitative approaches. It is a systematic process designed to provide a mailing list of respondents, extract topics from each letter, evaluate similar topics from different responses, and identify specific topics of concern. The process also provides a relational database capable of reporting various types of information while linking comments to the original letters.

Throughout the content analysis process, the team strives to identify all relevant concerns, not just those represented by the majority of respondents. Breadth and depth of comment are important. In addition to capturing relevant factual input, the process identifies the relative emotion and strength of public sentiment behind particular viewpoints.

The Summary of Public Comment on 2012 Draft SED attempts to capture all significant concerns related to a project. However, it is only a summary. Content analysis summaries and reports are not intended to replace original letters.

Summary of Comments

The following summary of the comments received on the SED reflects respondents’ sentiment on a variety of issues both diverse and interrelated regarding the proposed changes to management of the Bay-Delta. These issues range in nature from the strictly procedural to the technically specific. Public comment on these issues demonstrates the interest, feelings, and concern Californians have regarding the management of water resources in California. These comments reflect respondents’ convictions about California waters, the use of those waters, and how the State Water Board should best manage these resources.

This section begins with a general analysis and proceeds with identification and discussion of respondents’ main areas of concern. It is divided into the following sections:

- General Analysis
- Decision-Making Process, Public Involvement, and Coordination
- Substitute Environmental Document, Alternatives, and Analysis
- Proposed Water Quality Control Plan
- Natural Resources Management
- Recreation
- Socio-Economic Concerns
- Methods of Compliance Evaluation

General Analysis

Respondents express their belief that the State Water Board has “failed to carry out its Public Trust responsibilities;” they assert that the plan will not provide for the restoration of fisheries, the

protection of the Delta ecosystem, the remediation of water quality violations, or restoration of salmon and steelhead populations in the San Joaquin River.

Decision-Making Process, Public Involvement, and Coordination

Public Involvement

Respondents assert that the proposed project is “unlawful” on several grounds related to noticing. They argue that neither the 2009 Notice of Preparation (NOP) nor the 2011 revised NOP indicates that the State Water Board would be developing a new LSJR flow objective even though the SED asserts that it is in fact analyzing a “new LSJR flow objective.” Similarly, they argue that the State Water Board did not provide adequate notice of the intent to revise the narrative objective. Some argue that the noticing related to the salmon narrative objective was also lacking.

Respondents also complain that the State Water Board did not adequately involve the regulated community in the development of the SED. They note that the SED does not analyze information provided in writing and at workshops and assert that this failure is contrary to the legal requirements of CEQA. Specifically, respondents complain that the SED does not “include information provided by the San Joaquin Tributaries Authority (SJTA).” They ask that the SED be revised to “evaluate” this information.

Some ask that the SED specify a “process for response to public comment on the Technical Report,” and that it explain how the State Water Board “will respond to public comments and deficiencies in the Technical Report.”

Others complain that the public notice appears to contradict the requirement of CEQA to “include all comments, even late submittals, in the administrative record.”

Coordination with Other Agencies and Governments

Some respondents assert that the State Water Board did not comply with CEQA requirements to consult with responsible agencies because it did not consult with the irrigation districts regarding “the extent or content of environmental review.” Some insist that the SED “must be revised to identify local agencies and irrigation districts” with which the State Water Board will consult and to include a schedule for this consultation. Respondents also argue that the SED is internally inconsistent on the question of responsible agencies; they note that the SED states that the State Water Board is the “only agency with responsibility for approving and implementing the plan” but later notes that “local irrigation districts and other public agencies will determine how best to comply with the plan.” They ask that the SED either “identify local agencies as responsible agencies...or analyze each method of how the State Water Board will implement the plan.”

Respondents suggest that the WQCP be revised to not require consensus of the coordinated operations group (COG)² of the adaptive management³ plan; they suggest that consensus should be a goal but not a requirement and ask instead that a “dispute resolution process” be incorporated.

The California Department of Fish and Wildlife (CDFW) specifically requests that if the management actions in the adaptive management plan are intended to “benefit or may negatively affect a

² In the recirculated SED, the COG is referred to as the *STM Working Group*.

³ In the recirculated SED, adaptive management is referred to as *adaptive implementation*.

sensitive species and/or its habitat” then the Executive Director “will consult with the regulatory agency” with jurisdiction before making a “determination regarding approval of the plan.” CDFW also takes issue with the assertion that it should “develop and implement improvements to its anadromous fish hatcheries.” The comment notes that a process for review and change has been underway for some time and while the recommendations will be evaluated at the “next policy team meeting” and “CDFW does not know whether the Team will recommend policy changes.”

Contra Costa County complains that their “detailed scoping comments” were “ignored.”

Compliance with CEQA

A number of respondents assert that the SED does not meet the requirements of CEQA. Several request that the State Water Board revise the SED and recirculate it for public comment. Specifically, respondents ask that the SED be revised such that it provides “a sufficient degree of analysis to provide decision makers with information” to make an informed decision. Additionally, they argue that the SED does not identify or describe the “secondary effects of the proposal,” including inducing “agricultural operations to rely more heavily on groundwater” and the resulting increase in air pollution for increased use of diesel engines to “pump groundwater.”

Several respondents assert that the State Water Board is effectively “piecemealing” the project in contravention of CEQA requirements. They note that the State Water Board must evaluate the “whole of an action” including those parts that would “cause direct or reasonably foreseeable indirect physical environmental changes.” These respondents assert that the division the Phase I components (San Joaquin River flow and South Delta salinity objectives) from the Phase II components (review and update of the 2006 Bay-Delta Water Quality Control Plan) “constitutes piecemealing” of the “project description.” They argue that the State Water Board should be “considering Phase I and Phase II as an integrated whole.” Respondents note that the connection between the two phases is “inextricable” and that the SWRCB “intends to reintegrate the segmented pieces.” Others note that CCR 23 § 3777 “requires a single SED be performed for each basin plan amendment” and does “not provide or otherwise allow for multiple SEDs for a single basin plan amendment.”

Some respondents complain that the SED does not include a “stable and finite project description” and therefore does not comply with requirements of CEQA. They argue that the call for “an adaptive management process” is “too vague with regard to what standards are to be used” which makes it “impossible to determine what effects the proposed objective and implementation plan may have on the environment.”

Further, some respondents argue that separating “the analysis of the San Joaquin River from the Sacramento River has resulted in a disjointed depiction of the conditions in the Delta” and that the State Water Board has not explained this phased approach sufficiently, which “frustrates the public disclosure goals of CEQA.”

Respondents suggest that the following objectives may change and are reasonably foreseeable and so should be included in the analysis: water quality objectives for Sacramento River inflows, changes to export/inflow ratios, Delta Cross Channel closure objectives, Suisun Marsh objectives, Old and Middle River reverse flow objectives, and “other changes to water quality objectives that are reasonably foreseeable from Phase II proceedings to date.”

Some argue that the State Water Board cannot legally “adopt a statement of overriding considerations” without “substantial evidence that [the] project will confer benefits”; they note that “[g]eneral benefits are not sufficient.” According to these respondents, 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.”

Others assert that the SED fails to comply with CEQA because the “determinations are not supported by substantial evidence.”

Compliance with Water Rights Laws

Some respondents complain that the plan includes “language assigning responsibility for portions of the WQCP to specific parties, including DWR [California Department of Water Resources]” and that such assignments should properly “be reserved for the water rights hearing.” They therefore ask that all such language be removed from the SED and proposed WQCP. Respondents note that the Board has conflated its legislative authority with the adjudicative water rights authority by pre-determining many of the water rights conditions. They argue that this is illegal and “fails to provide the targeted water rights holders with the procedural protections and due process provided by an adjudicative water right proceeding.”

Several respondents assert that the SED “conflicts” with water rights laws by “ignoring the water right priority system and the relevant protective statutes.” They note that under the priority system “any required reductions of Delta or tributary water use must first be borne by exporters before any Delta tributary water rights holders are affected.” Some also note that the SED “burdens senior water right [holders] without first impacting more junior water right holders.” Additionally, they are concerned that by “including only the Stanislaus, Tuolumne, and Merced Rivers in the objectives, the Board ignores other possible sources of water to satisfy the narrative objectives.” Some ask that the SED “explicitly acknowledge” the “potential for water rights holders to obtain compensation through transfer agreements with export water users” and that such transfers “could help fund water efficiency and other measures to reduce impacts.” Respondents also assert that the Board’s plan violates the Delta Reform Act of 2009 “because the Appendix K flow objective threatens to impair the prior water rights of major service providers.”

Several respondents argue that the proposed changes in the South Delta salinity objectives would “injure water rights of ...beneficial users” and would violate the “federal Clean Water Act’s antidegradation policy and the Board’s own 1968 resolution protecting against degradation of the state’s waters.”

Respondents assert that there are several errors in the SED related to water rights, including the following:

- The City and County of San Francisco (CCSF) is incorrectly characterized as “a contracting water district with the Districts as the primary water rights holders and surface water diverters.” The “CCSF holds its own water rights to the Tuolumne River and does not receive water under contract with the Districts.”
- The SED describes CCSF’s storage allocation under the Fourth Agreement as a “740-TAF water right”: however, it is “not a water right but rather a water bank account in Don Pedro Reservoir that allows CCSF to satisfy the District’s entitlement to daily natural flow.”

- The Stockton East Water District (SEWD) “does not use water diverted pursuant to SSJID [South San Joaquin Irrigation District] or OID [Oakdale Irrigation District] water rights.”
- The SED incorrectly describes the water diversions of OID and SSJID. These districts “hold water right separate and distinct from the 1988 Agreement and Stipulation with” USBR.
- SED incorrectly describes “senior water rights holders as ‘contractors’ to the U.S. Bureau of Reclamation (Reclamation or USBR)”.

Additionally, some respondents complain that the State Water Board overstates its authority to implement the water quality objectives. They note that the State Water Board’s “jurisdiction and authority over” water rights actions, FERC [Federal Energy Regulatory Commission] hydropower licensing processes, other water quality actions or actions by other entities “is limited” even though these are the primary ways the State Water Board intends to implement the changes to the water quality objectives. Similarly, respondents argue that the State Water Board has overstated its authority to implement the flow objectives. For example, while the State Water Board has the authority to amend water rights permits, “this authority to reserve jurisdiction only applies to permits: it does not extend to water rights secured by license.” Respondents go on to note that the majority of water diverted in the geographic scope of the proposed project is diverted “pursuant to licensed or pre-1914 water rights.” Respondents also complain that the “SED fails to evaluate how much water in the plan area is diverted pursuant” to such rights. Without this analysis, they note that “it is not clear whether there is sufficient water over which the State Water Board had jurisdiction to implement the LSJR Flow Objective.”

Respondents also note that while the State Water Board has the right to “curtail water use that is wasteful or unreasonable,” it must make a determination of fact that the use is unreasonable. Further, respondents assert that 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.” Some respondents argue that the Board should reconsider the choice to not “include an accurate description” of the water rights diverters on the Stanislaus River until the next phase. They specifically complain that the analysis in regards to the New Melones Reservoir is flawed in the SED and they request that the Board correct this in a revised SED.

Some respondents are concerned that the plan of implementation could redirect effects to the Sacramento Valley and note that because the adaptive management plan is not fully described in the SED they cannot determine whether or not this would be the case. They note that if the plan would require additional flows from the Sacramento Valley and enable increased Delta exports, this would “violate the fundamental principles of the water right priority system and the area of origin statutes.”

Compliance with Other Regulations

Some respondents assert that the proposed 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.”

Plan Development and Revision

Respondents ask that the section of the plan called “Action by other Agencies” be revised “to establish the schedule, expected results, and other specifics required by Water Code section 13244 to establish accountability for performance.” Further they ask that the plan “establish a procedure for an annual informational workshop where other agencies submit written reports, and discuss the

consequences of their reports, for implementation of their responsibilities under the plan update.” Some suggest that such specifics are needed to increase the State Water Board’s ability to compel action by other agencies.

Substitute Environmental Document, Alternatives, and Analysis

Adequacy of the Analysis

Some respondents complain that the SED “relies on inaccurate assumptions, flawed modeling, and data that is often either erroneous or not representative of the actual area at issue.” Others criticize the SED for combining the effects of “all the tributaries together,” arguing that this “masks the impacts” and that the “analysis must be redone and each tributary’s impact should stand alone.” Some complain about the failure of the SED “to evaluate and disclose the lessons of the failed Vernalis Adaptive Management Plan (VAMP) experiment.” Some complain that the SED does not include analysis of effects in “dry and consecutive dry years.” Additionally, some assert that the SED “relies in part upon incomplete and out-of-date scientific information.” Others complain that the SED “presents a confusing analysis” instead “of presenting the evidence and logic underlying the assumptions made in the impact analysis.”

Many respondents ask that the SED be revised and recirculated for a wide variety of reasons, including inappropriate project description, inappropriate baseline, inadequate analysis of impacts, inadequate consideration of mitigation measures, and an inadequate range of alternatives.

Respondents complain that the SED does not actually contain a program-level analysis in spite of claiming to do so. They ask that the SED be revised to “disclose the level of detail and analysis required by a program-level analysis and conduct such analysis.”

Others complain that the SED omits “any account of the known hydrodynamic fate of San Joaquin River flows in the presence of Delta export pumping.” They note that these hydraulic relationships “affect the dynamic size of the low salinity zone...[and] the volume of Delta outflow, rates of fish entrainment and death at the export pumps, survival of migrating salmon smolts and the survival of sensitive open water (pelagic) fish.”

Respondents criticize the SED for failing to identify areas of known controversy or dispute.

Some assert that the Board is “required to analyze implementation and set for a plan of implementation in the SED.” They object to the creation of the Implementation Workgroup and suggest that having this group develop the implementation plan in place of the Board is “unlawful.” Others ask that the SED analyze the impacts of the adaptive management plan.

Others comment that in spite of promises “that the Water Quality Control Plan would include a full CEQA examination and consideration of alternatives,” the SED fails to do so.

Project Description

Respondents criticize the SED for lacking a legally “adequate project description.” They assert that nowhere in the SED “is there a clear concise description which sets forth the objectives of the proposed project and measurable benefits that will be achieved by implementation of the proposed project.” Some also criticize the project description because it “fails to describe the program of implementation in sufficient detail to conduct a legally adequate evaluation of the environmental impacts.” Further, they are concerned that the project description “excludes from the Plan area the

Upper San Joaquin River above Merced River.” They note that the Board “cannot legally exclude” this area because it contributes “nearly 35% of the unimpaired flow of the entire San Joaquin River basin.” Respondents similarly complain about the exclusion of upstream rim reservoirs on the Upper San Joaquin River from the plan area.

Respondents assert that the SED “fails to explain why certain areas are included and others are excluded.” Further, they complain that the “SED fails to explain how the departure from the geographic scope of the 2006 Bay Delta Plan is supported.”

Some complain that the SED didn’t “describe the upstream facilities of the SFPUC [San Francisco Public Utilities Commission] in adequate detail and excluded the SFPUC’s service area from consideration.” They protest that the project description “incorrectly assumes that the SFPUC’s operations will not be affected or modified” and so the SED “fails to consider the impacts of reduced water supply on the SFPUC... and the resulting economic impacts on the Bay Area.”

Some respondents request that the SED include “consideration of future action to restore Hetch Hetchy Valley in Yosemite National Park.”

Baseline

The baseline is of concern to several respondents. Some ask that the baseline be recast to “assume 100% compliance with the standards” and that the alternatives should be designed to completely comply with those standards. Some point to the use of the 2009 Department of Water Resources State Water Project Reliability Study (DWR Reliability Study) as “the inputs into the Water Supply Evaluation Model (WSE Model)” as a fundamental flaw in the analysis. They complain that this study “grossly misrepresents operations of the New Melones Project on the Stanislaus River” and conclude that use of the study “as the input assumptions to the WSE Model results in an erroneous depiction of conditions and cannot be the basis of comparison for alternatives.” They also note that inclusion of the June 2009 National Marine Fisheries Service’s Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project (NMFS BiOp) Reasonable and Prudent Alternative 3.1.3 (June 2009 BiOp Appendix 2-E flow schedule) is problematic because the “June 2009 BiOp flows have been set aside by a Federal Court.” They suggest that including the BiOp in the baseline is therefore a “prejudicial error.” Others argue that the SED should include the Operations Criteria and Plan (OCAP) Table 2E requirements “that have been in place since 2009” to ensure a more accurate baseline.

Others complain that the SED omits “flows from the San Joaquin River Restoration Program (SJRRP)” and since this agreement “existed at the time of the NOP” it “ought to have been included in the environmental setting and baseline.” In a related vein, several respondents criticize the inclusion of the VAMP in the baseline because doing so “mischaracterizes the existing physical environment.”

Other items that respondents argue should be included in the baseline are:

- D-1641 Vernalis flow requirements met by the Central Valley Project (CVP)
- D-1641 Vernalis water quality requirements met by the State Water Project (SWP)/CVP
- Ripon dissolved oxygen (DO) requirement
- NMFS Biological Opinion (BiOp) instream flow requirements (Table 2E)
- NMFS BiOp interim temperature objectives
- NMFS BiOp Vernalis April/May flow requirements

- OID/SSJID entitlement diversions
- SEWD/Central San Joaquin Water Conservation District (CSJWCD) CVP contractor deliveries
- Baseline of southern Delta diversions
- Quality and quantity of water contribution from land to the west of the San Joaquin River.

Some make the more general comment that the baseline does not meet minimum legal requirements because “[w]ithout explanation it omits relevant aspects of the existing physical environment while contemporaneously adding other features that were not part of the existing physical environment.” This results in an “inaccurate baseline that contaminates the SED’s study of environmental effects.”

Several respondents complain that the baseline does not “describe existing physical conditions.” Some ask why the baseline was not adjusted to “reflect the change in the Board’s regulatory approach” as reflected in the revised NOP issued in 2012.

Mitigation Measures

A number of respondents complain that the SED “fails to identify and evaluate all feasible mitigation measures.” They note that both flow and non-flow mitigation must be considered and cannot be “summarily” dismissed. Some point out that there are a variety of flow measures that could be discussed including “pulse flows, highly variable flow regimes, outmigration flows, and flow regimes by water year type.” Additionally, respondents argue that the SED must consider non-flow mitigation measures such as predator suppression. Further, the SED must provide analysis to support conclusions that measures are infeasible. Respondents note that to comply with CEQA the SED must “identify feasible mitigation measures for each significant environmental impact.”

Some also assert that the “export projects” should be required to “fully mitigate the impacts...on fisheries” before others are asked to mitigate the effects.

Antidegradation Analysis

The Antidegradation Analysis is of concern to several respondents. They argue that it does not provide the economic or social analysis that is required. As a result, they assert that the salinity objectives should not be approved. Some argue that the “export areas served by the Central Valley Project and the State Water Project have “never [been] designated as a beneficial use for purposes of Delta water quality planning” and therefore cannot be considered as areas of “important economic or social development” in the State Water Board’s analysis. Several respondents assert that a full antidegradation analysis must be completed as required by state and federal law and should be available for public review and comment before the release of the final SED. Some argue to postponing the antidegradation analysis until the implementation phase violates CEQA.

Some respondents note that 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.” They note that this “threatens to violate the state’s Antidegradation Policy without any analysis or explanation.”

Development and Range of Alternatives

Respondents note that the SED does not include alternatives that would meet the requirements of the “rules for evaluation of alternatives” that it sets out, and complain that the SED does not provide legally sufficient information or reasons as to why the State Water Board eliminated other alternatives from analysis.

Some respondents argue that the SED should include alternatives that would provide reasonable protection of fish and wildlife beyond just the unimpaired flow alternatives analyzed. Others are concerned that the SED provides inadequate explanation for why some alternatives were considered but not analyzed. Some note that the Board is required to consider “a much broader set of alternatives” including “non-flow alternatives.” They suggest that pulse flows, improving riparian habitat, gravel enhancement and augmentation, and reduced ocean harvest could also be considered in the alternatives. Some respondents go on to say that the alternatives presented are not actually separate alternatives, but are “simply gradations of the same alternative.” Some ask that the Board “analyze reasonable alternatives to ‘mimicking the natural hydrograph’” and alternatives to the “draft narrative flow objective.” They note that the SED “fails to analyze whether there are flow alternatives that would support native fish populations and that could potentially reduce the significant impacts to water supply.”

Proposals for New Alternatives

Several respondents suggest that the State Water Board should provide an alternative that “includes a comprehensive land retirement program that would greatly reduce the discharge of salts.”

Respondents suggest that the SED “needs to evaluate the USFWS [U.S. Fish and Wildlife Service] proposed alternative from the 2005 Anadromous Fish Restoration Program [AFRP] Report.” Some specifically ask for the inclusion of an alternative that is “consistent with the AFRP doubling flows and is based mostly, but not solely, on percent of unimpaired flow.”

Some ask that the SED include an alternative that “considers flow contribution from the upper SJR.” Additionally, respondents ask that the SED include an alternative that “includes contributions from Friant flows.”

Several respondents ask that the Board include “analysis of a predation alternative because it would mitigate significant impacts arising out of the existing alternatives.”

Respondents also ask for the analysis of “other reasonable flow alternatives” including unimpaired flow for a shorter time frame (February through May rather than February through June), pulse flows, and one that tailors “specific flow regimes for each tributary based upon different flow functionality goals.” Some ask for the Board to include an alternative that “analyzed the reservoir rule curves as currently modeled in the SED” as an alternative for reservoir operations (a “minimum impact to storage alternative”). At minimum, they assert, the SED should “have developed a suite of alternatives for reservoir operations and analyzed the impacts of flow alternatives under these different reservoir operation scenarios.”

Respondents ask that the SED include an alternative that “applies the same objective to Vernalis and the South Delta in order to compare water costs and effectiveness with the baseline.”

Alternative Selection

Respondents criticize the analysis for failing to “disclose the evidence-based reasoning that led [the Board] from the alternatives” to their preferred alternative. Further, some argue that the SED does not provide sufficient evidence to “support the conclusion that there are no feasible alternatives to the Preferred LSJR Alternative.” They also argue that “[n]one of the LSJR flow alternatives are feasible because there is no real-time data that would enable water suppliers to manage their diversions on a 14-day running average percentage of unimpaired flow.” Others are concerned that the SED does not “provide any analysis of the potential environmental effects of the range of possible flow patterns the Executive Director may order in the future.”

Respondents ask that the Board evaluate “whether there are less costly alternatives that would be equally effective in achieving environmental protection” and they note that doing so is required by Health and Safety Code section 57005. Others ask that the SED include an “evaluation of alternatives for how to get the most good from use of the limited water available.”

LSJR Alternatives

Some respondents complain that the range of LSJR alternatives is problematic. They argue that the selection criteria are “not rooted in CEQA and fail to demonstrate a connection with the project objectives.” Further, they note that since the central objective is to “adopt a standard that is protective of native fish populations” and since 60% flows have been identified as the “level necessary to restore migratory fish populations,” 60% flows should “set the floor, not the ceiling in shaping alternatives” to be analyzed.

Respondents also note that the SED incorrectly refers to “existing LSJR Flow Objectives;” they note that there is a San Joaquin River Flow Objective and ask that the SED “be revised to address the change in geographic scope and provide support for such a change.”

Respondents complain that because the program of implementation “provides no numeric or otherwise measurable requirement, a water right proceeding or 401 certification cannot implement” the narrative objective.

Several respondents object to the 14-day running average and suggest that a shorter time frame is more conducive to creating a natural hydrograph. Some prefer a 3-day running average and others suggest a 3- to 5-day running average. Some also suggest that these shorter running average periods be combined with “no limit on maximum flows” to “achieve a more natural hydrograph that is needed for a healthy river ecosystem.”

Narrative Objective

Many respondents ask for “additional specificity” in the narrative objective and ask for clearer definitions of terms including “viable, reasonably controllable measures” and “conditions that reasonably contribute toward maintaining fish populations.” Respondents also ask for the inclusion of “explicit, measurable objectives.” Some ask for clarification on the relationship between the narrative objective and the numeric flow objectives. They note that the “existing Salmon Narrative Objective and the San Joaquin River Flow Objective are two separate objectives.” Further, they note that the Board “did not provide public notice” that it was reviewing the Salmon Narrative Objective even though the Board refers to a “single narrative flow objective.” They complain that the SED does not analyze the “effects of changing the Salmon Narrative

Objective.” Some also assert that the SED “fails to provide a legally or scientifically sufficient analytical link between the proposed narrative objective and implementation flows, and potential flow-derived benefits for salmonids.”

Some express concern that the SED does not “disclose or evaluate the environmental impacts from changing the narrative objective.” Additionally, some ask that the SED evaluate whether the “protection offered by the new Narrative Objective is more or less protective than the previous salmon doubling objective.” Some ask that the Board provide a “redline/strikeout version of the Bay-Delta WQCP to show that the narrative salmon doubling objective will remain as an objective in the Bay-Delta WQCP after this update.”

LSJR Alternative 1 – No-Project Alternative

Several respondents argue that the no-project alternative does not accurately describe the actual circumstances that would exist if the State Water Board took no action. For example, they assert that the SED misrepresents the seniority of water rights to OID and SSJID and therefore makes inaccurate conclusions about water delivery reductions. Some note that the no-project alternative must include the NMFS BO Action IV.2.1 “which requires the irrigation districts to provide minimum flows at Vernalis between April 1 [and] May 31.”

Respondents note that the WSE Model, which is used to estimate the effects of the no-project alternative, “assumes water delivery and reservoir storage constraints that do not exist and would not exist if the State Water Board took no action” and therefore the WSE Model “skews the no-project analysis and misrepresents the environmental impacts.” Others note that this alternative “is not viable and will result in the New Melones Reservoir emptying in dry years.” Some assert that the analysis “does not accurately analyze the impacts of the no-project alternative on aquatic resources.”

LSJR Alternatives 2–4

Several respondents support the 60% flow alternative and assert that these flows are needed to protect “viable salmonid populations.” On the other hand, some respondents are concerned that the 60% flow alternative “does not adequately protect or account for other competing needs.”

LSJR Preferred Alternative

Confused about which alternative is the preferred alternative, some respondents inaccurately complain that the “State Water Board has not adequately explained why Alternative 2 was selected when the SED explicitly acknowledges that this alternative would result in ‘significant and unavoidable impacts’ to wastewater service providers that would be unable to reliably meet new NPDES effluent limitations.”

Respondents note that because the Board has identified Alternative 3 as the Environmentally Superior Alternative it must “provide an explanation” as to why it is not feasible. Further, they note that the preferred alternative does not “meet the objective of water quality standards that protect sensitive beneficial uses” and so cannot be selected over the Environmentally Superior Alternative.

Others complain that the SED “relegates too many critical factors to the implementation phase,” which results in the SED providing “insufficient information to determine whether the preferred alternative is the environmentally superior alternative.” In this vein, some respondents request that the SED provide “clear standards or [an] explicit decision making framework...to support the recommendation.”

Respondents note that both NMFS and the U.S. Environmental Protection Agency (USEPA) have “posited that a standard of 35% of unimpaired flows is simply insufficient.” Therefore they assert that the proposal of 35% is not a “justifiable standard.”

Respondents request that the SED include a figure showing the “effect of using a 14-day running average as compared to using daily unimpaired flow values.”

SDWQ Alternatives

Some respondents object to the inclusion of “just two options that would be different from the salinity objectives included in the existing 2006 Bay-Delta Plan.” They argue that the Board should expand their alternatives to include one with salinity objectives “between those advanced in SDWQ Alternative 2 and Alternative 3.” They believe that such an alternative would “offer a superior environmental alternative.” Respondents also more specifically criticize the SED because it “did not consider alternative salinity levels between 1.0 and 1.4 dS/m.” Other respondents oppose the preferred alternative because they believe it does not incorporate “adequate mitigation for the ‘significant and unavoidable impacts’ to wastewater service providers.” These respondents make several suggestions for mitigation that could be added, such as the following:

- Different or additional averaging periods
- Mixing zones
- Site-specific objectives
- Revised permit implementation language

Respondents criticize the no-project alternative because it assumes full compliance with “flow and water quality objectives in the 2006 Bay-Delta Plan,” noting that the “clear, uninterrupted and unchanging history of the southern Delta salinity objectives is one of non-compliance.”

Technical and Editorial

The following editorial changes are requested by respondents:

- Clarification that the Grant Line Canal is not “two parallel canals.” The Fabian and Bell Canal is a separate canal and is “a single channel, not two.” (page. 2-32, Section 2.6.1)
- Use “rivers” instead of “streams” in Section 7-13.
- Correct the boundaries of the Stockton East Water District in Figure 2-5
- Consistent use of the terms San Joaquin River (SJR), San Joaquin River basin (SJR basin) and Lower San Joaquin River (LSJR) to eliminate potential confusion.
- Clarification that the Stockton East Water District owns one-third of the Goodwin Dam (page 2-2).
- Clarification that the Stockton East Water District is a water conservation district (page 2-3).
- Clarification that the Stockton East Water District has 95,400 irrigated acres (Table 9-5).
- Clarification that the Stockton East Water District’s groundwater management plan was approved on May 9, 2006.

- Precisely give the percentage difference between the median and average flows (pages 2-15, 2-20, and 2-27).
- Revise Chapter 7 to include more of the background information to “adequately present the needed technical foundation to evaluate the assessment results.”
- Include all the alternatives (including the no-project alternatives) in Table 8-1 to allow for “side-by-side comparisons.”
- Addition of subheadings in the impact analysis.
- Include the Central Valley Project Improvement Act in the “Relevant federal programs, policies, plans or regulations” (Section 7.3.1).

Proposed Water Quality Control Plan

Many respondents are concerned about the adaptive management plan. Some ask for clarification as to whether the adaptive management plan can change the LSJR Flow Objective and whether this is “creating a different avenue to revise the water quality objective.”

A number of respondents ask for clarification on the adaptive management plan. These requests include the following:

- Increased detail on the annual and longer-term adaptive management.
- Clearly defined resource objectives.
- Clarification of the roles, responsibilities and authorities of the Implementation Workgroup and COG.
- Clarification of the structure and function of the decision-making process.
- Definition of the specific criteria that will be used to trigger management actions.
- Definition of timing requirements.
- Clarification of the role of the Executive Director.
- Clarification of the membership of the COG.
- Clarification of the relationship between the adaptive management plan and the flow objective.
- Definition of annual specific and measurable objectives that the Board is attempting to achieve.
- Definition of specific and measurable long-term objectives.
- Evaluation of how “scientific rigor...can be obtained when management actions are changed on an annual basis.”
- Clarification as to how adaptive management and monitoring will be funded.
- Definition of the term “real-time adaptive management” and how it differs from annual adaptive management.
- Clarification as to who will conduct the monitoring and at what level of precision.
- Inclusion of an “adequate process for implementing and evaluating higher flows.”
- Inclusion of independent science review and advice.

Respondents are concerned that the program of implementation (POI) does not provide sufficient detail to support a determination that it will be capable of achieving the LSJR fish and wildlife narrative objectives. Others complain that the POI is “not clear regarding whether it intends to implement the LSJR Flow Objective, the Narrative Objective, or both.” They also note that because the POI “does not include implementation measures for the LSJR Flow Objective, the proposed project violates the Porter-Cologne Act.” Some ask that the State Water Board “used the three phase (nine-step) adaptive management process described in Appendix A of the Final Draft Delta Plan... as an ongoing framework.” Others note that the State Water Board must include actions in the POI that would “incentivize compliance” and that without these the Board “cannot implement its plan.” Some argue that the role of the Implementation Workgroup “must be limited” and that the “program of implementation and SED should make clear that the State Water Board members will make an independent determination of the appropriate balancing of beneficial uses.” Others insist that the POI be “altered to clearly state that the USBR and DWR obligations for meeting the southern Delta water quality objectives remain unless and until the to-be-conducted water rights proceeding determines and assigns otherwise.”

Some respondents ask that the State Water Board “elevate the role of independent science within the adaptive management plan.” They also suggest that independent scientific review be required for “reviews of project operation and review of proposals to modify management actions.” Some ask that the adaptive management plan “follow a true scientific model of monitoring, special studies, and hypotheses testing.”

Respondents also suggest that the “wide latitude provided to the COG undermines the SED analysis and public disclosure” and as such “amounts to an unlawful delegation and violates other periodic review requirements in the Water Code.” Further, NMFS notes that it “may be difficult for NMFS to participate in the Board’s adaptive management process such as the COG...[because] NMFS currently has limited staffing and our resources are already full.” Therefore, they ask that the Board “provide the staffing.”

Respondents ask for clarification of how the Board intends “to improve the quality, quantity and access to floodplain habitat in the LSJR and its major salmon bearing tributaries with either (1) significantly higher flow to inundate the floodplain or (2) extensive restoration projects to provide habitat at lower flows.” Others ask for clarification as to “what the benefit of the new requirements...would be and how they would improve upon coordination, operations, and actions that are already in place and working well.”

Plan Development

Respondents argue that the Board should have “identified... the various water demands” for beneficial uses and then should identify “which of the beneficial uses are the most sensitive, so that it can comply with the federal Clean Water Act requirement that requires the most sensitive beneficial uses be protected.” Because the Board did not follow this path, these respondents assert that the plan does not comply with the Clean Water Act. Further some respondents assert that the 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.” They note that such an analysis is not included in the SED. Others assert that this lack of an analysis of the balancing of beneficial interests “fails to meet the Board’s obligations under the Public Trust.” Additionally, some respondents assert that the Board “needs to determine the amount of water available for appropriation” and then determine the “volumes of water needed...[to] protect (and sustain) the beneficial uses and ...the public’s interest in that beneficial use.” Some criticize the SED for not

containing “any explanation of what balancing factors were taken into account to arrive at the proposed objective.” Further, they are concerned that the balancing factors “were not equally weighted;” they note that impacts on the agricultural sector and water supply “were determined using worst-case scenario assumptions” while the impacts on fish and wildlife resources “were determined using best-case scenario assumptions.”

Some respondents are concerned that the “proposed timelines associated with developing the adaptive management process...and Implementation Plan...are extremely aggressive.” Further, they note that given the “complexity and level of effort” associated with developing an adaptive management plan, the Board should not delay these steps until after the Office of Administrative Law approves the plan.

Other respondents are concerned that the phasing approach to the planning process will extend the process into 2015 or farther. Since they are revising the 2006 Bay-Delta Plan, this means that the process will take 9 years or more. These respondents ask whether the Board “has legal authority to undertake” such a lengthy process. Some ask that the Board “pursue a comprehensive solution that is consistent with the timing of the overall comprehensive Delta planning process and which takes into account the potential impact on hydroelectric energy generation.”

Respondents express concern that the proposed project “delegates duties to the Executive Director in violation of Resolution 2012-0061.”

Relationship to Other Programs/Policies

Respondents ask that the Board “disclose the vital role of federal Clean Water Act policies and regulations with which the State Water Resources Control Board must comply.” They note that the intent of the CWA is for water quality control plans to “be used to improve water quality, not merely maintain it.” Additionally, some note that the Board appears “to have also shaved the science-based 60% flow figure down to the flawed 35% flow through a misplaced reliance on Porter-Cologne ...rather than protecting the most sensitive beneficial use as required by the CWA.” Additionally, respondents note that the Water Code requires that the program of implementation must “include a description of the actions which are necessary to achieve the objectives;” since development of the POI has been deferred, this information is not available and “is an impermissible failure to analyze the whole project under CEQA.” Some respondents argue that because the “draft POI would effectively allow for amendments of the water quality control plan through an adaptive management program,” it fails to comply with “the procedural requirements of Porter-Cologne and the APA that are applicable to the promulgation of [a] water quality control plan.”

Respondents note that “existing federal and state law...requires the doubling of the natural production of Chinook salmon, from the 1967–1991 average.” Given this, the respondents are concerned that the SED “proposes a narrative objective for salmon that is significantly weaker than the existing objective.”

Some respondents are concerned that the plan area is problematic. They note that the Bay Delta Plan covers a specific geographic area and that the proposed project “seeks to regulate waters outside the scope of the Bay Delta Plan.” They assert that this change to the geographic scope is “unlawful” because the Board did not provide notice of the changes and because Water Code prohibits regulation of waters outside the plan area as part of a review of the plan. Others assert that because the plan area no longer spans more than one basin, the “LSJR Flow objective is in reality a localized basin plan that is the responsibility of the Central Valley Regional Water Quality Control Board.”

Respondents also assert that the plan “conflicts with the Legislature’s mandate for a comprehensive Delta Plan under SBX7-7, which has been in progress for over three years by the Delta Stewardship Council.” They also argue that the proposal conflicts with the Bay Delta Conservation Plan (BDCP) (now referred to as the California Water Fix). Others ask that the SED be revised to “include the relevant information and analysis developed by the BDCP.” Some also ask for clarification as to how the plan development will be “coordinated with the Board’s review of the change petition for BDCP.”

Respondents complain that the policies in the Delta Protection Acts of 1959 and 1992 and the Watershed Protection Act are not included in the regulatory setting. Others ask that the description of the California Water Fix be corrected to note that the “remanded biological opinions will not be in operation until the ‘new water conveyance infrastructure identified in the Plan becomes operational.’”

Others note that salinity objectives “should be met without disproportionately burdening New Melones and consistent with federal law, HR 2828 (Public Law 108-361), which mandates a reduction in reliance on New Melones to meet the water quality objectives.”

Respondents also assert that the proposed project is “unlawful because the State Water Board failed to fully implement the 2006 Water Quality Control Plan.” These respondents note that “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.” They also specifically note that the Board failed to implement the non-flow measures in the plan even though they were identified as being “needed to achieve the protection of beneficial uses.” They argue that since the Board failed to previously implement the non-flow measures in its earlier plans, the Board “is precluded from revising the flow measures to require increased flow from the San Joaquin River.”

Some respondents express concern over the plan’s reliance on the FERC relicensing process. They note that if the State Water Board “intends to rely on FERC proceedings to build a scientific basis for informing the development of instream flow objectives, continual oversight will be necessary to ensure an adequate record.” Further, they note that the “FERC proceedings on the Merced and Tuolumne Rivers cannot be relied upon to inform development of flow objectives at downstream points within the southern Delta itself, such as Vernalis or the Stockton Deep Water Ship Channel.” Others assert that “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.” They further note that “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.” Some also note that the State Water Board does not “have the authority to control FERC operations” and so “does not have the jurisdiction to control the Irrigation Districts reservoirs.”

CDFW notes that the SED references Fish and Game Code sections 6430-6439 and that these sections were “repealed in 2004.” They ask that the SED reference the correct sections of the Fish and Game Code and the California Code of Regulations.

Additionally, some respondents note the “analysis of the SDWQ Alternatives ...is deeply flawed because it assumes under baseline conditions there will be egregious violations of the existing southern Delta EC objectives.” Further, they take issue with the fact that the Draft SED “concludes that relaxing [the] objectives under the SDWQ alternatives will not have any significant impacts on water quality because relaxing them will be similar to the situation where there is no effort

whatsoever to meet the existing objectives.” Some also assert that the proposed relaxation of the salinity objectives is not “consistent with the Board’s antidegradation policy” or “with the requirements of the federal Clean Water Act.”

Respondents ask that the Board clarify the nature of the “tributary rule” as referenced in Section 5.2, provide a citation for and explanation of the rule, and explain how it “could apply to the LSJR Flow Objective.” Others ask for the SED to be revised to “clarify the relationship between the proposed project, SJR flows, and the X-2 requirement.”

Respondents also note that the Board must “comply with the Delta Reform Act” and that the “Board has reversed the logical order of policy making” by lagging behind the “progress of the DSC’s [Delta Stewardship Council’s] Delta Plan.” Others ask that the SED explain how the proposed project will comply with the Raker Act. Some assert that the draft salinity objectives “fail to adequately consider” Water Code section 13241 factors. Some also ask for the SED to be revised to include a discussion of the federal Endangered Species Act, federal reclamation law, and other federal laws that “affect water supply, surface hydrology and water quality, either directly or indirectly.”

Respondents insist that the SED should include discussion of US PL 108-361 (HR 2828) as part of the regulatory setting. Others ask that the following be included in the regulatory setting section:

- Central Valley Project Improvement Act – Anadromous Fish Restoration Program (CVPIA-AFRP)
- Interim Biological Opinions for USFWS and NMFS
- Current update of the USFWS Native Delta Fish Recovery Plan
- Recognition of the development of a Central Valley salmonid recovery plan by NMFS
- The CDFW Incidental Take Permit (ITP) for SWP export operations
- Development of the BDCP (now the California Water Fix)
- Discussion of Essential Fish Habitat management under NMFS
- Central Valley Regional Water Board’s Irrigated Lands Regulatory Program (ILRP)
- The Grasslands Bypass Project

Salinity Objectives

Respondents request that “any changes to the salinity objectives be delayed until the South Delta Water Agency and U.C. Cooperative Extension Office’s study is complete and the State Water Board has thoroughly reviewed the resulting report.” Others ask that the Board “analyze the potential impacts of relaxing the salinity objectives on hydrodynamics” because currently “water is sometimes released by the U.S. Bureau of Reclamation to achieve the existing salinity objective and any change in this objective would therefore, ultimately impact flows, temperature, and pollutant concentrations in the south Delta.”

Several respondents note that “water exportation from the Delta has not been a designated beneficial use” and note that in D-1641 the “Board placed responsibility for meeting South Delta salinity objectives to protect South Delta agricultural beneficial uses on the shoulders of the U.S. Bureau of Reclamation and the California Department of Water Resources, the exporters themselves.” Several also ask for clarification of why the Board is revising the salinity objective at all. Respondents assert that it appears that the Board “dislikes having to enforce salinity objectives on

the Bureau and Department...in part because the violations are nearly continuous at times.” Respondents argue that the Board is trying to reduce these violations by relaxing the salinity objectives rather than “by improving water quality.” In a similar vein, some respondents point out that the analysis seems to assume that the State Water Board “will adopt water quality objectives but not enforce them.” They argue that this is “in direct conflict with the requirement to provide a program of implementation.”

Others assert that the use of “temporary barriers or low-lift pumping stations” is not needed to protect agricultural uses in the southern Delta and ask that they be removed as a “potential ‘method of compliance.’”

Some assert that the State Water Board does not appear to have “adequately considered alternatives to the three proposed salinity objectives.” These respondents also note that there was “little to no analysis or discussion as to why a ‘maximum 30-day running average of mean daily EC’ is being maintained.” They further point out that several scientific reports “recognized that the agricultural beneficial use and other beneficial uses are ‘affected more by longer term salinity averages.’”

Others note that “the western San Joaquin Valley tributaries cause most of the underlying salinity problems” and assert that the Board should “deal with the reality that irrigating those salty lands with water imported from the tidally-influenced Delta is an unreasonable use of water.”

Flow Objectives

Respondents argue that the proposed project is “unlawful because flow is not a water quality constituent that can be regulated through a water quality control plan,” and that flow is not a water quality “constituent or characteristic” of the water itself. Therefore, the Board “cannot regulate flow pursuant to the Clean Water Act.”

Other respondents ask that the SED either include an analysis of the effects of the proposed changes to the October pulse flows or else remove the changes from the plan. Some assert that “the program of implementation suggests that the State Water Board intends to change the responsibility for meeting the October flow objective.” However, they note that the Board “makes no mention of this reallocation in its environmental analysis.” They argue that this omission means that the “SED is deficient.”

Some respondents also ask that the State Water Board “begin at 45 percent of unimpaired flow... and allow for adaptation to lesser levels if and when populations are trending towards recovery and survival rates have dramatically improved.” Further, they note that in 2010, “the Board issued a final report called the Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem” and that the report “determined that 60 percent of unimpaired flow from the San Joaquin River from February through June is needed in order to preserve the attributes of a natural variable Delta system to which native fish species are adapted.” These respondents ask the Board to clarify how they determined that a 35% unimpaired flow would be sufficient. Some suggest that the 35% unimpaired flow would fail to meet the Board’s public trust requirements to protect fishery resources. Others suggest that the percentage unimpaired flow proposed in the plan is “significantly lower than flow standards resulting from the use of the UF [unimpaired flow] approach elsewhere.” They note that “actions below an 80% UF threshold ‘will likely result in moderate to major changes in natural structure and ecosystem functions.’” Others note that the FWS recommended “76%, 86%, and 97% UF for the Tuolumne, Merced and Stanislaus Rivers.” Some ask that the Board implement unimpaired flows of 50% on each tributary.

Several respondents express concern that the Board is “proposing a flow that is below current baseline conditions in the Stanislaus River.” They note that the “Reasonable and Prudent Alternative (RPA) actions in the NMFS BiOp flow schedules are the minimum necessary to avoid jeopardy and are implemented as part of a suite of actions to manage year-round conditions of temperature, flow, and habitat to avoid jeopardy.” Further, they assert that “setting a standard that merely avoids jeopardy is unlikely to achieve the doubling goal of the Bay-Delta Plan.” Respondents also ask that the Board “make the salmon-doubling goal an explicit part” of the flow objective.

Several respondents also express concern that the limited range of flows (+/- 10%) may not allow for “a sufficiently broad range of flows.” They note that this constraint “may inhibit the ability to implement management actions/experiments designed to address key uncertainties regarding the role of flows.” Respondents also ask that the Board clarify whether the term “total quantity of flow” is “based on the preferred alternative amount (35% unimpaired flow) or the adaptive management range (+/- 10%) encompassing the preferred alternative.”

NMFS “recommends adopting the NMFS and US Fish and Wildlife Service interim protective flows developed for the New Don Pedro FERC relicensing 2009 Administrative Law Judge hearings as interim measures subject to the Board’s adaptive management process.” They note that these measures “are necessary to improve the quantity, suitability, and consistency of the aquatic habitat for all life stages of salmon and steelhead in the Tuolumne River.” They also ask for a “year-round flow schedule” for the Merced River. Further, they ask that the Board adopt the minimum flows for Vernalis that are found in the NMFS RPA. Some also ask that the Board clarify whether “adaptive management is individual to each Tributary or whether the adaptive management is for all Tributaries combined.”

Others note that the “1000 cfs [cubic feet per second] minimum flow standard is not adequate to provide even minimal fish passage between the Delta and sections of the San Joaquin watersheds upstream of the Delta.” Some respondents complain that the Board had failed to define the location of all four compliance points and note that because of this omission “it is unclear who is ‘directly affected’ by the regulation.”

Additionally, respondents express concern that the proposed flows “will not provide essential ecological functions such as adequate variability of flows, magnitude of flows, and tributary baseflows that a natural hydrograph can provide.” They particularly note that a “great deal of the variability is lost when one moves from a 3-day average to a 14-day average.” Respondents also note that the caps on flow proposed in the SED “limit the benefits of high water years to aquatic life including the flushing of gravels used for spawning, and the creation of nursery habitat for juveniles in floodplains.” They ask that the caps be reevaluated “because they allow for the delivery of less than 35% UF in the rivers at times when there is not risk of flooding.” Some also note that “flows are needed year round, not just the February to June period, to support all CV steelhead life history stages and their habitat needs.” Some assert that the unimpaired flow objective should “provide geomorphic function and allow for inundation of floodplain habitat”; they also note that “habitat restoration alone cannot make up for lack of flow.”

Some respondents ask for clarification that the “maximum monthly flows are just that, maximum monthly flows, and not intended to represent maximum daily flows.”

Others point out that the “unimpaired flow criteria are not well suited for real-time operations.” Some also assert that the SED “is inadequate in its analysis as to how unimpaired flow standards produce the benefits expected, and if balanced against the economic impacts of foregone water

storage and use, whether the non-flow options such as habitat restoration can more efficiently achieve the reasonable protection of beneficial uses.” Some also note that a “more balanced approach would be to implement non-flow related actions first before considering additional in-stream flows.”

Some respondents also ask that the flow objective include “a measurable, quantitative target.” They suggest that the Board establish objectives that are “SMART (Specific, Measurable, Achievable, Relevant, and Time-fixed)” and that these objectives “reflect the intended outcome of the actions.” Some also ask that the Board “clearly define unimpaired flow” and indicate that it is not synonymous with “natural flows.”

Some respondents ask that the Board first identify “the various water demands for beneficial uses, which of the beneficial uses are the most sensitive, the increment of flows available for riparian and appropriative consumptive use, and then [propose] flow objectives in accordance with those findings.” Additionally, some respondents ask that the Board consider “reduction or cessation of Delta pumped exports to allow instream flows to facilitate fish migration and turbid open water conditions needed by Delta smelt.”

Respondents also ask that the State Water Board ensure that Section 5937 be enforced and ensure that the flow below Friant Dam be increased sufficiently to “sustain fish populations.”

Natural Resources Management

Biological Resources (Fish and Wildlife)

Several respondents complain that the SED provides “no evidence” that the “proposed alternative will protect fish and wildlife.” They note that the SED does not describe the “method and extent to which the proposed project protects the beneficial use of fish and wildlife,” “the specific fish species for which the Lower San Joaquin River Flow Objective is supposed to protect,” or “the quality or quantity of protection the LSJR Flow Objective will offer or how this protection will be measured.” Some also complain that the SED “does not include an initial assessment of water available to protect fish and wildlife beneficial uses.”

Some respondents complain that the SED relies on the Technical Report; they note that the SED misrepresents the conclusions of the report and also note that the report itself is “not supported by the best available science.”

Some respondents ask that the SED explain the change in the purpose of the LSJR Flow Objective; they note that previously the objective “sought to protect fish and wildlife migrating through the Delta” but that the new purpose is “to protect fish and wildlife beneficial uses in the LSJR watershed and the eastside tributaries.” Some complain that the SED defines fish and wildlife beneficial uses as “including San Joaquin River Basin fall-run Chinook salmon and other important ecosystem processes;” these respondents note that “‘other important ecosystem processes’ are outside the beneficial use of fish and wildlife” and “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.” Several respondents ask that the SED’s “aquatic impacts analysis be expanded to include significant impacts that occur as a result of implementing a LSJR alternative outside of the February through June window;” these respondents note that “aquatic resources are present in the Bay-Delta and eastside tributaries year round and thus [are] subject to flow impacts year round.”

Some respondents note that the SED provides “no discussion or rationale... to support the 10% threshold of significance” used in the analyses. They note that the “BDCP Effects Analysis applied a 5% significance threshold” and argue that the 10% threshold “may underestimate impacts.” Therefore they ask that the SED provide “technical support and transparency regarding how the 10% threshold was established” and a justification for “departing from the 5% threshold that is used in other EIR analyses of impacts to sensitive aquatic resources in the Delta.”

Respondents complain that the SED “does not estimate the level of protection the proposed project will provide to fish and wildlife.” Respondents note that the “assumption of benefit is not the same as a judgment of reasonable protection.” Some also assert that “the proposed project will not provide flows that are more ‘natural’ than currently exist” and therefore “the proposed project cannot be said to provide reasonable protection to fish and wildlife.”

Respondents note that the impacts of selenium can be significant to aquatic organisms and ask that the analysis address these issues more thoroughly. Respondents note that the “35% unimpaired flow level proposed for the Stanislaus River is not consistent with the riparian preservation and conservation policies for the state.”

Some ask that CDFW policies be added under the heading BIO-1. They specifically reference Department of Fish and Game (DFG) Code Section 1389 Preservation and Enhancement and DFG Section 1385, California Riparian Habitat Conservation Act. Respondents also ask that the SED be revised to “include relevant information and analysis developed by the San Joaquin River Restoration Program (SJRRP).”

Wildlife

Respondents complain that the SED “fails to analyze effects as they related to freshwater invertebrates.” They particularly notice the failure to analyze the effects of salinity on zooplankton. In this vein, some complain that the SED does not consider “phytoplankton, zooplankton, and micro-organisms that are much more sensitive to flow compared to fish.” Respondents complain that the SED fails to adequately consider the potential effects of the plan on special-status terrestrial species. They suggest that many species’ survival is “directly tied to agricultural landscapes” and that because the Preferred Alternative would result “in the fallowing of more than 100,000 acres of agricultural lands within the San Joaquin Basin” these effects could be significant. Others ask that the conclusion in BIO-4 that “there would be a significant impact on special-status animals resulting from the loss of riparian vegetation on the Stanislaus River” be “supported by a full description of the impacts on each affected special-status species.”

Several respondents ask that the SED evaluate potential effects from selenium on the following species: San Joaquin kit fox, kangaroo rats, blunt-nosed lizards, giant garter snake, and California least terns.

Fish

Respondents express concern about the analysis of effects on fish species and note that many sections “such as those describing species life histories and stressors are poorly documented and many of the findings are not supported by either references or analyses.”

Some complain that the SED does not contain sufficient information that “suggests February flows will benefit or otherwise protect fish species.” Some also note that “[b]ecause 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.” Some also complain that the SED’s “preferred alternative fails to adequately demonstrate any measurable benefits for salmon with respect to improving critical life functions and thereby improving salmon populations.” Further, some respondents argue that the SED must be revised such that it considers all possible alternatives and to avoid a “decision that is arbitrary and capricious and in violation of the law.”

Several respondents assert that the analysis of the 20% alternative is flawed. They note that the “conclusion that the 20 percent alternative will have significant impacts to aquatic resources is not supported.” Further they note that the adoption of the 20% alternative would “not actually reduce flow on the Stanislaus River” in spite of the SED’s assertion to the contrary. Further, they note that “having lower flows than currently exist does not alone support the conclusion that there will be insufficient flows for outmigration” and they note that the SED does not “identify the quantity of flow needed” to improve flow for outmigrating salmonids. Additionally, respondents note that the SED makes the “unsupported” conclusion that “predation is correlated with flow.” They additionally note that the SED “provides no citation or scientific support for the conclusion” that the “20 percent unimpaired flow requirement would result in significant impacts to disease risk on the Stanislaus River.” Finally, they note that the SED does not provide adequate support for the assertion that the “20 percent unimpaired flow requirement would result in significant impacts to transport on the Stanislaus River.”

Respondents express concern that the SED does “not adequately consider how water management may impact the amount of flow actually available for fish.” They are concerned as well that the SED “does not consider whether the adaptive management process would make available the maximum amount of unimpaired flow for fish.” Others express concern over the use of the DFG Salmon Model; they assert that the model is “not the best available science,” that it is “not an accepted statistical modeling approach,” that it “is not robust and its conclusions can change drastically from minor changes in the fitting data,” that “it has little predictive value,” and it does not take into consideration “other stressors” beyond “measured flow.” Others assert that the DFG Salmon Model simply “does not support the proposed project” and note that the SED “failed to run the DFG Salmon Model ...for any of its proposed alternatives.” Respondents also complain that the SED offers no “analysis of velocity and stage in the San Joaquin River system and the Delta on salmon.” Additionally, some respondents note that the SED’s own analysis is inconclusive and contradictory as it relates to the impact of higher flows on contaminants.

Respondents ask that the SED be revised to correct the analysis of project impacts on the “coldwater pool in Lake McClure.” They assert that “[m]odeling 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” and ask that the SED be revised to analyze the “impact on coldwater fisheries accordingly.” Some respondents further note that even though the San Joaquin, Stanislaus, Tuolumne, and Merced Rivers have been “listed as impaired water bodies due to elevated temperatures...there are no proposed objectives in the SED to protect the identified beneficial uses of cold fresh water habitat; migration of aquatic organisms; spawning, reproduction and/or early development of fish; and rare, threatened, or endangered species’ habitat from elevated temperatures.” They suggest this results in a failure to comply with the CWA.

Respondents are concerned about the apparent over-reliance on increased flows to address fish species population concerns. They note that there “is no consideration of restoration alternatives such as gravel replenishment and physical cleaning” even though these “alternative approaches will result in a benefit to salmon and do so without jeopardizing agricultural beneficial uses or other species’ habitats.”

The low dissolved oxygen and “other degraded water quality conditions in the Stockton Deepwater Ship Channel” are of concern to other respondents. They note that these conditions “can effectively close this migratory corridor for anadromous fishes.” They note that flows of 2000 cfs would be required year-round at Vernalis “to avoid low dissolved oxygen conditions.” Respondents who express concern about the temperature in the lower San Joaquin River and its effects on juvenile and adult salmonids’ migration note that “based on the best available evidence..., flows of $\geq 5,000$ cfs during the spring at Vernalis would be necessary.” Additionally, they note that “when flows average $\geq 5,000$ cfs from March–June, population growth occurs the vast majority of the time.”

Some note that the “SED fails to recognize the lack of consensus by regulatory agencies on the appropriateness of the HORB [Head of Old River Barrier].” They point out that “recent data suggests that an effort routing migrating smolts through Old River to the CVP pumps may prove to be a better option.”

Several respondents are concerned that the SED does not pay sufficient attention to the issue of predation. Several note that the predation rates in the south Delta are extremely high “(greater than 95%)” and must be addressed in order for the increased flows to have the expected benefits to fish. Some suggest that the omission of 2012 Predation Study undertaken by the Modesto Irrigation District (MID) and the Turlock Irrigation District as part of the FERC relicensing process is “arbitrary and capricious in violation of the law and skews the entire analysis.” Others note that because of the high predation rate “turbidity within the water column becomes a very important factor.” However, they note that the “SED concludes the Preferred Alternative will not create turbidity;” therefore the preferred alternative “provides no measurable benefit to salmon through the creation of turbidity and does nothing to decrease the single biggest threat salmon face throughout the system.” Additionally some note that the SED does not rely on the best available science and that there are “volumes of more recent and credible predations studies on the tributaries and the LSJR” than those relied on in the SED.

Some respondents ask that the “inadequate fish export facilities in the South Delta be addressed” and suggest that the Board should “require export agencies to replace the 1950 technology screens.” Respondents also ask that the SED include “mitigation measures dealing with the impact of Delta diversions on aquatic species” to address that “small unscreened Delta diversions have the ‘potential to directly remove fish from the channels and alter local movement patterns.’”

Respondents also ask that the analysis be updated to include more recent information on habitat conditions on the Merced River, discussion of the current hatchery review process, the development of hatchery management plans by CDFW for Central Valley salmonids, and “current disease investigations and assessments that have been conducted as part of the VAMP survival studies.”

Some respondents ask that the SED address “how the proposed salinity changes might affect aquatic life” particularly how they might “affect striped bass and any other fish or aquatic plant species.” Respondents ask for the State Water Board to clarify how the “threshold of one-foot per month [was] determined to weigh impacts to redds.” They also suggest that “evaluating the effects of redd dewatering and fish stranding losses base on average monthly flow does not accurately capture the effects on aquatic species.”

Respondents note that the SED does not sufficiently analyze potential impacts on the following fisheries: existing spring-run Chinook salmon populations in the Tuolumne and Stanislaus Rivers, steelhead, green sturgeon, white sturgeon, Sacramento splittail, or any of the Bay-Delta's native resident species.

Respondents ask that the SED evaluate and discuss potential impacts from selenium on the following species: Sacramento splittail, Chinook salmon, Delta smelt, rainbow trout, white sturgeon, greater and lesser scaup, and surf and black scoters.

The description of rainbow trout is of concern to some respondents, who note that the "sections describing rainbow trout/steelhead [do] not correctly describe rainbow trout." Several mention the need to "clearly define rainbow trout and steelhead classification" and avoid blurring "the lines between resident and anadromous rainbow trout in anadromous waters, and rainbow trout located above rim dams." Some ask that the SED be revised "to analyze the extent to which the proposed project protects steelhead populations."

Commenters recommended a number of revisions and corrections in the SED related to fish, such as the following:

- Include the San Joaquin River as part of the location for green sturgeon.
- Clarify the habitat description for green sturgeon to indicate that 8–14 degrees centigrade is the spawning temperature range and that adult habitat temperature can be as high as 22 degrees centigrade.
- Update the description of Delta smelt habitat to indicate that they occur both in the low salinity zone and in freshwater areas.
- Acknowledge that there is a recreational fishery for Sacramento splittail and update the habitat description.
- Include the San Joaquin River in the white sturgeon location.
- Include the Yuba, American and Feather Rivers in the American shad location.
- Acknowledge that there is a population of spring-run Chinook salmon on the Sacramento River and Butte Creek.
- Correct information about timing of Delta smelt migration to acknowledge that migration coincides with first flush, and update spawning information to include the north Delta and Cache Slough Complex.
- Update the description of Delta smelt diet.
- Acknowledge that longfin smelt are also found throughout the legal Delta including the Yolo Bypass and Cache Slough Complex.
- Update description of the Sacramento splittail diet.
- Update the distribution description for striped bass.
- Acknowledge that striped bass are a "major source of mortality to fishes throughout the delta, not just at the SWP."
- Include the Red Hills roach and Kern Brook lamprey in the special-status fish species table (Table 7-2). Both are state species of concern.

- Improve the analysis of green and white sturgeon.
- Reconsider the statement that none of the steelhead populations are considered to be viable, since current data do not support this conclusion.
- Correct references to Sacramento pikeminnow to reflect that pikeminnow is a native species.
- Correctly acknowledge that there are “no spring-run Chinook in the plan area.”
- Correctly acknowledge that the population of Central Valley fall-run Chinook salmon has “been deemed by NMFS to be ‘rebuilt.’”
- Include Delta and longfin smelt as Pelagic Organism Decline (POD) species.
- Update description of Delta smelt to acknowledge that “downstream transport [of larvae] is not an obligate life history trait.”
- Include information about the effect of introduced species on native fish species.
- Evaluate entrainment of fish species by the SWP and CVP in the Bay-Delta estuary.
- Include a complete working salmonid life cycle for the LSJR basin.
- Acknowledge that it “is only a hypothesis that pumping may confuse outmigrating salmonids” and that there “are no studies that have established this hypothesis.”

Additionally, some respondents ask that the Hatchery Operations section be revised to reflect that both the Merced River Hatchery and the Mokelumne River Fish Hatchery are considered part of the San Joaquin River Basin system.

Respondents also ask that the section on diseases be revised to include proliferative kidney disease (PKD) and to clarify that *Ceratomyxa shasta* is a myxosporidian.

Respondents ask that impacts AQUA-1 and AQUA-2 be revised “to reanalyze the impact of reservoir habitat without the assumption that reservoir levels will remain unchanged.” These respondents note that “there is no support for the assumption that the proposed project will not affect reservoir operations.” Some respondents note that the threshold of significance in AQUA-1 should be revisited to ensure it is “sensitive to the species habitat requirements and habitat preferences.”

The analysis in AQUA-3 concerns respondents who assert that it “is not supported and is incorrect.” They note that the “needs of spawning, rearing and migration habitat are not always the same... and the SED must be revised to separate the analysis and evaluate the environmental impacts of spawning, rearing and migration habitat separately.” They also ask that the SED “be revised to include the flow and temperature “modeling results from Merced Irrigation District.” Further, they ask that “migration habitat” be defined and that a “baseline for migration habitat” be established.

Respondents ask that the analysis in AQUA-4 be revised to include a “discussion of the source of information used in developing the incipient lethal threshold criterion.” They also ask that the analysis “address the temperature tolerance of juvenile fall-run Chinook salmon that may be oversummering in the rivers.” Respondents ask that the analysis be revised to analyze the “impacts of the proposed project on the USEPA temperature criteria.” They note that the analysis should address “which temperature levels can be controlled with flow.”

Some respondents assert that AQUA-5's "analysis of exposure to pollutants is inadequate and does not support a conclusion that water quality will be significantly changed." They further note that no data is provided "on existing pollutant levels in the water column versus in sediments on which to draw any conclusion regarding whether increased flow would have a positive or negative effect on water quality."

Respondents complain that the analysis in AQUA-6 "contradicts other analysis in the SED." They ask that the analysis in AQUA-6 be revised to reflect the analysis in Chapter 6, which "concludes the proposed project will result in little, if any mobilization."

Respondents take issue with the analysis in AQUA-7, noting that it "does not provide a baseline for existing dewatering or stranding" and without the baseline "the SED cannot properly determine the impact of the proposed project on stranding." They also note that "stranding and dewatering is an issue very specific to each tributary and specific reaches within each tributary" and ask that the SED be revised to "provide analysis of dewatering and stranding by reach." Others complain that the analysis is inadequate because "it is based on median monthly flow," which can "obscure meaningful changes in flows that occur in specific months under specific hydrologic conditions." Also addressing flow, some note that the use of median monthly flow "fails to properly analyze potential adverse impacts that are most stressful in dry and critically dry hydrologic conditions."

Some respondents are concerned that the analysis in AQUA-8 is problematic because the "conclusions regarding effects of the LSJR flow alternatives on spawning habitat quality are not supported by substantial evidence."

Respondents find that the analysis in AQUA-9 is problematic because the "SED does not provide a baseline for existing food web support." Further, they contend that the "SED does not analyze the impact of the food web on fish populations" and "does not analyze what food is currently available [and] which food sources could be increased." Others note that the analysis "lacks the support of substantial evidence."

Respondents similarly find that AQUA-10 does not provide a baseline for existing predation and "drastically underestimates the baseline impact of predation by stating predation 'pressures' are 'considerable.'" They also complain that the SED "does not analyze the extent to which prey vulnerability results in increased mortality from predation." Further, they note that while 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." They assert that without this analysis the "SED cannot conclude that temperature affects predation."

Respondents also complain about AQUA-11. They note that the "SED does not provide a baseline for existing disease" and that without a baseline "the SED cannot properly determine the impact of the proposed project on disease." Further they suggest that the SED's analysis of disease must include other factors beyond temperature including "age, health, food, toxins, genetic variance and other factors."

Respondents criticize AQUA-12 because it “assumes that decreased travel time to and through the Delta will benefit fish,” but the “SED does not analyze the impact of reduced travel time or provide scientific support for this assumption.” They also note that the SED does not include the fact that “salmon smolts are volitional swimmers and swim faster than the velocity of flow in the LSJR and the Tributaries” in its analysis.

Some respondents ask that the analysis in AQUA-13 “be supplemented with Delta passage modeling results.”

Hydrology and Water Quality

Respondents ask for clarification as to whether the “significance threshold of reducing baseline instream flow by 5 percent or more” applies to tributaries, the SJR or the Delta. Respondents note that the analyses in the Groundwater chapter and the Agricultural Resources chapter contradict each other. They note that the groundwater analysis “assumes that any and all surface water diversions no longer available from the tributary streams will be replaced with groundwater pumping.” However, the Agricultural analysis assumes that “the loss of surface water diversions [will lead] farmers to taking ...irrigated land out of production.” They note that this results in “essentially double counting of impacts.”

Some note that if flows on the Tuolumne are not available to the Regional Surface Water Supply Project (RSWSP), the three cities will use groundwater pumping “to keep up with the demand of providing potable water to existing and future residences and businesses.”

Several respondents fault the SED for not adequately examining changes in reservoir operations that result from the various alternatives. They suggest that the “SED should have analyzed each of the storage operations scenarios, in turn, with each of the flow alternatives...to fulfill the role of the SED in helping decision makers balance impacts and benefits.”

Respondents ask the State Water Board to “further evaluate reliance on median flows... to characterize seasonal runoff patterns.” They suggest that the current reliance on median flows does not always provide accurate estimates of the seasonal runoff patterns.

Respondents ask for the SED to provide the reasoning behind using the range of 1984–2009 for unimpaired flow analysis. Some ask that the SED be revised to “disclose the historic amount of flow the tributaries contribute to the San Joaquin River” and to clarify what contributions are existing and which are historic.

Some respondents are concerned that the analysis of the 35% unimpaired flow “overstate[s] its equivalence to flows recommended by fishery agencies and conservation organizations.”

Respondents also ask that the SED be revised to “correctly describe the system.” Their specific requests include the following:

- Correct where water released at New Don Pedro Dam is regulated.
- Correctly acknowledge that Goodwin Tunnel is gravity fed.
- Acknowledge that water pumped at Jones Pumping Plant is “almost entirely SJR flow.”
- Acknowledge that “very little, if any, San Joaquin River water [makes] it to the Delta.”
- Correctly identify the upstream dams.

Hydrologic and Water Quality Modeling

Several respondents criticize the modeling used in the SED. They assert that the modeling is “so fundamentally flawed” that “it renders the entire document arbitrary and capricious.” Respondents criticize the use of the Water Supply Effect Model (WSE) and note that the “assumptions built into the WSE have no basis in actual conditions and render the results virtually useless.” Respondents suggest that the SED “need[s] to either use CALSIM II for all of its alternatives and modeling runs, or completely revise the WSE before it can be utilized.” Respondents also complain that the SED “applied different models to different aspects of the SED which results in non-comparable results and erroneous evaluation of the environmental impacts.” Respondents assert that all the conclusions in the SED that are based on the WSE must be reconsidered because the WSE is so flawed that no decisions can reasonably be based on the results.

Flaws respondents identified in the WSE include:

- Inaccurate representation of reservoir operations.
- Baseline and no-project alternative are not reflective of current operations.
- Inaccurate description of existing water rights.
- Application of a single-purpose reservoir rule curve.
- Inconsistent applications of existing ESA requirements.
- Incorrect description of water operations.
- Reduced deliveries to Stockton East Water District.
- Use of static reservoir operations.
- Inaccurate representation of the water available at New Melones for spring pulse flows.
- Insufficient estimates of agricultural return flow quantity and quality.
- Failure to check “whether the dissolved oxygen requirement on the Stanislaus is met.”
- The use of CALSIM EC data that are not consistent with historical data.

Other modeling concerns include:

- The failure to describe the interaction between the proposed flow objectives and the NMFS BiOP RPA flow and temperature requirements on the Stanislaus River.
- The failure to fully consider and analyze existing monitoring data.

Water Resources

Some respondents complain that the SED “fails to assess how much water in the plan areas is diverted pursuant to riparian rights and how the SED proposed to regulate water diverted pursuant to a riparian right.” Respondents also ask that the SED include estimates of in-Delta diversions.

Some respondents ask that the SED recognize that farming operations in the Delta increase water quantity because “wild vegetation consumes more water than farming operations.” Others ask that the SED thoroughly evaluate and mitigate “impacts to groundwater quantity and quality...along with the impacts to those that rely upon the groundwater and the resulting economic impacts to the communities it serves.”

Others ask that the SED be revised to include “the upstream reservoirs in the environmental analysis.”

Some complain that the effect of the flow objectives on the Stanislaus River on “the availability of water to the County [Count of San Joaquin and San Joaquin County Flood Control and Water Conservation District] water districts is neither adequately nor specifically described.”

Several respondents express concern regarding the adequacy of the groundwater impacts analysis. They ask that the suggested impacts be quantified in order to “fully disclose to SWRCB members the serious and grave impacts before a decision can be made.” Some note that groundwater overdraft is an issue in San Joaquin County and ask that the SED include the direct and indirect effects of “a reduction in the provision of surface water and the corresponding impact to the groundwater basin and agricultural resources.” Others are concerned that the SED “does not analyze the proposed project’s impact to groundwater recharge.” Respondents also note that the long-term groundwater overdraft has contributed to “intrusion of highly saline water into the Basin,” which has resulted in the abandonment of several municipal and irrigation wells. They ask that the SED include discussion of the degradation of water quality “due to saline migration.”

Respondents argue that the proposed project is “an unreasonable use of water” because the proposed project would have significant effects on agriculture, water supply, groundwater, and recreation without any demonstrable beneficial effects on fish and wildlife.

Some respondents feel that water levels should not be an objective of the WQCP “either as a numeric or narrative objective” because “[w]ater depth or, more specifically, water volume in a channel is a better indicator.” Further they note that “imposing water level performance goals for the purposes of addressing water quality would be unreasonable because the barriers are not designed to be operable in real-time.” These respondents also ask that “flow direction and magnitude, i.e., ‘circulation,’ should not be an objective of the WQCP” because “circulation in the South Delta is a complex and ever-changing sum of inflows from upstream sources” and therefore “the instantaneous flow at a given location changes rapidly ... and is difficult to predict.”

Respondents also ask that the SED be revised to correct information about the operation and effect of “the export and temporary barriers.” Others ask that Appendix H of the SED be revised “to include an assessment of the potential impacts of new surface water supply projects in the southern Delta” and identify “potentially feasible mitigation measures to address any potentially significant impacts.”

Some respondents ask that the SED be corrected to more accurately describe the water levels above and below the Old River barrier and the effect of the barrier on flow.

Water Quality

Respondents take issue with the analysis of water quality in the SED. For example, they note that the analysis of “water levels... is inappropriate as water levels do not affect water quality.” Some also ask that the SED “explicitly identify the efforts on the part of the Central Valley Water Board to design and implement a regional monitoring program for contaminants in the Delta.” Respondents also complain that the SED does not identify the “specific pollutants” that it expects will be affected by increased flow or how much those pollutants will be diluted.

Respondents are concerned that the compliance stations are not appropriate; specifically they note that the Old River at Tracy Boulevard Bridge should not be a compliance station because historically “this station poorly reflects the water quality being supplied to the South Delta...[because] exceedances at this station are adversely impacted by local high salinity discharges.”

Some express concern about the analysis regarding water temperature and complain that the SED “fails to identify the criteria used to compare the alternatives’ impacts on water temperature.” Some are concerned that the time frame used for the analysis of impacts is inappropriate and that the analysis should address year-round effects on water quality. They also note that the SED does not support the conclusions regarding temperature with “substantial evidence.” Respondents also contend that the SED does not provide sufficient support for the threshold of significance for temperature impacts. Some are concerned that “monthly average temperature is a rather coarse review of the temperature regime” and suggest that weekly maximum temperature is an “important consideration to protect against acute effects.”

The relaxation of salinity objectives concerns several respondents. They are concerned about the potential negative effects on agriculture and ask that the decision be delayed until the “South Delta Water Agency study is complete.” Respondents note that the San Joaquin River “is currently the only means of drainage of salinity imported into the San Joaquin drainage basin” and that such drainage is necessary “to maintain production of food.” They ask that the SED examine the “environmental impacts of Regional Board and SWRCB programs for curtailing drainage flows and the cumulative impacts.” Many criticize the SED for failing to “adequately disclose or analyze the effects of salt loading on the west side of the San Joaquin valley and how salt run-off from those areas contributes to the degradation of water quality in the Delta.” Some also note that the SED should include an improved analysis of selenium issues in the Delta. They note that the “larger the salt load, the larger the selenium load.” Further they point out that at elevated levels “selenium becomes actively poisonous” and threatens “many species, including salmon, white sturgeon, green sturgeon, and migratory birds.” Some respondents also note that researchers “have not undertaken yet to model the potential impacts of climate change for the forecasting and handling of toxic contaminants like selenium in the state’s water quality regulation and policy frameworks;” they ask that the Board “seek such research as soon as possible.” Some note that the SED analysis “lacks any meaningful discussion of the substantial reductions in selenium and salt loads resulting from drainage management actions on the west side of the San Joaquin Valley.” Others complain that the SED does not disclose the “violation of the currently existing salinity standard during April–August.” Several respondents are concerned that the project could contribute to increasing salinity levels in groundwater and ask that the SED analyze the potential impacts from this increased salinity on drinking water treatment, agriculture, and increased groundwater demand.

Several respondents express concern over the analysis of electro-conductivity (EC) levels. Some are concerned that the use of monthly averages is inappropriate because it “masks the impacts of high salinity events/times” and because it does not “adequately describe what is happening in the null zones.” Additionally, some are concerned that the timeframe of 1993–2009 “is too short” for the EC analysis and they note that “much more extensive data exists.”

Respondents are also concerned that the SED does not analyze “the effects of the proposed flows and salinity objective on achieving existing objectives in impaired downstream river segments, e.g., attaining the dissolved oxygen objective in Old and Middle Rivers and meeting the load allocations in the Lower San Joaquin River Dissolved Oxygen Total Maximum Daily Load (TMDL)”

Some respondents ask that the SED analyze the potential changes in water quality in the Delta that could occur if “the water users in the San Joaquin Basin utilize more groundwater to offset the loss of surface water supplies.”

Some ask that the State Water Board clarify the potential effects of increased flow on wastewater treatment plants along the rivers.

Respondents complain that requiring Reclamation “to provide assimilative capacity or to require Reclamation and DWR to install, operate and maintain barriers, conduct the specified monitoring, and conduct the specified studies” is “inconsistent with the goal of the Preferred SDWQ Alternative [and] unreasonable and unlawful.” Many are concerned that the SED’s analysis does not accurately reflect the various factors that influence salinity in the southern Delta. As a result, these respondents believe that the SED inappropriately assigns mitigation to the various parties based on the inaccurate assessment of responsibility for salinity contributions. For example, they note that “DWR does not cause degradation of water quality in the south Delta through manipulation of water levels and flows” and is not a source of saline discharges. However, the State Water Board still is “proposing to make DWR responsible for assimilative capacity for local sources and evapo-concentration of salinity in the south Delta.”

Several respondents argue that the SED fails to adequately analyze and disclose adverse impacts on urban drinking water quality, including levels of organic carbon or bromide. Some respondents assert that the threshold used in the SED to assess impacts on water quality for municipal drinking water purposes is inappropriate and request that the threshold be “set to the WQCP’s own water quality standard for protection of municipal and industrial uses of 1.0 EC.”

Respondents also ask that the SED provide a more robust analysis of the potential effects from changes in operation of the Don Pedro Hydroelectric Project on the “water supply reliability for the Bay Area Water Supply and Conservation Agency’s wholesale customer communities.

Hydropower and Energy

A number of respondents express concern about the analysis of potential effects on hydropower generation. Some note that the SED assumes that “reservoir carryover storage” would be “similar to the baseline” and that this assumption is “fundamentally flawed as increased flow requirements will necessarily reduce the water left in the reservoirs and thus carryover storage will be altered.” Further, some note that some hydropower is generated by irrigation releases during the summer months and that “reduced reservoir releases for irrigation would reduce power generation when demand is at its peak.” Respondents also ask that the SED be revised to include an analysis of energy demand as part of the impact analysis.

Some commenters ask that all the alternatives be analyzed on a year-round basis for their potential effects on hydropower, while others are concerned that the analysis is based on the WSE Model that incorrectly assumes that reservoir storage will remain unaffected by the proposed project.

Respondents complain that the SED does not evaluate the costs of replacement energy that would be required because of the proposed project’s “shift of hydropower generation from summer to spring.” They also complain that the SED “fails to analyze the impact ...on the reliability of energy statewide,” and note that unlike other renewable energy sources, hydropower “can be dispatched within minutes,” which allows it to compensate for “over-stressed peak load hours.” Respondents also ask that the SED evaluate the “hydropower impacts on the Governor’s Clean Energy Jobs Plan.”

Respondents ask that the SED include an analysis of the environmental effects from increased groundwater pumping that would result from the proposed project, including the increased use of energy.

Some respondents complain that the analysis “incorrectly assumes regional economic effects due to hydropower loss are ‘virtually imperceptible’ when compared to annual statewide electricity production.” They assert that the impacts of the project “will be much more substantial and concentrated to the project area” and that the SED must analyze the regional hydropower impacts. Additionally, some respondents ask that the analysis be revised “to analyze the proposed project’s impact to hydropower in dry and consecutive dry years.”

Other Physical Elements

Respondents are concerned about the analysis of flooding, sediment, and erosion. Some ask that the SED specify the “point at which unimpaired flow requirements will be suspended” to allow for an adequate analysis of the impacts of flooding. Further, some complain that the flood risk analysis is based on the WSE Model that incorrectly assumes that reservoir storage will remain unaffected by the proposed project. Some also ask that the SED confirm that the “proposed project will not result in floodplain inundation” or increased turbidity. Some also ask that the SED provide “adequate analysis” for the assertion that the flow objective would not “expose people or structures to a significant risk of loss, injury or death involving flooding,” particularly in wet years when “flooding is more likely and damage is more severe.” Some respondents ask that the SED include an analysis of potential seepage issues resulting from the proposed project.

Some ask that the SED be revised to acknowledge the beneficial effect flooding and sedimentation will have on food production and availability. Others ask for the SED to analyze the “effects of additional siltation occurring if greater fishery flows are required.”

Some note that recent flood events “especially 1995, indicated that the capacity at Vernalis was substantially less than the design capacity” and ask that the SED acknowledge this.

Air Quality

Respondents ask that the SED analyze the potential effects on air quality from increased use of diesel pumps for the pumping of groundwater. They ask that this analysis include the potential effects on human health and ask that mitigation measures be incorporated into the SED to address the air quality impacts.

Climate Change

Respondents ask that the SED be revised to address environmental changes as a result of climate change, including habitat changes, temperature, and sea-level rise. Additionally, they complain that failure to analyze the impacts on global warming is a “serious deficiency” and “conflicts with various state policies.” Some note that the threshold of significance used in the SED for contributions to climate change and greenhouse gases lacks “an identifiable, quantitative, qualitative or performance level and is therefore insufficient for CEQA purposes.”

Respondents note that climate change is likely to result in sea-level rise and that this will have effects on the rate at which surface flows drain into the Delta. This may also slow the escape of subsurface flow and “contribute to rising water table elevations” which may “disrupt agricultural production.” They ask that the SED consider these potential effects of climate change in its analysis of the proposed project.

Several respondents complain that the SED does not address the project's cumulative effect on climate change, particularly as it relates to increases in greenhouse gas (GHG) emissions.

Others note that with climate change will come increased drought and as a result they ask for the Board to set minimum flows higher (some suggest 2,000 cfs at Vernalis year round) to ensure that flows are "sufficient to maintain fish and wildlife, water quality and recreational opportunities."

Service Providers

Several respondents note that the "CVP and SWP diversions from the Delta are the major cause of harm to fisheries and, accordingly, the CVP and SWP should mitigate all past, present, and future damage." Respondents complain that the SED's Preferred Alternative "fails to adequately implement or evaluate the principle that the CVP and SWP must mitigate for the impacts caused by export operations." Others ask that the SED "analyze what, if any, water quality impacts would occur to water exported by the CVP and the SWP."

Respondents complain that the SED fails to "evaluate the significant effects of the reduction of surface water supplies ...within SEWD [Stockton East Water District]." Others ask that the SED evaluate the "potential water quality impacts of the proposed alternatives" at Contra Costa Water District's intakes. Some complain that the SED does not include San Francisco Public Utilities Commission's Hetch Hetchy Project facilities upstream of the Don Pedro Project and the SFPUC's service area in the plan area. Further they complain that the SED's conclusion that "the water supply, operations and water infrastructure of CCSF [City and County of San Francisco] will not be affected...is not supported by substantial evidence." In fact the "SFPUC's analysis... shows there would be dramatic and significant impacts on the SFPUC's diversions from the Hetch Hetchy Project...and the Bay Area economy assuming ...that revised water release requirements ordered by FERC" could occur. Additionally, they complain that the SED does not recognize the potential effect of reducing water supply from the Tuolumne River to SFPUC.

Respondents complain that due to the "inaccurate project description," the SED fails to analyze the "reasonably foreseeable potential impacts to the SFPUC and the BAWSCA [Bay Area Water Supply Conservation Agency] member agencies and their service areas." They note that this failure "extends to the cumulative impacts ... [and] the economic analysis."

Water supply to the city of Tracy is of concern to some; they note that the city "receives approximately 70% of its potable water supply from the Stanislaus River" and that the proposed unimpaired flows "will result in shortages during dry years." They ask the Board to "adopt more reasonable and attainable standards." They also ask that the Board "remember that the flow objectives being proposed may affect the salinity levels of Tracy's wastewater discharge" because the city may need to "return to using higher salinity groundwater in greater quantities."

Respondents also complain that the SED ascribes responsibility for salinity in the Delta to "municipal discharges" and note that these "findings are not consistent with the findings of the 2012 Technical Report and DWR Modeling Study of NPDES dischargers." Further, they complain that the cost estimates in the SED for construction of a reverse osmosis plant to desalinate water are too low "and inadequately estimate the full costs of constructing, operating, and maintaining reverse osmosis treatment, including brine disposal." Others complain that the SED assumes that development of reverse osmosis is a "reasonable" option. They ask that the SED consider other options that would help reduce the need for service providers to resort to reverse osmosis.

Some respondents complain that the SED does not “specify what specific actions municipal dischargers will be expected to take, if any, to implement the salinity objectives.”

Others ask that the SED correct the description of service providers and the system, including the following:

- Correctly identify that the Oakdale Irrigation District and South San Joaquin Irrigation District sell hydropower to the California Independent System Operator (CAISO).
- Disclose that water is impounded at Goodwin Dam for diversion to SEWD and Central San Joaquin Water Conservation District.
- Acknowledge that OID and SSJID are not CVP customers or settlement contractors.
- Include analysis of how the proposed project will impact local irrigation districts.
- Acknowledge that Reclamation does not contract to deliver water to OID/SSJID.
- Include a more complete and accurate description of the contract between MID and the City of Modesto.
- Include analysis of the proposed project’s impact on service provider pricing.
- Ensure the list of water suppliers is complete.
- Include analysis of impacts on water suppliers under a range of water year types.

Agricultural Resources

Respondents complain that the “Board ignores conscious [sic] Delta farming practices that manage salt and sustain their lands’ fertility.” Respondents also complain that the SED fails to discuss the data that is available on the effect of salinity on Delta agriculture.

They also complain that the SED misrepresents the water practices of agriculture and assert that irrigation district customers “make every effort to ensure the water is used efficiently.” Some observe that while “agricultural uses have improved water use efficiency across California over the past several decades, it is clear that there are still substantial gains to be achieved and that improvements in agricultural water use efficiency can reduce the impacts of reduced water diversions.” These respondents ask that the SED include an analysis of the impacts of improving water use efficiency.

Some respondents ask that the SED acknowledge that “water transfers can constitute a beneficial use of water that helps optimize water use throughout the state,” noting that if existing and recent water transfers out of the basin are not considered, the “SED likely overestimates potential agricultural impacts.”

Some respondents suggest that the SED’s preferred alternative “will result in the loss of thousands of acres of agricultural land, including agricultural lands that are prime or [of] statewide or local importance.” Further, they assert that the project will “result in the cancellation of untold Williamson Act contracts.” They note that the SED therefore “violates” many local general plans, yet fails to analyze these impacts.

Respondents note that in the Turlock Irrigation District, there are very few acres of crops that could be temporarily left fallow as most acres are either permanent crops or dairy-related crops. They ask that the impacts on agriculture be fully analyzed, including the effect on the dairy industry of

fallowing crops. Others note that the assumption that farmers will “fallow only low value crops...is problematic.” They note that it is “contrary to local policies and rules on water shortage...and is contrary to the rules of water right priority.”

Respondents also note that many acres in the region are orchards and that these crops both represent a significant investment and can be significantly affected by even 1 year of insufficient water. Respondents also ask that the SED include an analysis of the impacts from seepage from the Stanislaus River on agriculture, specifically on orchards.

Several respondents criticize the use of the WSE Model and the SWAP Model to support the agricultural resources analysis. They note that the SWAP Model is “driven by the water supply effects of the WSE Model” and “therefore the defects of the WSE Model are embedded into the SWAP Model.” Further, they note that the SWAP Model inappropriately dilutes the local regional economic agricultural effect.

Cumulative Effects

A number of respondents are concerned that the SED does not sufficiently analyze cumulative impacts. They note that the SED does not “analyze whether the combined effects of the proposed project and other projects will result in significant adverse environmental impacts.” Some also complain that the cumulative impacts section on aquatic resources make “no mention of the SJRRP” or the California Water Fix. They also note that the SED “fails to determine whether the proposed project’s incremental effects are cumulatively considerable.”

Recreation

Respondents assert that the SED analysis on economic losses from recreation is inaccurate and ask that the SED be revised to analyze the proposed project’s impacts on recreation. They note that the analysis is based on the WSE Model that inaccurately assumes that reservoir operations will not be affected by the proposed project. They note that the proposed project may have “potentially significant impacts to boating and aesthetics at New Melones Reservoir.”

Socio-Economic Concerns

Economic Effects

Respondents complain that while the Board “considers economic factors and competing beneficial uses of water in determining the reasonable protection of beneficial uses and the extent to which protection of Public Trust resources is feasible,” the Board does not “consider the ability and need to develop alternative water supplies, including recycled water, to meet other beneficial uses, such as municipal and agricultural uses.” Respondents note that increased costs “associated with investments in alternative water supplies, like improved water use efficiency, do not demonstrate that Public Trust protections are infeasible.”

Others note that the economic analysis “assumes little to no elasticity in water use” and that “it does not take into account more efficient use of water through improvements in technology, better groundwater management, and changes in cropping patterns.”

Social and Economic Issues

Respondents criticize the economic analysis and suggest that it “does not include a sufficient range of economic sectors that may be affected.” They note that the analysis “does not analyze the economic effects that would occur when the doubling goal is achieved, nor the impact to fisheries, recreation and related economic sectors that would occur under the status quo of declining salmonid runs.” Others note that the SED fails to analyze the “economic and employment benefits of increased flow alternatives, including recreational and commercial fishing and non-market economic benefits.” Respondents complain that the SED overly relies on the IMPLAN economic model and that the model “overestimates ripple effects on the regional economy from changes in agricultural revenue.”

Respondents ask that the SED include an analysis of the proposed project’s “impact on the cost of treated water.” They note that since “less water is being treated, the costs of delivered water will go up to cover capital costs so [that] the bonds can be repaid.”

Others ask that the economic analysis include the following:

- The project’s effect on stranded capital costs.
- The economic effects in dry or consecutive dry years.
- Calibration of the SWAP Model area with the plan area.
- Localized economic impacts in the plan area.
- The economic impacts from increased groundwater pumping.
- The costs associated with loss in energy revenue.
- Economic benefits from increased flows including recreational activities such as boating, hunting, hiking, bird watching and camping.

Methods of Compliance Evaluation

Respondents complain that the SED fails to consider reasonably foreseeable methods of compliance. They note that instead of “disclosing and analyzing all reasonable methods of compliance, the SED assumes a single method of compliance and analyzed only this single method.” Further, they assert that “the method of compliance assumed by the SED is not reasonable.” Some also note that the SED must be revised to “identify and evaluate the environmental impacts of all reasonable methods of compliance.”