

1 **Appendix 1D**

2 **Comments from Interest Groups and**  
 3 **Responses**

4 This section contains copies of comment letters from interest groups on the Draft  
 5 Environmental Impact Statement (EIS) for the Coordinated Long-term Operation  
 6 of the Central Valley Project (CVP) and State Water Project (SWP). Each  
 7 comment in the comment letters was assigned a number, in sequential order. The  
 8 numbers were combined with the name of the interest group (example: AA 1).  
 9 The comments with the associated responses are arranged alphabetically by  
 10 interest group name, and appear in the chapter in that order.

11 Copies of the comments are provided in Section 1D.1. Responses to each of the  
 12 comments follow the comment letters, and are numbered in accordance with the  
 13 numbers assigned in the letters.

14 Large attachments included with letters from AquAlliance; California Water  
 15 Impact Network and California Sportfishing Protection Alliance; Natural  
 16 Resources Defense Council and The Bay Institute; and North Coast Rivers  
 17 Alliance are provided in Section 1D.2.

18 **1D.1 Comments and Responses**

19 The interest groups listed in Table 1D.1 provided comments on the Draft EIS.

20 **Table 1D.1 Interest Groups Providing Comments on the Draft Environmental**  
 21 **Impact Statement**

Acronym	Commenter
AA	AquAlliance
CFBF	California Farm Bureau Federation
CSD	Coalition for a Sustainable Delta
CWIN	California Water Impact Network
CWIN - CSPA	California Water Impact Network and California Sportfishing Protection Alliance
CESAR	The Center for Environmental Science Accuracy and Reliability
EWC 1	Environmental Water Caucus
EWC 2	Environmental Water Caucus
FOTR	Friends of the River
GGSA-PC	Golden Gate Salmon Association and Pacific Coast Federation of Fishermen's Association
NRDC-TBI	Natural Resources Defense Council and The Bay Institute
NCRA	North Coast Rivers Alliance
Restore the Delta	Restore the Delta
SVWA	South Valley Water Association
SWC	State Water Contractors

1 **1D.1.1 AquAlliance**



September 29, 2015

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Re: Comments on the Bureau of Reclamation's *Coordinated Long-Term Operation of the Central Valley Project and State Water Project* Draft Environmental Impact Statement.

Dear Mr. Nelson:

AquAlliance submits the following comments and questions on the Bureau of Reclamation's *Coordinated Long-Term Operation of the Central Valley Project and State Water Project* ("Project") Draft Environmental Impact Statement ("DEIS"). This National Environmental Policy Act ("NEPA") analysis was ordered by the United States District Court for the Eastern District because the Bureau of Reclamation hadn't analyzed direct, indirect and cumulative impacts from Central Valley Project ("CVP") and State Water Project ("SWP") ("Projects") while implementing the 2008 Fish and Wildlife Service ("FWS") Biological Opinion ("BO") and a 2009 National Marine Fisheries Service ("NMFS") BO.

AA 1

AquAlliance exists to sustain and defend northern California waters. We have participated in CVP and SWP water transfer processes, commented on past transfer documents, commented on the Bureau of Reclamation ("Bureau") and Department of Water Resources ("DWR") ("Agencies") Temporary Urgency Change Petitions, commented on the DEIS/EIR for the Bay Delta Conservation Plan ("BDCP"), and sued the Bureau three times in the last five years. In doing so we seek to protect the Sacramento River's watershed in order to sustain family farms and communities, enhance Delta water quality, protect creeks and rivers, native flora and fauna, vernal pools and recreational opportunities, and to participate in planning locally and regionally for the watershed's long-term future.

The *Coordinated Long-Term Operation of the Central Valley Project and State Water Project* is seriously deficient and should be withdrawn. If the Bureau is determined to pursue operations that are as or more damaging to Sacramento Valley and Delta communities, groundwater dependent farmers, and the environment as has occurred under the No Action Alternative (current

AA 2

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operations), the Bureau must prepare a DEIS that truly discloses the damage the Projects have inflicted on California.

AA 2  
continued

This letter relies significantly on, references, and incorporates by reference as though fully stated herein, for which we expressly request that a response to each comment contained therein be provided, the following comments submitted here by AquAlliance:

AA 3

- Custis, Kit H., 2014. Comments and recommendations on U.S. Bureau of Reclamation and San Luis & Delta-Mendota Water Authority Draft Long-Term Water Transfer DRAFT EIS/EIR, Prepared for AquAlliance.
- ECONorthwest, 2014. Critique of Long-Term Water Transfers Environmental Impact Statement/Environmental Impact Report Public Draft, Prepared for AquAlliance.
- Mish, Kyran D., 2014. Comments for AquAlliance on Long-Term Water Transfers Draft EIR/EIS.
- Cannon, Tom, Comments on Long Term Transfers EIR/EIS, Review of Effects on Special Status Fish. Prepared for California Sportfishing Protection Association.

In addition, we renew the following comments previously submitted, attached hereto, as fully bearing upon the presently proposed project and request:

AA 4

- 2009 Drought Water Bank (“DWB”).
- 2010-2011 Water Transfer Program.
- 2013 Water Transfer Program.
- 2014 Water Transfer Program.
- C-WIN, CSPA, AquAlliance Comments and Attachments for the Bay Delta Conservation Plan’s EIS/EIR.
- AquAlliance’s comments on the Bay Delta Conservation Plan’s EIS/EIR.
- CSPA’s comments on the Bay Delta Conservation Plan’s EIS/EIR.
- CSPA’s comments on this DEIS for the *Coordinated Long-Term Operation of the Central Valley Project and State Water Project*

AA 5

**I. The DEIS Contains an Inadequate Project Description.**

NEPA requires an accurate and consistent project description in order to fulfill its purpose of allowing informed decision-making. 43 u.s.c. s 4332(2)(c). Without a complete and accurate description of the project and all of its components, an accurate environmental analysis is not possible. *See, e.g., Blue Mountains Biodiversity Project v. United States Forest Service*, 161 F.3d 1208, 1215 (9th Cir. 2008).

AA 6

The Project Description Contains an Inadequate Statement of Objectives, Purpose, and Need.

The lack of a stable project description and proposed alternative obfuscates the need for and impacts from the Project. The importance of this section in a NEPA document can’t be overstated. “It establishes why the agency is proposing to spend large amounts of taxpayers’ money while at the same time causing significant environmental impacts... As importantly, the project purpose

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COMMENTS OF AQUALLIANCE FOR THE BUREAU OF RECLAMATION’S DEIS FOR THE *Coordinated Long-Term Operation of the Central Valley Project and State Water Project* (September 29, 2015)

and need drives the process for alternatives consideration, in-depth analysis, and ultimate selection. The Council on Environmental Quality (CEQ) regulations requires that the EIS address the "no-action" alternative and "rigorously explore and objectively evaluate all reasonable alternatives." Furthermore, a well-justified purpose and need is vital to meeting the requirements of Section 4(f) (49 U.S.C. 303) and the Executive Orders on Wetlands (E.O. 11990) and Floodplains (E.O. 11988) and the Section 404(b)(1) Guidelines. Without a well-defined, well-established and well justified purpose and need, it will be difficult to determine which alternatives are reasonable, prudent and practicable, and it may be impossible to dismiss the no-build alternative”<sup>1</sup>

AA 6  
continued

The DEIS fails to fully inform the public due to the omissions in the DEIS of recently past and current operations that would explain the No Action Alternative. For example, the joint operations in the last two years have operated outside state and federal laws as presented in the Temporary Urgency Change Petitions sought by the Agencies. Fish were slaughtered in 2014 while the Agencies operated outside water quality and flow requirements with the approval of the State Water Resources Control Board (“SWRCB”).<sup>2</sup>

AA 7

The Project Description Lacks Detail Necessary for Full Environmental Analysis.

AA 8

The operation of the CVP and SWP were intended to be contingent on lawful acts, but the Projects have so seriously stepped outside the boundaries of contract and environmental laws that the ability to have a stable Project description in the DEIS is impossible. Of the many possible examples, two of the most current instances that severely alter the Project and are not disclosed in the DEIS are the Firebaugh Canal Water District v. the United States of America settlement and the 2014 and 2015 Temporary Urgency Change petitions and orders. Without full disclosure of 1) the ramifications of a settlement that provides a secure water delivery to a junior CVP claimant south of the Delta with an unknown ability, commitment, and timeframe to manage its polluted drainage and 2) the inability of the Projects to plan for and manage dry years in California without Temporary Urgency Change petitions and orders that have and are currently destroying public trust resources, the DEIS is meaningless. The DEIS must not only describe what is on paper for CVP and SWP operations, but what is actually happening on the ground, as it were, that follows and deviates, sometimes significantly, from plans, programs, and the law.

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The Project Description does Not Include all Project Components.

- i. The Bureau Fails to Disclose Significant Past, Present, and Future Streamflow Depletion

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Streamflow depletion is only mentioned once in the DEIS. This deficiency strikes at the core of our critique, which views the CVP and the SWP as once operating within the law, albeit with more water on paper than could ever be available, until the limits of hydrology caused the Agencies and some of their contractors to look for tools to game the law – and the hydrology - of California. The CVP and SWP have extended water far from the areas of origin for agricultural, urban, and

<sup>1</sup> Federal Transportation and Highway Administration, 1990. *NEPA and Transportation Decisionmaking: The Importance of Purpose and Need in Environmental Documents.*  
<http://www.environment.fhwa.dot.gov/projdev/tdmneed.asp>

<sup>2</sup> California Sportfishing Protection Alliance et al., 2015. Protest –(Petitions) Objection Petition for Reconsideration Petition for a Hearing. (p. 3).

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industrial uses. In so doing, particularly with paper water, the state and federal governments have facilitated a destructively unrealistic demand for water. Ever willing to destroy natural systems to meet demand for profit, the San Joaquin River dried up and subsidence caused by groundwater depletion in the San Joaquin Valley is even cracking water conveyance facilities.<sup>3</sup> Enter conjunctive use where the Agencies facilitate and their contractors implement river water sales and pump groundwater to continue crop production. The continual, long-term groundwater overdraft in the San Joaquin Valley, the expansion of new permanent crops in both the San Joaquin and Sacramento valleys, and groundwater substitution transfers by CVP and SWP contractors *all* cause streamflow depletion (also see Groundwater Section below). Failing to disclose how the CVP and SWP cause streamflow depletion is a major omission that must be corrected and included in a recirculated DEIS.

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ii. Historic Flow Data are Not Disclosed

In providing an “[o]verview of hydrologic conditions in the Trinity River and Central Valley watersheds,” the DEIS fails to provide actual, historic flow data. (p.5-14) There are broad descriptions of infrastructure, capacities, and mean daily flows in Chapter 5, but no mention of historic ranges of flow above or below dams. Additionally, the maps provided in the section *Surface Water Resources and Water Supply Figures* fail to identify towns that are used for geographic identification such as Douglas City.

AA 11

iii. Water Conservation History and Potential is Absent

The DEIS mentions that, “Water conservation is an integral part of water management in the study area,” but fails to provide even a modicum of detail and analysis for the reader. (p. 5-58) The discussion ends in one paragraph without any reference to additional material in the DEIS. This is a serious omission that must be remedied in a recirculated draft EIS.

AA 12

iv. Historic Water Transfer Background is Minimally Disclosed

“Water transfers also are an integral part of water management,” is the introduction to water transfers on page 5-58, yet the discussion focuses on 2012 and 2013 with minimal detail and then lists a few long-term transfer approvals from 2008 forward. What this divulges is that they are an “integral part of water management,” *now*. That water transfers have become so essential in the past decade forces an examination of the Projects’ foundational assumptions, operations, and management, or, as some would say, mismanagement. (see Water Claims below).

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<sup>3</sup> Sneed, et al., 2012. Abstract: *Renewed Rapid Subsidence in the San Joaquin Valley, California*.  
“The location and magnitude of land subsidence during 2006–10 in parts of the SJV were determined by using an integration of Interferometric Synthetic Aperture Radar (InSAR), Global Positioning System (GPS), and borehole extensometer techniques. Results of the InSAR measurements indicate that a 3,200-km<sup>2</sup> area was affected by at least 20 mm of subsidence during 2008–10, with a localized maximum subsidence of at least 540 mm. Furthermore, InSAR results indicate subsidence rates doubled during 2008. Results of a comparison of GPS, extensometer, and groundwater-level data suggest that most of the compaction occurred in the deep aquifer system, that the critical head in some parts of the deep system was exceeded in 2008, and that the subsidence measured during 2008–10 was largely permanent.” Conference presentation at *Water for Seven Generations: Will California Prepare For It?*, Chico, CA.



The DEIS acknowledges that water transfers from the Sacramento Valley to south of the Delta began in earnest in 2001 and that up to 298,806 af were transferred between 2001 and 2012 – we assume the Bureau means this as an annual figure. (p. 5-58) However, only south-of-Delta transfers by Program are disclosed and for only two years: 2012 and 2013. Essential information is noticeably absent from the DEIS, such as:

- The Bureau, DWR, and individual water districts have claimed much of the transfer water market was “one-year,” “short-term,” or an “emergency.” The serial and escalating nature of water transfers from the Sacramento Valley to south-of-Delta fit none of those descriptions. Examples of the kind of material that should be provided in the DEIS include:
  - a. Environmental Assessment and Findings of No Significant Impact (“FONSI”) for the *2008 Option and Forbearance Agreement Between Glenn-Colusa Irrigation District, San Luis & Delta-Mendota Water Authority and the United States Bureau of Reclamation, and Related Forbearance Program*. The proposed project planned to transfer Sacramento River water, up to 85,000 acre-feet (AF), in accordance with a forbearance program undertaken by Glenn Colusa Irrigation Project (“GCID”) through voluntary crop idling or crop shifting (82,500AF), and to provide up to 2,500 acre-feet with groundwater substitution produced from two GCID-owned groundwater wells located near the western edge of Butte County. Final figures for this water sale and all other planned and actual sales in 2008 should be disclosed by contractor.
  - b. Environmental Assessment and FONSI, *2009 Drought Water Bank*. The Bureau and 20 of its contractors planned to sell 199,885 af through a combination of crop idling, crop substitution, groundwater substitution, and reservoir reoperation. (Final FONSI pp. 2-3) “The cumulative total amount potentially transferred under the DWB from all sources would be up to 370,935 af.” (*Id.* p. 10) However, DWR and the Bureau allowed up to a maximum 600,000 af.<sup>4</sup> Final figures for all planned and actual water sales in 2008 should be disclosed by contractor.
  - c. Environmental Assessment and FONSI for the *2010-2011 Water Transfer Program*. 395,910 AF of CVP and non-CVP water. This should be disclosed and whatever amount of water was actually transferred. That AquAlliance sued over the inadequate Environmental Assessment should be noted.
  - d. In 2012 and 2013 the DEIS discloses the amount of water that was actually transferred, but fails to reveal that significantly more water was planned for south-of-Delta transfers. This is a crucial point when considering a growing dependence on transfers as demand escalates and in analyzing cumulative impacts.
    - i. Initiating Section 7 Consultation letter 2012. “For 2012 water transfers, Reclamation anticipates a maximum of approximately 76,000 acre-feet of water could be transferred. The 76,000 acre-feet of transfer water would be made available through groundwater substitution.” (p. 2) The DEIS reveals that 47,420 af were actually transferred, but the uppermost potential for the 76,000 af transfer all from groundwater substitution combined with all other transfers is not disclosed and should be.

<sup>4</sup> DWR 2009. *Addendum to the Environmental Water Account Environmental Impact Statement/Environmental Impact Report*. [http://www.usbr.gov/mp/nepa/nepa\\_projdetails.cfm?Project\\_ID=107](http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=107)

AA 13  
continued

- ii. The DEIS discloses that in 2013 63,790 af were transferred. The amount of water planned for transfer from all sources should also be disclosed.
- e. The Bureau and the San Luis Delta Mendota Water Authority's ("SLDMWA") 2014 Environmental Assessment/Initial Study. Not disclosed in the DEIS is that, "The Proposed Action is for sellers to potentially make available up to 175,226 AF of water based on a 75 percent CVP water supply forecast for Settlement Contractors. Sellers could make water available for transfer through groundwater substitution, cropland idling, or crop shifting. Other transfers not involving the SLDMWA and its participating members could occur during the same time period. The Tehama Colusa Canal Authority (TCCA) released a separate EA/IS to analyze transfers from a very similar list of sellers to the TCCA Member Units." AquAlliance sued the Bureau over the inadequate EA/IS. This complete background information should be corrected in a revised and recirculated DEIS.
- f. The Bureau and SLDMWA's *Environmental Impact Statement and Environmental Impact Report* for the 2015-2024 *Long Term North-to-South Water Transfer Program*. The DEIS mentions the 10-year water transfer program, but failed to disclose the uppermost amount of water that may be transferred: 600,000 of each year. Also lacking is that AquAlliance and partners sued over the inadequate EIS/EIR, which is moving forward.
- The Bureau should disclose how it and DWR began a Programmatic EIS to facilitate water transfers from the Sacramento Valley and the interconnected actions that are integrally related to it, but never completed that EIS and for years impermissibly broke out the annual transfers from the overall Program for piecemeal review as AquAlliance presents above. See 68 Federal Register 46218 (Aug 5, 2003) (promising a Programmatic EIS on these related activities, "include[ing] groundwater substitution in lieu of surface water supplies, conjunctive use of groundwater and surface water, refurbish existing groundwater extraction wells, install groundwater monitoring stations, install new groundwater extraction wells..." *Id.* At 46219. See also [http://www.usbr.gov/mp/nepa/nepa\\_projdetails.cfm?Project\\_ID=788](http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=788) (current Bureau website on *Short-term Sacramento Valley Water Management Program EIS/EIR*).

Lastly, noticeably missing from the DEIS is also the Agencies involvement in funding infrastructure to expand water transfers. One example is the *U.S. Bureau of Reclamation September 2006 Grant Assistance Agreement with Glenn Colusa Irrigation District*. "GCID shall define three hypothetical water delivery systems from the State Water Project (Oroville), the Central Valley Project (Shasta) and the Orland Project reservoirs sufficient to provide full and reliable surface water delivery to parties now pumping from the Lower Tuscan Formation. The purpose of this activity is to describe and compare the performance of three alternative ways of furnishing a substitute surface water supply to the current Lower Tuscan Formation groundwater users to eliminate the risks to them of more aggressive pumping from the Formation and to optimize conjunctive management of the Sacramento Valley water resources." Disclosure of this and all other funding actions that are part of CVP and SWP operations must be presented in a revised and recirculated DEIS.

AA 14

COMMENTS OF AQUALLIANCE FOR THE BUREAU OF RECLAMATION'S DEIS FOR THE  
*Coordinated Long-Term Operation of the Central Valley Project and State Water Project*  
(September 29, 2015)

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The Over Allocation of Water Claims is not Disclosed

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The DEIS must describe existing water right claims of sellers, buyers, the Bureau, and DWR. Without this foundational background, the reviewer is unable to understand the Project. In response to inquiries from the Governor’s Delta Vision Task Force, the SWRCB acknowledged that while average runoff in the Delta watershed between 1921 and 2003 was 29 million acre-feet annually, the 6,300 active water right permits issued by the SWRCB is approximately 245 million acre-feet<sup>5</sup> (pp. 2-3). In other words, **water rights on paper are 8.4 times greater than the real water in California’s Central Valley rivers and streams diverted to supply those rights on an average annual basis.** And the SWRCB acknowledges that this ‘water bubble’ does not even take account of the higher priority rights to divert held by pre-1914 appropriators and riparian water right holders (*Id.* p. 1). More current research reveals that the average annual unimpaired flow in the Sacramento River basin is 21.6 MAF, but the consumptive use claims are an extraordinary 120.6 MAF – 5.6 times more claims than there is available water.<sup>6</sup> Informing the public about water rights claims would necessarily show that buyers and the Agencies clearly possess junior water rights as compared with those of many willing sellers. Full disclosure of these disparate water rights claims and their priority is needed to help explain the Project. Without it, the public and decision makers have insufficient information on which to support and make informed choices.

To establish a proper legal context for these water rights, the DEIS should also describe more extensively the applicable California Water Code sections about the treatment of water rights involved in water transfers.

Like federal financial regulators failing to regulate the shadow financial sector, subprime mortgages, Ponzi schemes, and toxic assets of our recent economic history, the Bureau and the State of California have been derelict in its management of scarce water resources. As we mentioned above we are supplementing these comments on this matter of wasteful use and diversion of water by incorporating by reference and attaching the 2011 complaint to the State Water Resources Control Board of the California Water Impact Network the California Sportfishing Protection Alliance, and AquAlliance on public trust, waste and unreasonable use and method of diversion as additional evidence of a systemic failure of governance by the State Water Resources Control Board, the Department of Water Resources and the U.S. Bureau of Reclamation, filed with the SWRCB on April 21, 2011.<sup>7</sup>

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**II. Alternatives**

The No Action Alternative is supposed to describe the current operations of the CVP and SWP (“Projects”) in the last seven years that were to follow the Reasonable and Prudent Alternatives (“RPAs”) from the Biological Opinions (“BOs”). (DEIR p. 3-3) Yet the species that were meant to

<sup>5</sup> SWRCB, 2008. Water Rights Within the Bay Delta Watershed

<sup>6</sup> California Water Impact Network, AquAlliance, and California Sportfishing Protection Alliance 2012. *Testimony on Water Availability Analysis for Trinity, Sacramento, and San Joaquin River Basins Tributary to the Bay-Delta Estuary.*

<sup>7</sup> C-WIN et al. 2011. Complaint, California Water Impact Network, AquAlliance, and California Sportfishing Protection Alliance v. SWRCB, DWR and Respondent Bureau of Reclamation.

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COMMENTS OF AQUALLIANCE FOR THE BUREAU OF RECLAMATION’S DEIS FOR THE  
*Coordinated Long-Term Operation of the Central Valley Project and State Water Project*  
 (September 29, 2015)



AA 16  
continued

be protected by the BOs are tipping into extinction due to the mismanagement of the Projects and the consistent waiver of requirements that have been sought by the Bureau and DWR and approved by the State Water Resources Control Board (“SWRCB”) in temporary urgency change orders.<sup>8 9</sup>

AA 17

- Alternative 1 would eliminate RPA actions that would not otherwise occur without the RPA’s, and revert to operations and flow requirements that existed prior to issuance of the BOs. However, it would retain non-operational RPA requirements that have already been implemented or are in the process of being implemented. Alternative 1 also predicts, “Long-term average annual exports would be 1,051 TAF (22 percent) more ...” (DEIS p. 3-60)
- Alternative 2 would eliminate a series of physical measures included in the RPA’s, including fish passage at CVP dams, temperature improvements at CVP dams on the American River, actions to reduce entrainment at CVP and SWP export facilities, and others. (DEIS p. 3-32)
- Alternative 3 would eliminate RPA actions that would not otherwise occur without the RPA’s. It would weaken Old and Middle River (OMR) export restrictions from the present restrictions in the BOs, implement a suite of actions on the Stanislaus River that substantially reduce flow requirements and establish a “predator control program,” trap and haul salmonid out-migrants in the San Joaquin River from March through June, and reduce ocean harvest of salmon.
- Alternative 4 would eliminate RPA actions that would not otherwise occur without the RPA’s. It would limit development in floodplains, replace levee riprap with vegetation, establish a “predator control program,” trap and haul salmonid out-migrants in the San Joaquin River from March through June, and reduce ocean harvest of salmon.
- Alternative 5 would implement the RPA’s and additionally require positive OMR flows in April and May. It would also require April and May pulse flows from the Stanislaus River, whose volume would be determined by water year type and the location of X2. (DEIS p. 3-42)

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As we explain throughout our comments, none of the alternatives, including the No Action Alternative are sufficient to avoid jeopardy to listed species or to protect other public trust resources consistent with applicable law. The Bureau must reject the Alternatives in the DEIS including the No Action Alternative and craft Project Alternatives that is fully compliant with the Endangered Species Act and fully protective of all public trust resources.

<sup>8</sup> C-WIN et al. 2011. Complaint, California Water Impact Network, AquAlliance, and California Sportfishing Protection Alliance v. SWRCB, DWR and Respondent Bureau of Reclamation.

<sup>9</sup> The Bay Institute, 2015. Appendix to Temporary Urgency Change Protest, February 2015.

**III. Modeling**

The Central Valley Hydrologic Model (CVHM) spans a 42-year simulation period starting in water year 1962. The model ends in 2003, which fails to account for current conditions, accelerating climate change conditions, and future conditions. On this basis alone the model is completely inadequate and any conclusions from the model are as well. (p. 7-110) It is impossible for the public to have any confidence in modeling results that are using such antiquated input data. Moreover, that “[C]alSIM outputs are included in the CVHM input files,” exacerbates AquAlliance’s concerns regarding the modeling as CalSIM’s adequacy has repeatedly been called into question.<sup>10</sup> Just one of the many issues with CalSIM is the shocking assumption that, “Groundwater resources are assumed infinite, i.e., there is no upper limit to groundwater pumping.” (*Id.* p. 8)

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We also question the heavy reliance on modeling when the Agencies have had decades of opportunity to gather and use actual stream and groundwater data. The DEIS relies only on modeling to consider impacts from the Project when it needs to compile and present results from actual monitoring and reporting prior to recirculating a revised DEIS.

AA 20

Climate Change

The DEIS discloses that, “A growing body of evidence indicates that Earth’s atmosphere is warming. Records show that surface temperatures have risen about 0.7°C since the early twentieth century and that 0.5°C of this increase has occurred since 1978 (NAS 2006).” (p. 5A A-25). It acknowledges that, “Observed climate and hydrologic records indicate that more substantial warming has occurred since the 1970s and that this is likely a response to the increases in greenhouse gas (GHG) increases during this time.” (*Id.*) Moreover, the DEIS reveals that, “The GCM [global climate models] simulations of historical climate capture the historical range of variability reasonably well (Cayan et al. 2009), but historical trends are not well captured in these models. Projections of future precipitation are much more uncertain than those for temperature.” (*Id.*) One would think that the modeling weaknesses with historical trends and projections of future precipitation would cause alarm at the Bureau. What has prevented the Agencies from locating models with better predictability? Barring location of more proficient models, and in light of the devastating environmental impacts from current operation of the Projects,<sup>11 12</sup> the Agencies must err on the side of caution and reject the Alternatives in the DEIS including the No Action Alternative and craft a Project Alternative that is fully compliant with the Endangered Species Act and fully protective of all public trust resources.

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The DEIS relates that, “Projected change in stream flow is calculated using the VIC macroscale hydrologic model. The use of the VIC model is primarily intended to generate changes in inflow magnitude and timing for use in subsequent CalSim II modeling. While the model contains several sub-grid mechanisms, the coarse grid scale should be noted when considering results and analysis of local-scale phenomena. The VIC model is currently best applied for the regional-scale

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<sup>10</sup> Close, A., et al. 2003. A Strategic Review of CALSIM II and its Use for Water Planning, Management, and Operations in Central California

<sup>11</sup> C-WIN et al. 2011. Complaint, California Water Impact Network, AquAlliance, and California Sportfishing Protection Alliance v. SWRCB, DWR and Respondent Bureau of Reclamation.

<sup>12</sup> The Bay Institute, 2015. Appendix to Temporary Urgency Change Protest, February 2015.

AA 23  
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hydrologic analyses. There are several limitations to long-term gridded meteorology related to spatial-temporal interpolation due to limited availability of meteorological stations that provide data for interpolation. In addition, the inputs to the model do not include any transient trends in the vegetation or water management that may affect stream flows; they should only be analyzed from a “naturalized” flow change standpoint. Finally, the VIC model includes three soil zones to capture the vertical movement of soil moisture, but does not explicitly include groundwater. The exclusion of deeper groundwater is not likely a limiting factor in the upper watersheds of the Sacramento and San Joaquin river watersheds that contribute approximately 80 to 90 percent of the runoff to the Delta. However, in the valley floor, interrelation of groundwater and surface water management is considerable. Water management models such as CalSim II should be used to characterize the heavily “managed” portions of the system.” (5A.A-38 to 5A.A-39) This paragraph raises numerous concerns: 1) We appreciate that the DEIS disclosed some of the major limitations of the VIC model, but wonder what the Agencies intend to do to overcome the “the coarse grid scale” and “long-term gridded meteorology related to spatial-temporal interpolation” problems. This should be disclosed. 2) The DEIS dismisses that the VIC model “does not explicitly include groundwater” and asserts that it is not a limiting factor in the upper watersheds although “upper watershed” is not defined or illustrated in a map. The Bureau must elaborate further by describing where the upper watershed begins and ends and how ignoring all groundwater there is inconsequential. 3) The DEIS states that “CalSim II should be used to characterize the heavily “managed” portions of the system,” without answering why this hasn’t already happened. This should have preceded the DEIS. And again, we encourage the Bureau to seek a model other than CalSIM for all of the reasons presented above.

Lastly, what prevented the Bureau from using science from reputable sources such as Soumaya Belmecheri and colleagues who find that, “The exceptional character of the 2012-2015 drought has been revealed in millennium-length paleoclimate records...” and “The spring snowpack on mountains crucial to California’s water supply reached its lowest level this year in half a millennium, according to a study published on 14 September in Nature Climate Change.”<sup>13</sup> Not only does this demonstrate the importance of using more recent data than what the Bureau models used (e.g. CVHM ending in 2003), but the results should have significant bearing on the creation and analysis of alternatives.

#### Groundwater Storage Modeling

A U.C. Davis Master’s Thesis finds that the CVHM model used for the DEIS varies drastically from DWR’s model, C2VSIM.<sup>14</sup> “As seen in the change in storage region totals at the bottom of Table 3.5, the differences are large in the Sacramento region, with CVHM showing overall gain to the groundwater storage and C2VSIM showing 12.4 MAF of overdraft.” (*Id.* p. 34) Table 3.5 reveals that the CVHM model calculates an increase in storage for the Sacramento Valley of approximately 8.4 million acre-feet (“maf”), which when combined with the C2VSIM results becomes a difference of approximately 20.8 maf. (*Id.*) This is hardly a trivial matter when the Bureau is relying on a model that produces wildly different conclusions from its’ SWP partner to

AA 24

<sup>13</sup> Belmecheri, Soumaya et al., 2015. *Mid-Century evaluation of Sierra Nevada snowpack*. Correspondence. <http://www.nature.com/news/california-snowpack-lowest-in-past-500-years-1.18345>

<sup>14</sup> Chou, Heidi, 2010. *Groundwater Overdraft in California’s Central Valley: Updated CALVIN Modeling Using Recent CVHM and C2VSIM Representations*. Table 3.5, p. 35.

10

COMMENTS OF AQUALLIANCE FOR THE BUREAU OF RECLAMATION’S DEIS FOR THE  
*Coordinated Long-Term Operation of the Central Valley Project and State Water Project*  
(September 29, 2015)

1

AA 24  
continued

determine impacts to about half of the entire state (most of the CVP facilities and service areas and all of the SWP facilities and service areas, DEIS p. 1-10)

**IV. Groundwater**

The Bureau Fails to Disclose Existing Groundwater Conditions in the Sacramento Valley AA 25

The DEIS provides limited groundwater elevation data of the Sacramento Valley groundwater basin in the Groundwater Resources and Groundwater Quality chapter. (pp. 7-1 to 7-184) The DEIS erroneously concludes that, “Overall, the Sacramento Groundwater Basin is approximately balanced with respect to annual recharge and pumping demand.” (p. 7-14) Without defining “approximately balanced,” the DEIS continues by stating, “However, there are several locations showing early signs of persistent drawdown, suggesting limitations due to increased groundwater use in dry years. Locations of persistent drawdown include: Glenn County, areas near Chico in Butte County, northern Sacramento County, and portions of Yolo County.” (*Id.*) Unfortunately, the DEIS fails to elaborate through maps or text leaving the public without specific details.

AquAlliance’s tables below cover 11 years and illustrate what could have been shared with the public in the DEIS. They show maximum and average groundwater elevation decreases for Butte, Colusa, Glenn, and Tehama counties, all the counties believed to overlie the Tuscan Aquifer, at three aquifer levels in the Sacramento Valley between the fall of 2004 and 2014.<sup>15</sup> These data contradiction numbers provided in Section 7.3, the Affected Environment, that provides windows of decline that are shorter, albeit mostly incorrect without the ending caveat, “[a]nd in some areas more than 10 feet.” (p. 7-17) If the Bureau wanted to truly share significant shorter term data, they should disclose that maximum fall decreases for deep wells between 2013 and 2014 were 3.1 feet for Butte, 42.2 feet for Colusa, 26.9 feet for Glenn ,and 15.1 feet for Tehama – three counties significantly over 10 feet! (*Id.*)

County Fall '04 - '14	Deep Wells (Max decrease gwe)	Deep Wells (Avg. decrease gwe)
Butte	-12.7 (-11.4)*	-10.5 (-8.8)*
Colusa	-59.5 (-31.2)*	-59.5 (-20.4)*
Glenn	-79.7 (-60.7)*	-44.3 (-37.7)*
Tehama	-34.6 (-19.5)*	-10.9 (-6.6)*

County Fall '04 - '14	Intermediate Wells (Max decrease gwe)	Intermediate Wells (Avg. decrease gwe)
Butte	-23.0 (-21.8)*	-9.4 (-6.5)*
Colusa	-40.6 (-39.1)*	-22.6 (-16.0)*
Glenn	-57.2 (-40.2)*	-25.0 (-14.5)*
Tehama	-30.2 (-20.1)*	-12.4 (-7.9)*

<sup>15</sup> *Id.*



AA 25  
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County Fall '04 - '14	Shallow Wells (Max decrease gwe)	Shallow Wells (Avg. decrease gwe)
Butte	-17.6 (-13.3)*	-5.9 (-3.2)*
Colusa	-36.7 (-20.9)*	-7.6 (-3.8)*
Glenn	-53.5 (-44.4)*	-15.1 (-8.1)*
Tehama	-30.2 (-15.7)*	-9.5 (-6.6)*

\* 2004-2013 monitoring results are in parentheses for comparison.

Below are the results from DWR's spring monitoring for Sacramento Valley groundwater basin from 2004 to 2014. Monitoring from spring 2015 is still not available.

County Spring '04 - '14	Deep Wells (Max decrease gwe)	Deep Wells (Avg. decrease gwe)
Butte	-20.8 (-10.6)	-14.6 (-8.9)
Colusa	-26.9 (-10.5)	-12.6 (-7.1)
Glenn	-49.4 (-36.2)	-29.2 (-19.9)
Tehama	-6.1 (-4.7)	-5.3 (-4.2)

County Spring '04 - '14	Intermediate Wells (Max decrease gwe)	Intermediate Wells (Avg. decrease gwe)
Butte	-25.6 (-27.9)	-12.8 (-8.1)
Colusa	-49.9 (-24.6)	-15.4 (-7.4)
Glenn	-54.5 (-44.9)	-21.7 (-13.8)
Tehama	-16.2 (-16.5)	-7.9 (-8.8)

County Spring '04 - '14	Shallow Wells (Max decrease gwe)	Shallow Wells (Avg. decrease gwe)
Butte	-23.8 (-12.7)	-7.6 (-4.1)
Colusa	-25.3 (-11.0)	-12.9 (-3.3)
Glenn	-46.5 (-23.9)	-12.6 (-8.3)
Tehama	-38.6 (-16.9)	-10.8 (-7.4)

\* 2004-2013 monitoring results are in parentheses for comparison.

Despite the available material presented in our tables, Section 7.3.3.1.4, Lower Sacramento Valley (East of Sacramento River) concludes that, "The West Butte subbasin is located within Butte, Glenn, and Sutter counties. In the West Butte subbasin, groundwater levels declined during the 1976 to 1977 and 1987 to 1992 droughts, followed by a recovery in groundwater levels to pre-drought conditions of the early 1980s and 1990s (DWR 2004o, 2013a)." (p. 7-21) For the East Butte subbasin the DEIS asserts that, "In the southern part of Butte County, groundwater fluctuations for wells constructed in the confined and semi-confined aquifer system average 4 feet during normal years and up to 5 feet during drought years." All of this is contradicted by material compiled by Christina Buck, PhD in her February 2014 presentation on *Groundwater Conditions in Butte County*. Pages 18, 20, and 22 illustrate that wells have not recovered to pre-drought conditions, show a steady decline, and that fluctuations may be significantly more than 4 feet in normal years and 5 feet in drought years.

AA 26

The Bureau acknowledges that its partner in coordination of the Projects, DWR, hasn't provided a comprehensive assessment of groundwater overdraft in California for 35 years! (DEIS p. 7-12) Undaunted by such a dearth of information, the DEIS suggest that *assumptions* made by DWR in 2003 are a sufficient substitute for factual data today: "[o]verdraft is estimated at between 1 to 2 million acre-feet annually." (*Id.*) AquAlliance strenuously objects to the adequacy of this material that feigns as fact in the DEIS and raises the following conclusions and questions. 1) An *estimate* of a serious overdraft condition fails to provide the reviewer with accurate information. 2) If groundwater conditions are as serious or more so than the estimated 1 to 2 maf annually, this represents a devastating environmental impact that hasn't been analyzed as an impact in the DEIS. 3) No matter what the actual groundwater overdraft is in California, how do significant and continuing groundwater withdrawals by the Projects' contractors deplete current and future stream flow thereby escalating a cycle of hydrologic deficit (see section "The Bureau Fails to Analyze Significant Past, Present, and Future Streamflow Depletion" below)? Strikingly, nothing remotely touching on this critical hydrologic reality is presented or analyzed in the DEIS thereby making the document wholly deficient.

AA 27

Lastly, the DEIS continues a Bureau pattern by ignoring the importance of the Cascade Range to the hydrology of the Sacramento River and Valley, Cascade streams in this particular statement: "The hydrology of this area is dominated by numerous smaller drainages that originate in the Sierra Nevada and Coast Ranges and drain to the Sacramento River (DWR 2003a)." (p. 7-16) Please correct this.

The Bureau Has Failed to Consider the Cumulative Impact of Other Groundwater Development and Surface Water Diversions Affecting the Sacramento Valley

AA 28

See Cumulative Impact section below.

Past CVP transfers allowed groundwater substitution and appear to violate CVPIA's mandate that any transfer have no significant impact on the seller's groundwater.

AA 29

CVPIA Section 3405 (a)(1)(J) states that no transfer shall be approved unless it is determined that "such transfer will have no significant long-term adverse impacts on groundwater conditions in the transferor's service area." However, The DEIS fails to include an analysis of impacts to groundwater in the areas of origin participating in CVP and SWP water transfers. Therefore the DEIS makes no findings on impacts and proposes no mitigation to evaluate the actual effects on groundwater levels and subsequent measures to insure the long-term protection of the underlying basins. To comply with the provision of CVPIA, the Bureau will have to arrive at some level of certainty that groundwater substitution will not adversely affect the transferor's basin under current operations or the preferred alternative. Again, this must be developed and presented in a revised and recirculated DEIS.

Subsidence

AA 30

This is the only mention of subsidence in Chapter 7. "Land subsidence due to groundwater withdrawals historically occurred in the Yolo subbasin of the Sacramento Valley Groundwater Basin and Delta-Mendota and Westside subbasins of the San Joaquin Valley Groundwater Basin in the Central Valley Region; Santa Clara Valley Groundwater Basin in the San Francisco Bay

13

AA 30  
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Area Region; and the Antelope Valley and Lucerne Valley groundwater basins in the Southern California Region. Under the No Action Alternative, it is anticipated that increased groundwater withdrawals due to reductions in CVP and SWP water supplies and reduced groundwater recharge due to climate change could result in increased irreversible land subsidence in these areas.” (p. 7-117)

Even Appendix 7A just touches on subsidence that was modeled by CVHM, the model that spans a 42-year simulation period starting in water year 1962 and ends in 2003. As noted above, this eliminates the last 12 years and fails to account for current conditions and future conditions. The DEIS acknowledges another vulnerability: “The subsidence package, as implemented in the version of CVHM used for the impacts analysis, does not consider the potential reduction in the rate of subsidence that would occur as the magnitude of compaction approaches the physical thickness of the affected fine-grained interbeds. Thus, subsidence forecasts from the predictive versions of CVHM were judged to be overly conservative. Therefore, a qualitative approach was used for estimating the potential for increased land subsidence in areas of the Central Valley that have historically experienced inelastic subsidence because of the compaction of fine-grained interbeds.” (pp. 7-112 and 7A-17). However, the Impact section of Chapter 7, Groundwater Resources and Groundwater Quality, provides nothing in the way of analysis. The conclusions are:

- “As described above and summarized in Table 7.3, implementation of Alternatives 1 through 5 as compared to the No Action Alternative would result in either similar or less groundwater pumping and potential for land subsidence; and similar groundwater quality conditions. Therefore, there would be no adverse impacts to groundwater; and no mitigation measures are needed.” (p. 7-141)
- “However, implementation of No Action Alternative and Alternative 5 (in the Central Valley, San Francisco Bay Area, Central Coast, and Southern California regions) and Alternative 3 (in the San Francisco Bay Area, Central Coast, and Southern California regions) as compared to the Second Basis of Comparison would result in increased groundwater pumping and associated potential for land subsidence and poorer groundwater quality; and could contribute to cumulative impacts related to groundwater conditions as compared to the Second Basis of Comparison conditions.” (pp. 7-142 and 7-143)

How were the conclusions reached, specifically? There is subsidence occurring right now and has for decades in some areas served by the Projects. To state that the No Action Alternative, “[w]ould result in either similar or less groundwater pumping and potential for land subsidence; and similar groundwater quality conditions,” circumvents requirements of NEPA. Because impacts may be “similar” does not stop past, present or future direct and indirect impacts that require disclosure, avoidance, and/or mitigation. Even when the DEIS finds impacts (pp. 7-142 and 7-143), still there is no mitigation offered. This is another seriously deficient attempt at meeting NEPA requirements.

AA 31

The DEIS also fails to mention that DWR has a continuous global positioning system (GPS) network for periodic monitoring of changes in ground elevation. A baseline GPS survey was performed in 2004 and DWR and the Bureau conducted a second survey jointly in 2008.<sup>16</sup> Since these surveys aren’t even mentioned in the DEIS, specific information on the results of the GPS

<sup>16</sup> Department of Water Resources and United State Bureau of Reclamation, 2008, Project Report, 2008 DWR/USBR Sacramento Valley GPS Subsidence Report, September 30, 2008, 7 pp., Appendices A to F.

AA 31  
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subsidence monitoring is also lacking. The Bureau's SWP partner, DWR, presented the results of the 2004 and 2008 GPS subsidence monitoring to the Glenn County Water Advisory Committee in February 2015, which identified an area of subsidence east of the GCID wells at an average of -0.38 feet.<sup>17</sup> Also absent from the DEIS is the potential impact from land subsidence due to the Glenn Colusa Irrigation District's past, current, and planned groundwater extraction in an already stressed groundwater basin<sup>18</sup> and that there are five extensometers near GCID's existing and planned wells in Glenn County. This is demonstrated in comments submitted by AquAlliance on GCID's 10-Wells EIR.<sup>19</sup> It is the lack of disclosure like this that requires the Bureau to revise and recirculate another Draft Environmental Impact Statement.

The Bureau Failed to Analyze Impacts to Groundwater Quality

The DEIS extrapolates that many impacts could occur. For example, "Changes in groundwater quality could occur in several ways under implementation of the alternatives as compared to the No Action Alternative and Second Basis of Comparison. Reductions in groundwater levels could change groundwater flow directions, potentially causing poorer quality groundwater to migrate into areas with higher quality groundwater, or cause intrusion of poor water quality (e.g. from aquitards) as water levels decline." (p. 7-112)

AA 32

While the DEIS suggests that analysis was conducted, there are no conclusions reached beyond those that are very general in nature as with the quoted section above. "Within the Central Valley, changes in groundwater use and groundwater flow direction are analyzed using the CVHM. The model does not directly simulate changes in groundwater quality. However, in regions with existing poorer quality groundwater, changes in groundwater levels or flow directions can be used to evaluate potential impacts to groundwater quality. For example, declines in groundwater levels that result in seawater intrusion, or the migration of good quality groundwater into areas with poor quality can result in groundwater quality degradation. Further, reduction in groundwater quality could also occur due to migration or upwelling of poorer quality groundwater into areas with good quality groundwater." (p. 7-113) With such ambiguous conclusions, the Bureau quite obviously finds that none of the Alternatives including the No Action Alternative would cause a significant impact, so no mitigation is offered.

How this is remotely possible fails to pass the blush test. The CVP alone has caused massive pollution in San Joaquin Valley groundwater. You don't need a model to know that. Is it the Bureau's belief that the groundwater is already so bad that any additional groundwater degradation would be minimal? Before a call of less than significance may be made the DEIS must first provide maps and data that disclose where known groundwater contamination exists, what are the MCLs for pollutants in those locations, and what activities that are part of CVP and SWP operations could exacerbate them. This should be done for all of the Project Area.

<sup>17</sup> Ehorn, B., 2015. Letter to Glenn County Board of Supervisors, and Glenn County Water Advisory Committee, on results of 2004 to 2008 land subsidence GPS surveys performed in Glenn County, dated February 3, 2015, presented at February 10, 2015 Water Advisory Committee meeting, Willows, CA, 3 pp., 1 Figure.

<sup>18</sup> [http://www.water.ca.gov/groundwater/data\\_and\\_monitoring/northern\\_region/GroundwaterLevel/gw\\_level\\_monitoring.cfm#Well%20Depth%20Summary%20Maps](http://www.water.ca.gov/groundwater/data_and_monitoring/northern_region/GroundwaterLevel/gw_level_monitoring.cfm#Well%20Depth%20Summary%20Maps)

<sup>19</sup> AquAlliance, 2015. *Comments on the Draft Environmental Impact Report for the Glenn Colusa Irrigation District 10-Wells Project (Groundwater Supplemental Supply Project SCH# 2014092076)*. Custis Exhibit 16.

15

COMMENTS OF AQUALLIANCE FOR THE BUREAU OF RECLAMATION'S DEIS FOR THE  
*Coordinated Long-Term Operation of the Central Valley Project and State Water Project*  
(September 29, 2015)



Regarding the Sacramento Valley, all of the alternatives have the potential to degrade water quality due to the escalating involvement of groundwater substitution transfers. As we suggested above, the Bureau must provide maps and data that disclose where known groundwater contamination exists, what are the MCLs for pollutants in those areas, and what activities that are part of CVP and SWP operations could exacerbate them.

AA 32  
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The Bureau Fails to Analyze Significant Past, Present, and Future Streamflow Depletion

AA 33

All water discharged by wells is balanced by a loss of water somewhere.<sup>20</sup> The DEIS unfortunately fails to present existing conditions for the Sacramento Valley. The increasing use of groundwater has caused the loss of 1.5 maf per year from Sacramento Valley rivers and streams as suggested by C.F. Brush and colleagues and the Northern California Water Association (“NCWA”).<sup>21</sup> Kit Custis created a graphic depiction of this historic groundwater extraction and stream interaction (1920s – 2009) that illustrates groundwater pumping, groundwater change in storage, and stream accretion.<sup>22</sup> He found that stream accretion flattened in the mid to late 1990s which suggests that , “First, after depleting 1.5 MAFY from the Sacramento Valley streams, the surface waters may not be able to provide much more, at least no increase to match the pumping. Second, this may also be a consequence of the model design because the number of streams simulated was limited. Third, the model’s grid may not extend out far enough to encompass all of the streams that contribute to groundwater recharge.” (*Id.* p. 35) This cries out for additional analysis that the Projects should fund or tackle.

Custis goes on to state, that “Accounting for the transfer of groundwater between regions is critical for understanding the impacts of pumping in one region or area on the adjacent regions. The sources of water backfilling a groundwater depression don’t all have to come from surface waters, ie., stream depletion, precipitation, deep percolation, and artificial recharge. Some of that “recharge” can come from adjacent aquifers by horizontal and vertical flow.” (*Id.* p. 33) The DEIS fails to account for any of the information provided here or by Brush, Custis, or NCWA. Without this context, the DEIS improperly defeats its own purpose under NEPA to fully disclose the setting as a baseline for evaluating water supply and groundwater impacts of the alternatives and recommending mitigation measures.

i. The Bureau Fails to Adequately Assess Economic Costs

The solitary mention of streamflow depletion is presented in Appendix 19A that discusses the *California Water Economics Spreadsheet Tool (CWEST) Documentation* and states that, “Additional costs associated with groundwater use include lower groundwater tables, subsidence, streamflow depletion, depreciation, and well replacement that should be included,” as well as costs to treat groundwater that may become contaminated. (p. 19A-20) However, the need for these additional costs are only estimated since the Bureau claims that, “No consistent source of

AA 34

<sup>20</sup> Theis, C.V. 1940. The source of water derived from wells—Essential factors controlling the response of an aquifer to development. *Civil Engineering* 10: 277–280.

<sup>21</sup> Custis, Kit 2014. Comments and Recommendations prepared for AquAlliance on U.S. Bureau of Reclamation and San Luis & Delta Mendota Water Authority Long-Term Water Transfer Draft EIS/EIR. pp. 33-34.

<sup>22</sup> Custis, Kit 2014. Exhibit 10.7 prepared for AquAlliance on U.S. Bureau of Reclamation and San Luis & Delta Mendota Water Authority Long-Term Water Transfer Draft EIS/EIR.

16

information is available to assess these other costs...” (*Id.*) This conclusion is indefensible without disclosure why such information isn’t found in the public domain.

AA 34  
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The information necessary to analyze impact/cost most likely exists in academic literature, government reports, and reports by industry and interest groups. In the event that economic analysis isn’t able to exactly quantify dollar costs per quantity of groundwater use, it would provide a likely range of impacts, and be able to talk about the degree of uncertainty in the resulting estimate. Unfortunately, the Bureau’s response was to arbitrarily increase costs by 10 percent in the DEIS, which lacks foundation. How was 10 percent selected, what factors were considered, and what information did they review? If a “consistent source” isn’t available, all relevant information should have been considered and reviewed to reach an impact/cost from available information.

Municipal and Industrial Groundwater Impacts

AA 35

The DEIS presents that, “It is recognized that municipal and industrial pumping in urban areas in the Central Valley could cause localized impacts to groundwater levels from increased drawdown. The increased withdrawals could also impact groundwater quality due to the migration of existing plumes, as described in the Affected Environment section.” (p. 7-11) Despite this acknowledgement, the DEIS again takes the position that there are no significant impacts and offers no mitigation measures.

In summary for Chapter 7, *Groundwater and Groundwater Quality*, the DEIS failed to find any impacts of significance and therefore produced no mitigation measures. Sadly, the Bureau improperly defeats its own purpose under NEPA to fully disclose the setting as a baseline for evaluating all the alternative’s water supply and groundwater impacts and recommending mitigation measures.

**V. The EIS/EIR Fails to Adequately Analyze Numerous Cumulative Impacts.**

The Ninth Circuit Court makes clear that NEPA mandates “a useful analysis of the cumulative impacts of past, present and future projects.” *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 810 (9th Cir. 1999). “Detail is required in describing the cumulative effects of a proposed action with other proposed actions.” *Id.*

AA 36

In assessing the significance of a project’s impact, the Bureau must consider “[c]umulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.” 40 C.F.R. §1508.25(a)(2). A “cumulative impact” includes “the impact on the environment which results from the incremental impact of the action when added to *other past, present and reasonably foreseeable future actions* regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” *Id.* §1508.7. The regulations warn that “[s]ignificance cannot be avoided by terming an action temporary or by breaking it down into small component parts.” *Id.* §1508.27(b)(7).

An environmental impact statement should also consider “[c]onnected actions.” *Id.* §1508.25(a)(1). Actions are connected where they “[a]re interdependent parts of a larger action and depend on the larger action for their justification.” *Id.* §1508.25(a)(1)(iii). Further, an

17

COMMENTS OF AQUALLIANCE FOR THE BUREAU OF RECLAMATION’S DEIS FOR THE  
*Coordinated Long-Term Operation of the Central Valley Project and State Water Project*  
(September 29, 2015)

environmental impact statement should consider “[s]imilar actions, which when viewed together with other *reasonably foreseeable or proposed agency actions*, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography.” *Id.* §1508.25(a)(3) (emphasis added). AA 36 continued

As discussed, below, and in the 2014 expert reports submitted by *Custis, EcoNorthwest, Cannon, and Mish* on behalf of AquAlliance for the 10-Year Water Transfer Program (aka Long-Term Transfer Program), the DEIS fails to comport with these standards for cumulative impacts upon surface and groundwater supplies, vegetation, and biological resources; and, the baseline and modeling data relied upon by the DEIS that does not account for related projects in the last 12 years.

Recent Past Transfers.

Because the groundwater modeling effort didn’t include the most recent 11 years record (1970-2003), it appears to have missed simulating the most recent periods of groundwater substitution transfer pumping and other groundwater impacting events, such as recent changes in groundwater elevations and groundwater storage (DWR, 2014b), and the reduced recharge due to the recent periods of drought. Without taking the hydrologic conditions during the recent 11 years into account, the results of the CVHM model simulation may not accurately depict the current conditions or predict the effects from the proposed groundwater substitution transfer pumping during the next 10 years.

- In 2009, the Bureau approved a 1 year water transfer program under which a number of transfers were made. Regarding NEPA, the Bureau issued a FONSI based on an EA.
- In 2010, the Bureau approved a 2 year water transfer program (for 2010 and 2011). No actual transfers were made under this approval. Regarding NEPA, the Bureau again issued a FONSI based on an EA.
- The Bureau planned 2012 water transfers of 76,000 AF of CVP water all through groundwater substitution.<sup>23</sup>
- In 2013, the Bureau approved a 1 year water transfer program, again issuing a FONSI based on an EA. The EA incorporated by reference the environmental analysis in the 2010-2011 EA.
- The Bureau and SLDMWA’s 2014 Water Transfer Program proposed transferring up to 91,313 AF under current hydrologic conditions and up to 195,126 under improved conditions. This was straight forward, however, when attempting to determine how much water may come from fallowing or groundwater substitution during two different time periods, April-June and July-September, the reader was left to guess.<sup>24</sup>

<sup>23</sup> USBR 2012. Memo to the Deputy Assistant Supervisor, Endangered Species Division, Fish and Wildlife Office, Sacramento, California regarding Section 7 Consultation.

<sup>24</sup> The 2014 Water Transfer Program’s EA/MND was deficient in presenting accurate transfer numbers and types of transfers. The numbers in the “totals” row of Table 2-2 presumably should add up to 91,313. Instead, they add up to 110, 789. The numbers in the “totals” row of Table 2-3 presumably should add up to 195,126. Instead, they add up to 249,997. Both Tables 2-2 and 2-3 have a footnote stating: “These totals cannot be added together. Agencies could make water available through groundwater substitution, cropland idling, or a combination of the two; however, they

These closely related projects impact the same resources, are not accounted for in the environmental baseline, and must be considered as cumulative impacts.

AA 36  
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Yuba Accord

The relationship between the Projects and the Lower Yuba River Accord is not found in the DEIS, but is illuminated in a 2013 Environmental Assessment. “The Lower Yuba River Accord (Yuba Accord) provides supplemental dry year water supplies to state and Federal water contractors under a Water Purchase Agreement between the Yuba County Water Agency and the California Department of Water Resources (DWR). Subsequent to the execution of the Yuba Accord Water Purchase Agreement, DWR and The San Luis & Delta- Mendota Water Authority (Authority) entered into an agreement for the supply and conveyance of Yuba Accord water, to benefit nine of the Authority’s member districts (Member Districts) that are SOD [south of Delta] CVP water service contractors.”<sup>25</sup>

AA 37

In a Fact Sheet produced by the Bureau, it provides some numerical context and more of DWR’s involvement by stating, “Under the Lower Yuba River Accord, up to 70,000 acre-feet can be purchased by SLDMWA members annually from DWR. This water must be conveyed through the federal and/or state pumping plants in coordination with Reclamation and DWR. Because of conveyance losses, the amount of Yuba Accord water delivered to SLDMWA members is reduced by approximately 25 percent to approximately 52,500 acre-feet. Although Reclamation is not a signatory to the Yuba Accord, water conveyed to CVP contractors is treated as if it were Project water.”<sup>26</sup> However, the Yuba County Water Agency (“YCWA”) may transfer up to 200,000 under Corrected Order WR 2008-0014 for Long-Term Transfer and, “In any year, up to 120,000 af of the potential 200,000 af transfer total may consist of groundwater substitution. (YCWA-1, Appendix B, p. B-97).”<sup>27</sup>

Potential cumulative impacts from the Project and the YCWA Long-Term Transfer Program from 2008 - 2025 are not disclosed or analyzed in the DEIS. Moreover, the *2015-2024 Water Transfer Program* could transfer up to 600,000 AF per year through the same period that the YCWA Long-Term Transfers are potentially sending 200,000 AF into and south of the Delta. How these two projects operate simultaneously could have a very significant impact on the environment and economy of the Feather River and Yuba River’s watersheds and counties as well as the Delta. The involvement of Browns Valley Irrigation District and Cordua Irrigation District in both long-term programs must also be considered. This must be analyzed and presented to the public in a revised DEIS.

Also not available in the DEIS is disclosure of any issues associated with the YCWA transfers that have usually been touted as a model of success. The YCWA transfers have encountered troubling

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will not make the full quantity available through both methods. Table 2-1 reflects the total upper limit for each agency.”

<sup>25</sup> Bureau of Reclamation, 2013. *Storage, Conveyance, or Exchange of Yuba Accord Water in Federal Facilities for South of Delta Central Valley Project Contractors.*

<sup>26</sup> Bureau of Reclamation, 2013. *Central Valley Project (CVP) Water Transfer Program Fact Sheet.*

<sup>27</sup> State Water Resources Control Board, 2008. ORDER WR 2008 - 0025



trends for over a decade that, according to the draft Environmental Water Account (“EWA”) EIS/EIR, are mitigated by deepening domestic wells (2003 p. 6-81). While digging deeper wells is at least a response to an impact, it hardly serves as a proactive measure to avoid impacts. Additional information finds that it may take 3-4 years to recover from groundwater substitution in the south sub-basin<sup>28</sup> although YCWA’s own analysis fails to determine how much river water is sacrificed to achieve the multi-year recharge rate. None of this is found in the EIS/EIR. What is found in the EIS/EIR is that even the inadequate SACFEM2013 modeling reveals that it could take more than six years in the Cordua ID area to recover from multi-year transfer events, although recovery is not defined (pp. 3.3-69 to 3.3-70). This is a very significant impact that isn’t addressed individually or cumulatively.

AA 37  
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BDCP

The DEIS acknowledges the Bay Delta Conservation Plan (“BDCP”) in its Cumulative Impacts list. However we believe that DEIS fails to consider the potential cumulative impacts if the Twin Tunnels are built as planned with the capacity to take 15,000 cubic feet per second (“cfs”) from the Sacramento River. They will have the capacity to drain almost two-thirds of the Sacramento River’s average annual flow of 23,490 cfs at Freeport<sup>29</sup> (north of the planned Twin Tunnels). As proposed, the Twin Tunnels will also increase water transfers when the infrastructure for the Project has capacity. This will occur during dry years when SWP contractor allocations drop to 50 percent of Table A amounts or below or when CVP agricultural allocations are 40 percent or below, or when both projects’ allocations are at or below these levels (BDCP DEIS/EIR Chapter 5, 2013). With BDCP, North to South water transfers would be in demand and feasible.

AA 38

Communication regarding assurances for BDCP indicates that the purchase of approximately 1.3 million acre-feet of water is being planned as a mechanism to move water into the Delta to make up for flows that would be removed from the Sacramento River by the BDCP tunnels.<sup>30</sup> There is only one place that this water can come from: the Sacramento Valley’s watersheds. It is well known that the San Joaquin River is so depleted that it will not have any capacity to contribute meaningfully to Delta flows. Additionally, the San Joaquin River doesn’t flow past the proposed north Delta diversions and neither does the Mokelumne River.

The DEIS also fails to reveal many more programs, plans and projects to develop water transfers in the Sacramento Valley, to develop a “conjunctive” system for the region, and to place water districts in a position to integrate the groundwater into the state water supply. BDCP is one of those plans that the federal agencies, together with DWR, SLDMWA, water districts, and others have been pursuing and developing for many years.

i. Biggs-West Gridley

The *Biggs-West Gridley Water District Gray Lodge Wildlife Area Water Supply* Project, a Bureau project, is not mentioned anywhere in the Vegetation and Wildlife or Cumulative Impacts

AA 39

<sup>28</sup> 2012. *The Yuba Accord, GW Substitutions and the Yuba Basin*. Presentation to the Accord Technical Committee. (pp. 21, 22).

<sup>29</sup> USGS 2009. <http://wdr.water.usgs.gov/wy2009/pdfs/11447650.2009.pdf> Exhibit KK)

<sup>30</sup> Belin, Lety, 2013. E-mail regarding Summary of Assurances. February 25 (Department of Interior). (Exhibit LL)

20

COMMENTS OF AQUALLIANCE FOR THE BUREAU OF RECLAMATION’S DEIS FOR THE  
*Coordinated Long-Term Operation of the Central Valley Project and State Water Project*  
(September 29, 2015)

sections.<sup>31</sup> This water supply project is located in southern Butte County where Western Canal WD, Richvale ID, Biggs-West Gridley WD, and Butte Water District actively sell water on a regular basis, yet impacts to GGS from this project are not disclosed. This is a serious omission that must be remedied in a recirculated draft DEIS.

AA 39  
continued

ii. Other Projects

a) Court settlement discussions between the Bureau and Westlands Water District over provisions of drainage service. Case # CV-F-88-634-LJO/DLB will further strain the already over allocated Central Valley Project with the following conditions:

AA 40

- A permanent CVP contract for 890,000 acre-feet of water a year exempt from acreage limitations.
- Minimal land retirement consisting of 100,000 acres; the amount of land Westlands claims it has already retired (115,000 acres) will be credited to this final figure. Worse, the Obama administration has stated it will be satisfied with 100,000 acres of “permanent” land retirement.
- Forgiveness of nearly \$400 million owed by Westlands to the federal government for capital repayment of Central Valley Project debt.

b) Five-Year Warren Act Contracts for Conveyance of Groundwater in the Tehama-Colusa and Coming Canals – Contract Years 2013 through 2017 (March 1, 2013, through February 28, 2018).

Additional projects with cumulative impacts upon groundwater and surface water resources affected by the Project:

- The DWR Dry Year Purchase Agreement for Yuba County Water Agency water transfers from 2015-2025 to SLDMWA.<sup>32</sup>
- GCID’s *Stony Creek Fan Aquifer Performance Testing Plan* to install seven production wells in 2009 to extract 26,530 AF of groundwater as an experiment that was subject to litigation due to GCID’s use of CEQAs exemption for research.
- Installation of numerous production wells by the Sellers in this Project many with the use of public funds such as Butte Water District,<sup>33</sup> GCID, Anderson Cottonwood Irrigation District,<sup>34</sup> and Yuba County Water Authority<sup>35</sup> among others.

<sup>31</sup> [http://www.usbr.gov/mp/nepa/nepa\\_projdetails.cfm?Project\\_ID=15381](http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=15381)

<sup>32</sup> SLDMWA Resolution # 2014 386  
[http://www.sldmwa.org/OHTDocs/pdf\\_documents/Meetings/Board/Prepacket/2014\\_1106\\_Board\\_PrePacket.pdf](http://www.sldmwa.org/OHTDocs/pdf_documents/Meetings/Board/Prepacket/2014_1106_Board_PrePacket.pdf)

<sup>33</sup> Prop 13. Ground water storage program: 2003-2004 Develop two production wells and a monitoring program to track changes in ground.

<sup>34</sup> “The ACID Groundwater Production Element Project includes the installation of two groundwater wells to supplement existing district surface water and groundwater supplies.”

[http://www.usbr.gov/mp/nepa/nepa\\_projdetails.cfm?Project\\_ID=8081](http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=8081)

<sup>35</sup> Prop 13. Ground water storage program 2000-2001: Install eight wells in the Yuba-South Basin to improve water supply reliability for in-basin needs and provide greater flexibility in the operation of the surface water management facilities. \$1,500,00;

- GCID’s 10 Wells Project proposes to install five new production wells and continue operating five additional production wells during dry and critically dry years for 8.5 months from approximately February 15-Marh 15 and April 1-November 15. The annual, maximum, cumulative total pumping is 28,500 af and is more water than the annual use of the Chico district of California Water Service Company that serves over 100,000 people.<sup>36</sup>

AA 40  
continued

**VI. Procedural Issues**

AA 41

- Will there be a California Environmental Quality Act (“CEQA”) equivalent document for the Project that is produced and circulated for public comment?
- When will mitigation measures be circulated for public review and comment? “Consideration for Mitigation Measures” are not mitigation measures.
- The public is prevented from knowing what the preferred alternative is because, “This Draft EIS does not recommend a preferred alternative. A preferred alternative will be included in the Final EIS.” (p. ES-5) Letting the public know in a final document is not sufficient for a project of this magnitude.
- The public is unnecessarily confused by the creation of a Second Basis of Comparison that, “[i]s not a true alternative, in accordance with NEPA guidelines, Reclamation could not select Second Basis of Comparison as a preferred alternative. Therefore, Alternative 1 was defined as being identical to the Second Basis of Comparison, as defined in Section 3.3.2.” (p. 3-31)

AA 42

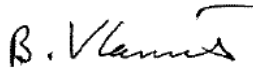
AA 43

AA 44

As demonstrated in our comments, the DEIS is seriously deficient and should be withdrawn. AquAlliance hopes that the Bureau and DWR may better understand the serious harm the Projects have wrought on Sacramento Valley, San Joaquin Valley, and Delta communities, groundwater dependent farmers, and the environment over many decades. AquAlliance requests that the Bureau regroup and prepare an adequate DEIS with a new suite of alternatives that are less damaging and potentially restorative.

AA 45

Sincerely,



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<sup>36</sup> California Water Service Company 2010 Urban Water Management Plan Chico-Hamilton City District, p. 32.

1 **1D.1.1.1 Attachments to Comments from AquAlliance**

2 Attachments to the AquAlliance letter are included in Attachment 1D.1 located at  
3 the end of Appendix 1D.

4 **1D.1.1.2 Responses to Comments from AquAlliance**

5 **AA 1:** Comment noted.

6 **AA 2:** Comment noted. The EIS analysis adequately addresses the effects of the  
7 coordinated long-term operation of the CVP and SWP.

8 **AA 3:** The letters listed in this comment were submitted to Reclamation as  
9 comments on another project, the Long-Term Transfers EIR/EIS. Responses to  
10 those comments can be found in the Final Long-term Transfers EIR/EIS posted on  
11 the Reclamation website at [www.usbr.gov/mp/nepa/index.cfm](http://www.usbr.gov/mp/nepa/index.cfm).

12 **AA 4:** The letters listed in this comment were submitted to Reclamation as  
13 comments on other projects, not the EIS for the coordinated long-term operation  
14 of the CVP and SWP. Responses to those comments on projects that have  
15 completed the NEPA process are included in the final version of the NEPA  
16 documents posted on the Reclamation website at  
17 <http://www.usbr.gov/mp/nepa/index.cfm>.

18 Responses to comments on projects that are still undergoing evaluation will be  
19 posted on the Reclamation website at [www.usbr.gov/mp/nepa/index.cfm](http://www.usbr.gov/mp/nepa/index.cfm) in the  
20 final NEPA documents.

21 **AA 5:** Please see responses to Comments AA 6 through AA 40.

22 **AA 6:** The purpose of the action is presented in Chapter 2, Purpose and Need, of  
23 the EIS, and considers the purposes for which the CVP was authorized, as  
24 amended by CVPIA, as well as the regulatory limitations on CVP operations,  
25 including applicable state and federal laws and water rights.

26 The need for the action also is presented in Chapter 2, and in accordance with the  
27 District Court order is to evaluate potential modifications to the continued long-  
28 term operation of the CVP, in coordination with the operation of the SWP, related  
29 to Reclamation's acceptance and implementation of the Reasonable and Prudent  
30 Alternatives (RPAs) included in the Biological Opinions (BOs) issued in 2008  
31 and 2009 by the U.S. Fish and Wildlife Service (USFWS) and the National  
32 Marine Fisheries Service (NMFS), respectively, pursuant to the Federal  
33 Endangered Species Act of 1973 (ESA) as amended (United States Code [U.S.C.]  
34 1531 et. seq.).

35 **AA 7:** The CVP and SWP operate within the federal and state regulatory  
36 requirements, as described in Appendix 3A, No Action Alternative: Central  
37 Valley Project and State Water Project Operations. More details have been  
38 included in Section 5.3.3 of Chapter 5, Surface Water Resources and Water  
39 Supplies, and Section 9.3.8 of Chapter 9, Fish and Aquatic Resources, in the Final  
40 EIS to describe historical responses by CVP and SWP to these drought conditions  
41 and changes in fisheries resources.



1 **AA 8:** The *Westlands v. United States* Settlement in the *Firebaugh Canal Co v.*  
2 *United States* was signed on September 15, 2015. This settlement agreement  
3 requires congressional authorization prior to implementation. Therefore, this  
4 project has been included in the cumulative effects analysis in the Final EIS.

5 **AA 9:** The CVP and SWP operations prioritize meeting federal and state  
6 regulatory requirements and deliveries to senior water rights holders. The  
7 modeling analyses presented in the EIS include these prioritizations for long-term  
8 operation of the CVP and SWP using an 82-year hydrology analyzed with the  
9 CalSim II model. This analytical approach results in low water storage elevations  
10 in CVP and SWP reservoirs and low deliveries to CVP agricultural water service  
11 contractors located to the south of the Delta in critical dry periods. The modeled  
12 operations do not include changes in SWRCB requirements intended to reduce the  
13 effects of extreme flood or drought events, such as the recent changes in CVP and  
14 SWP drought operations.

15 Droughts have occurred throughout California's history, and are constantly  
16 shaping and innovating the ways in which Reclamation and DWR balance both  
17 public health standards and urban and agricultural water demands while  
18 protecting the Delta ecosystem and its inhabitants. The most notable droughts in  
19 recent history are the droughts that occurred in 1976-77, 1987-92, and the  
20 ongoing drought. More details have been included in Section 5.3.3 of Chapter 5,  
21 Surface Water Resources and Water Supplies, and Section 9.3.8 of Chapter 9,  
22 Fish and Aquatic Resources, in the Final EIS to describe historical responses by  
23 CVP and SWP to these drought conditions, as described in the response to  
24 Comment AA 7.

25 **AA 10:** The interaction of streamflow and groundwater is included in the  
26 groundwater analytical tool, CVHM, as described in Appendix 7A, Groundwater  
27 Model Documentation.

28 **AA 11:** The historic reservoir storages and stream flows presented in Figures 5.7  
29 through 5.45 in the EIS were generally presented for the period of time from 2001  
30 through 2012. This time frame represents conditions under the operations of the  
31 CVP and SWP since full implementation of operations in accordance with State  
32 Water Resources Control Board (SWRCB) Decision 1641 (D-1641) and  
33 biological opinions adopted by the USFWS and NMFS in the early 2000s.  
34 Historic stream flow data and locations of the gauges, such as Douglas City, can  
35 be found on the CDEC website at [www.cdec.water.ca.gov](http://www.cdec.water.ca.gov).

36 **AA 12:** The EIS does include references to the efforts being implemented to meet  
37 the statewide goals for reduction of municipal per capita water use by 20 percent by  
38 2020 and optimization of agricultural water use efficiency. The EIS analysis is  
39 conducted at the Year 2030, and it is assumed that the legislative requirements of  
40 water conservation by municipal and agricultural water users have been achieved in  
41 the No Action Alternative, Second Basis of Comparison, and Alternatives 1  
42 through 5.

1 **AA 13:** Many of the projects referenced in this comment are related to short-term  
2 water transfer programs. It is acknowledged in the No Action Alternative, Second  
3 Basis of Comparison, and Alternatives 1 through 5 that these annual water transfer  
4 programs are anticipated to continue in the Year 2030. The Long-Term North-to-  
5 South Water Transfer Program is acknowledged in this EIS to provide for water  
6 transfers from 2015 through 2024. As with the short-term water transfer programs, it  
7 is anticipated that similar programs would continue in the Year 2030 in the No  
8 Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5.

9 The maximum amount of water transfers across the Delta referenced in this comment  
10 were defined by Reclamation in the *Biological Assessment on the Continued*  
11 *Long-Term Operations of the Central Valley Project and the State Water Project*  
12 August 2008 document. These limitations were included in the 2008 USFWS BO  
13 and 2009 NMFS BO as the Proposed Action from the Biological Assessment.  
14 The effect of moving total amounts of water (including transferred water) across the  
15 Delta through CVP and SWP facilities is conducted in accordance with the federal  
16 and state requirements, as in included in the CalSim II model.

17 **AA 14:** The project referenced in this comment was not completed by Glenn-  
18 Colusa Irrigation District; and therefore, it was not included in the No Action  
19 Alternative, the Second Basis of Comparison, or Alternatives 1 through 5.

20 **AA 15:** The coordinated long-term operation of the CVP and SWP assumes  
21 continued use of water rights by Reclamation, DWR, and all other water users.  
22 The EIS analysis is conducted with projected conditions at Year 2030 with  
23 climate change and sea level rise assumptions. The climate change assumptions  
24 include a reduction in snow pack, warmer air temperatures, and larger rainfall  
25 events than in recent history. As described in Chapter 5, Surface Water  
26 Resources and Water Supplies, and Chapter 7, Groundwater Resources and  
27 Groundwater Quality, this could lead to less carryover storage in all reservoirs in  
28 September and less natural groundwater recharge. This could affect the amount  
29 of water available for all water rights holders.

30 The water rights system in California was developed with consideration of a  
31 highly variable hydrology. The water rights system is based upon a priority of  
32 diversion rates (e.g., maximum daily rates or instantaneous diversion rates),  
33 limited to beneficial uses and not wasteful uses, instead of a priority of volumes.  
34 The maximum daily or instantaneous diversion rates are frequently expressed as  
35 maximum monthly or annual volumes. However, the volume of water that can be  
36 diverted is determined through the prioritization of water rights and minimum  
37 downstream flows required for other water users and environmental  
38 considerations as regulated by federal and state agencies. Many of the water  
39 rights are for non-consumptive use (such as for power generation). Many  
40 consumptive use water rights holders also return a portion of their diversions to  
41 the river as agricultural return flows and wastewater effluent. These return flows  
42 are also available for downstream uses. The CalSim II model used in this EIS  
43 simulates this complex system. The model prioritizes deliveries and associated  
44 return flows to water rights holders and federal and state stream flow and water  
45 quality requirements prior to determining the available water supplies for CVP

1 and SWP water contractors. Listings of water rights in California can be found on  
2 the SWRCB website at [www.swrcb.ca.gov/waterrights](http://www.swrcb.ca.gov/waterrights).

3 **AA 16:** The EIS describes that under the No Action Alternative, benefits from  
4 implementation of the 2008 USFWS BO and 2009 NMFS BO RPA actions are  
5 anticipated to improve aquatic resources conditions. However, it must be  
6 recognized that some of the RPA actions are either under construction, or recently  
7 completed construction (e.g., Battle Creek restoration and Red Bluff Pumping  
8 Plant, respectively). Other RPA actions are still under development (e.g., fish  
9 passage around CVP reservoirs). Therefore, conditions described in the Affected  
10 Environment section of Chapter 9 do not represent the anticipated conditions that  
11 would occur under the No Action Alternative by the Year 2030 with full  
12 implementation of the RPA actions.

13 **AA 17:** The comment is consistent with the information presented in the EIS  
14 related to Alternatives 1 through 5.

15 **AA 18:** The analysis in the EIS compares conditions under Alternatives 1  
16 through 5 with the No Action Alternative to identify beneficial and adverse  
17 impacts for a broad range of physical, environmental, and human resources. The  
18 NEPA analysis does not determine if the alternatives would change the findings  
19 of the biological opinions in the determination of the likelihood of the alternatives  
20 to cause jeopardy to the continued existence of the species, or destroy or  
21 adversely affect their critical habitat.

22 **AA 19:** CVHM was used to support the EIS groundwater analysis as is it was  
23 deemed to have the greatest resolution (vertically and spatially) and more robust  
24 calibration than any of the other currently available Central-Valley wide models.  
25 While it is true that the CVHM model simulation period ends at the end of 2003,  
26 none of the Central-Valley wide models that simulate groundwater conditions for  
27 more recent periods post-2003 were available or deemed adequate for the analysis  
28 at the time of preparation of the EIS. The 1961 through 2003 time period  
29 simulated by CVHM includes varying hydrologic conditions that range from  
30 extreme dry periods (such as 1987-92) and extreme wet periods (such as 1983).  
31 The model includes assumptions for climate and typical hydrologic conditions at  
32 2030 that alternate between dry and wet conditions to capture the range of  
33 possible impacts.

34 The CalSim II model output used in the CVHM model includes river flows and  
35 CVP and SWP water deliveries. It is recognized that the CalSim II model does  
36 include assumptions for groundwater use in the Sacramento Valley.

37 **AA 20:** Models are used in the EIS analysis to evaluate the differences of long-  
38 term operations under the various alternatives as compared to the No Action  
39 Alternative and Second Basis of Comparison. Historical conditions cannot be  
40 used to evaluate expected results under varying operational alternatives since  
41 operational constraints have changed continuously since the project was first  
42 developed. Furthermore, the EIS analysis is conducted to analyze conditions in  
43 2030 which will include changes from recent conditions in land use, hydrology,  
44 and water quality due to future development, climate change, and sea level rise.

1 Sole use of historic observations would not be appropriate for evaluating  
2 operations under these future conditions. However, the historic observations were  
3 used in development of the analytical tools that are used in this EIS.

4 **AA 21:** Additional details have been included in Appendix 5A, Section A,  
5 CalSim II and DSM2 Modeling, to provide more clarity about the climate change  
6 assumptions used in CalSim II, CVHM, and all related models. As described in  
7 Appendix 5A, Section A, the climate change models used in this EIS indicate that  
8 the future conditions are anticipated to result in less snow pack, warmer air  
9 temperatures, and more intense rainfall events. These conditions would result in a  
10 reduction of water available for CVP and SWP contractors as compared to  
11 historical conditions, as discussed in Section 5.4.2 of Chapter 5, Surface Water  
12 Resources and Water Supplies. These conditions are included in the No Action  
13 Alternative, Second Basis of Comparison, and Alternatives 1 through 5.

14 **AA 22:** Please response to Comment AA 18.

15 **AA 23:** As discussed in this comment, the analytical tools do have limitations and  
16 uncertainties, as discussed in the appendices of the EIS. The acknowledgement of  
17 these limitations and uncertainties is why all model results in all EIS chapters  
18 must be used in a comparative manner to determine the incremental differences  
19 between Alternatives 1 through 5 as compared to the No Action Alternative, and  
20 between the No Action Alternative and Alternatives 1 through 5 as compared to  
21 the Second Basis of Comparison. The model results are not used to project  
22 specific physical, biological, or human resource values. By using the models in a  
23 comparative manner, the results of the analysis are less affected by the limitations  
24 and uncertainties. The quantitative model results are used in conjunction with the  
25 qualitative analyses presented in this EIS to consider the comparative results of  
26 the entire analyses.

27 **AA 24:** Central Valley groundwater models are complex due to the extremely  
28 differing hydrogeology in the watershed that provides groundwater recharge and  
29 the wide range of depletions that occur through wells, streamflow depletion, and  
30 losses to deep aquifers. As stated in the 2010 Masters Thesis (referred to in the  
31 comment), “Actual groundwater storage capacity in California is unknown and is  
32 not accurately measureable at this time.”

33 The two Central Valley wide groundwater flow models, CVHM and C2VSim,  
34 differ in their structure, simulation period, and input assumptions. CVHM was  
35 used for the EIS groundwater impact analysis because it provides higher  
36 resolution (both in horizontal grid spacing and vertical layering – 10 layers versus  
37 3 layers) and has undergone a more robust calibration.

38 A peer review of these models was led by CWEMF (California Water  
39 Environment Modeling Forum) and developed by renowned groundwater  
40 scientists in 2013. The findings indicate that both C2VSim and CVHM are valid  
41 models for the evaluation of water resources planning and impact studies in the  
42 Central Valley. Therefore, while differences in model forecast exist, CVHM is a  
43 more robust tool to support the EIS impact analysis.



- 1 **AA 25:** The EIS cites different groundwater drawdown magnitudes than  
2 mentioned in the comment, as it used the data presented in the 2014 DWR  
3 Drought Update report (as cited in Chapter 9, Groundwater Resources and  
4 Groundwater Quality in the EIS).
- 5 The differences between the reported groundwater level trends the EIS and the  
6 Butte County groundwater levels included in the comment are due to the  
7 differences in groundwater data references cited. It is recognized that local and  
8 regional data are collected and reported for many locations throughout the state.  
9 However, because the EIS study area included a large portion of the state, federal  
10 and state data references were used in the EIS to provide a uniform dataset for the  
11 entire analysis.
- 12 **AA 26:** The actual magnitude of overdraft in the Central Valley groundwater  
13 basin is known at specific locations with groundwater elevations; however,  
14 regional overdraft values are only estimates based upon groundwater models and  
15 regional observations. DWR is the state agency tasked with collecting state-wide  
16 groundwater elevation data and therefore is a reasonable source for estimates of  
17 the type mentioned in the comment. The EIS impact analysis is based upon a  
18 comparative methodology to inform Reclamation and others about the differences  
19 between Alternatives 1 through 5 as compared to the No Action Alternative, and  
20 between the No Action Alternative and Alternatives 1 through 5 as compared to  
21 the Second Basis of Comparison. The EIS provides information related to the  
22 effects of the alternatives as compared to the No Action Alternative and the  
23 Second Basis of Comparison on groundwater in the Central Valley.
- 24 **AA 27:** The EIS referenced the Sierra Nevada as a surrogate for all eastside  
25 streams. The text on page 7-16 of the Draft EIS should have stated the “Sierra  
26 Nevada and Cascade Ranges”, and will be modified in the Final EIS.
- 27 **AA 28:** Please see responses to Comment AA 36 through AA 40.
- 28 **AA 29:** The requirements for water transfers, including transfers with provisions  
29 for groundwater substitution, that involve either CVP and SWP water contract  
30 water supplies or facilities are described in Section 5.4.2.1.3 of Chapter 5, Surface  
31 Water Resources and Water Supplies. It is assumed that water transfers occurring  
32 under the No Action Alternative, Second Basis of Comparison, and Alternatives 1  
33 through 5 would meet the requirements listed in CVPIA and any other  
34 requirements. Specific water transfers for the Year 2030 have not been identified  
35 at this time except for continued water transfers under the Lower Yuba River  
36 Accord. Therefore, quantitative analyses presented in the EIS only included  
37 water transfers under the Lower Yuba River Accord, as described in Appendix  
38 3A, No Action Alternative: Central Valley Project and State Water Project  
39 Operations. Qualitative analyses for conditions that could occur for other water  
40 transfers by 2030 are presented in the EIS.
- 41 **AA 30:** Please see responses to Comments AA19 and AA24 for the discussion on  
42 the adequacy of using CVHM for the groundwater impacts analysis.

1 The first bullet in this comment states that Alternatives 1 through 5 as compared  
2 to the No Action Alternative would result in similar or less groundwater pumping.  
3 This is based on modeling results. If implementation of these alternatives results  
4 in similar or less pumping than under No Action Alternative, there is no potential  
5 for additional drawdown-induced subsidence to occur, and further analysis is  
6 not required.

7 Conclusions regarding subsidence impacts are reached by comparing groundwater  
8 level changes between the No Action Alternative, Second Basis of Comparison,  
9 and Alternatives 1 through 5. If groundwater levels decline, subsidence impacts  
10 are more likely to occur, due to the potential for compaction of subsurface  
11 materials with the loss of groundwater in storage. However, if groundwater  
12 levels are similar or slightly decline, the potential for land subsidence to occur  
13 is minimal.

14 **AA 31:** Major subsidence in the Sacramento Valley, such as up to 4 feet in the  
15 Yolo basin area, is discussed in Section 7.3.3 of Chapter 7, Groundwater  
16 Resources and Groundwater Quality, of the EIS. The text acknowledges  
17 overdraft conditions that could result in subsidence do occur in other portions of  
18 the Sacramento Valley, including the West Butte Subbasin in Butte, Glenn, and  
19 Sutter Counties.

20 **AA 32:** The groundwater water quality analysis described in the EIS consists of  
21 comparing the groundwater levels and flow directions under the alternatives as  
22 compared to the No Action Alternative and Second Basis of Comparison. Any  
23 change in groundwater levels or flow directions due to implementation of the  
24 alternatives are further analyzed to determine whether the changes result in  
25 conditions that would lead to degradation of groundwater quality (e.g. inducement  
26 of migration of poorer quality groundwater into areas of higher quality).

27 No mitigation measures were included in the EIS for groundwater conditions  
28 because groundwater pumping would be similar or decrease and groundwater  
29 elevations would be similar or rise under Alternatives 1 through 5 as compared to  
30 the No Action Alternative. The Second Basis of Comparison was included in the  
31 EIS for informational purposes only, as described in Chapter 3, Description of  
32 Alternatives. The Second Basis of Comparison does not comply with the  
33 definition of the No Action Alternative under the NEPA guidelines. Therefore,  
34 mitigation measures have not been considered for changes under Alternatives 1  
35 through 5 and the No Action Alternative as compared to the Second Basis of  
36 Comparison.

37 The analysis in the EIS assumes compliance with ongoing surface water and  
38 groundwater quality programs by 2030 under the No Action Alternative, Second  
39 Basis of Comparison, and Alternatives 1 through 5, including the Grassland  
40 Bypass Project in the San Joaquin Valley.

41 As described in the response to Comment AA 29, the EIS analysis assumes  
42 compliance with all requirements for water transfers, including transfers with  
43 provisions for groundwater substitution, that involve either CVP and SWP water  
44 contract water supplies or facilities are described in Section 5.4.2.1.3 of

1 Chapter 5, Surface Water Resources and Water Supplies, to protect other  
2 groundwater uses and groundwater quality under the No Action Alternative,  
3 Second Basis of Comparison, and Alternatives 1 through 5.

4 **AA 33:** The EIS analysis is conducted to evaluate the No Action Alternative,  
5 Second Basis of Comparison, and Alternatives 1 through 5 comparative  
6 conditions in Year 2030. Historic data, including streamflow depletion values,  
7 were used to develop the input values and assumptions used in the CVHM model,  
8 as described in Appendix 7A, Groundwater Model Documentation. The existing  
9 conditions maps are included in the reference cited in the EIS, the 2009 U.S.  
10 Geological Survey report entitled *Groundwater Availability of the Central Valley*  
11 *Aquifer, California*, which used the CVHM model for the evaluation of the Central  
12 Valley aquifer conditions. It is recognized that the U.S. Geological Survey is  
13 currently updating this report.

14 **AA 34:** The analysis includes an estimated 10 percent cost increase in  
15 groundwater pumping to include other additional economic costs (lower  
16 groundwater tables, subsidence, streamflow depletion, depreciation, well  
17 replacement, and increased treatment costs). This estimate was based on a review  
18 of water management studies with projected costs for a range of water resource  
19 supplies during the development of Chapter 19, Socioeconomics, and  
20 Appendix 19A, California Water Economics Spreadsheet Tool (CWEST)  
21 Documentation. Relevant information was reviewed and considered to reach the  
22 10 percent conclusion. General information is available in the literature, but the  
23 information necessary to accurately assign a unique and representative cost to  
24 each individual contractor does not exist. The additional costs of lower  
25 groundwater tables, subsidence, streamflow depletion, depreciation, well  
26 replacement, and increased treatment costs are influenced by regional factors and  
27 should not be entirely attributed to the amount of water pumped. Variations  
28 among regions in precipitation, recharge patterns, and groundwater hydraulics,  
29 and technology may have more influence on these additional costs than the  
30 amount of groundwater pumped. For example, in some regions, close  
31 connectivity between groundwater and surface water might allow a large rainfall  
32 event to eliminate lower groundwater levels. In other regions, lower groundwater  
33 tables might be sustained indefinitely. Some regions experience subsidence and  
34 streamflow depletion, others do not. Depreciation of wells and pumps is related  
35 to age of the equipment and changing technology as well as the amount of water  
36 pumped. In most regions, changes in groundwater costs, other than the direct  
37 pumping costs, are a very small fraction of all changes in water operating  
38 expenses caused by an alternative.

39 **AA 35:** As described in the response to Comment AA 32, no mitigation measures  
40 were included in the EIS for groundwater conditions because groundwater  
41 pumping would be similar or decrease and groundwater elevations would be  
42 similar or increased under Alternatives 1 through 5 as compared to the No Action  
43 Alternative. The Second Basis of Comparison was included in the EIS for  
44 informational purposes only, as described in Chapter 3, Description of  
45 Alternatives. The Second Basis of Comparison does not comply with the

1 definition of the No Action Alternative under the NEPA guidelines. Therefore,  
2 mitigation measures have not been considered for changes under Alternatives 1  
3 through 5 and the No Action Alternative as compared to the Second Basis of  
4 Comparison.

5 **AA 36:** The cumulative effects do include water transfers. The discussion of  
6 cumulative effects associated with water transfers in Chapter 7, Groundwater  
7 Resources and Groundwater Quality, has been modified in the Final EIS.

8 **AA 37:** Continuation of the Lower Yuba River Accord water transfers is assumed  
9 in the No Action Alternative, Second Basis of Comparison, and Alternatives 1  
10 through 5. Surface water diversions and flows from this program are included in  
11 the CalSim II model and are input into the CVHM model as a diversion node.  
12 When surface water transfers occur, the CVHM model automatically adjusts the  
13 groundwater pumping to make up for reduced surface water availability used  
14 locally in the Feather River and Yuba River watersheds. Therefore, the effects of  
15 this transfer program are included in the modeling analysis for each alternative  
16 and are independent of the impacts from the alternatives.

17 **AA 38:** The Bay Delta Conservation Plan (BDCP) would primarily convey water  
18 from North Delta and South Delta intakes in wet water year conditions. During  
19 drier years, the intakes could convey less water than under the No Action  
20 Alternative and there would be many months when the North Delta intakes would  
21 not be allowed to operate, as described in the Draft EIR/EIS for the Bay Delta  
22 Conservation Plan (BDCP). The BDCP would be operated in a manner to protect  
23 water users and environmental habitat located upstream of and in the Delta in  
24 accordance with permits issued by the SWRCB, USFWS, NMFS, and California  
25 Department of Fish and Wildlife. As described in the Draft EIR/EIS for the  
26 BDCP, the full capacity of the North Delta intakes would only be used during  
27 periods with high river flows, such as following a major rainfall event or rapid  
28 snow melt event.

29 **AA 39:** Section 7.3 of Chapter 7, Groundwater Resources and Groundwater  
30 Quality, has been modified to include a discussion of the project referred to in this  
31 comment.

32 **AA 40:** The projects listed in this comment are either considered to be relatively  
33 short-term and may not be implemented in 2030 or speculative.

34 The cumulative effects analysis in the Final EIS has been modified to include the  
35 2015 *Westlands v. United States* Settlement.

36 The transfer projects described in this comment are scheduled to be completed  
37 before 2030. However, as described in the response to Comment AA 29, it is  
38 anticipated that similar programs would continue in the Year 2030 in the No Action  
39 Alternative, Second Basis of Comparison, and Alternatives 1 through 5. Therefore,  
40 these projects are not also included in the cumulative impact analysis.

41 Future installation of groundwater wells also is considered to continue in the  
42 Year 2030 in the No Action Alternative, Second Basis of Comparison, and  
43 Alternatives 1 through 5. However, it would be speculative to project the details of



1 specific projects. The expansion of wellfields was anticipated in the EIS as  
2 groundwater is used to replace reductions in CVP and SWP water deliveries under  
3 some alternatives as compared to the No Action Alternative and Second Basis of  
4 Comparison. The impacts of the additional withdrawals are included in the impact  
5 analysis in Chapter 7, Groundwater Resources and Groundwater Quality. The  
6 programs listed in this comment could be part of those actions as CVP water  
7 deliveries have been reduced as compared to historical conditions.

8 **AA 41:** The District Court required Reclamation to prepare a NEPA document  
9 upon the provisional acceptance of the RPA actions in the 2008 USFWS BO and  
10 2009 NMFS BO. Reclamation has consulted DWR on this matter and DWR has  
11 stated that there was no state action requiring CEQA.

12 **AA 42:** The mitigation measures adopted by Reclamation will be included in the  
13 Record of Decision.

14 **AA 43:** The Preferred Alternative was defined following review of comments on  
15 the Draft EIS. The Preferred Alternative is described in Section 1.5 of Chapter 1,  
16 Introduction, of the Final EIS.

17 **AA 44:** As described in Section 3.3, Reclamation included the Second Basis of  
18 Comparison to identify changes that would occur due to actions that would not  
19 have been implemented without Reclamation's provisional acceptance of the  
20 BOs, as required by the District Court order. Alternative 1 is included in the  
21 range of alternatives considered in this EIS because the Second Basis of  
22 Comparison is not an alternative under NEPA.

23 **AA 45:** Comment noted. The EIS analysis adequately addresses the effects of the  
24 coordinated long-term operation of the CVP and SWP.

1 **1D.1.2 California Farm Bureau Federation**

From: Justin Fredrickson <[JEF@cfbf.com](mailto:JEF@cfbf.com)>  
Date: Tue, Sep 29, 2015 at 5:17 PM  
Subject: California Farm Bureau Federation Staff Comments On Draft Eis Re: Long-Term CVP/SWP Coordinated Operations  
To: "[bcnelson@usbr.gov](mailto:bcnelson@usbr.gov)" <[bcnelson@usbr.gov](mailto:bcnelson@usbr.gov)>

The following general input is offered on the above-referenced Draft EIS:

NEPA requires Reclamation to consider impacts of the proposed action, not only on the physical environment, but also on the quality of the human environment, and to choose the least damaging, self-mitigating alternative. This is especially important in light of the severe social, economic, and environmental impacts of the current biological opinions and to the extent our courts have held that the Endangered Species Act makes no provision for human and economic impacts and essentially allows no balancing of harms.

CFBF 1

Groundwater is a key physical impact to consider when looking at long-term impacts of coordinated CVP/SWP operations under the existing biological opinions. Surface water supply is another key parameter to consider.

CFBF 2

Agricultural resources and land use impacts and socioeconomic impacts—including, especially, agricultural employment and economic impacts to agriculture—are key impacts to consider in relation to the human environment. Groundwater can indirectly impact the human environment by impacting domestic wells, drinking water, disadvantaged communities, etc. Air quality impacts from less land in production are another key consideration with respect to the human environment.

CFBF 3

CFBF 4

In general terms, NEPA compels Reclamation to implement the alternative with the least adverse impacts to surface supplies and associated groundwater pumping that would, in turn, go furthest to reduce adverse impacts to the human environment—including especially impacts on agricultural resources, land use, and the socio-economics.

CFBF 5

The EIS's assumptions about groundwater as a straight 1:1 substitute for lost surface water deliveries through 2030 (or even 2042), and on associated impacts to agricultural resources, land use, and socioeconomic, regardless of the impact on groundwater levels, pumping costs, and new state regulation of groundwater, are questionable assumptions and appear to mask the severity of potential adverse effects in these key resource areas. CFBF 6

Justin E. Fredrickson

Environmental Policy Analyst

Legal Department

California Farm Bureau Federation

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2 **1D.1.2.1 Responses to Comments from California Farm Bureau**  
 3 **Federation**

4 **CFBF 1:** The Council of Environmental Quality regulations provide for the lead  
 5 agency (Reclamation for this EIS) to identify the preferred alternative that will  
 6 fulfill the statutory mission and responsibilities, with consideration to physical,  
 7 environmental, human resource, and economic factors. The preferred alternative  
 8 does not need to be the least damaging, self-mitigating alternative. The  
 9 Preferred Alternative is described in Section 1.5 of Chapter 1, Introduction, of  
 10 the Final EIS.

11 **CFBF 2:** The changes in groundwater and surface water conditions under the  
 12 alternatives in this EIS as compared to the No Action Alternative and the Second  
 13 Basis of Comparison can be used to differentiate between the alternatives,  
 14 including the No Action Alternative, as described in Chapter 5, Surface Water  
 15 Resources and Water Supplies, and Chapter 7, Groundwater Resources and  
 16 Groundwater Quality, of this EIS.

17 **CFBF 3:** The EIS analysis includes an evaluation of changes in CVP and SWP  
 18 water deliveries based on the CalSim II models and the related changes in  
 19 groundwater elevations, agricultural land uses, and agricultural economics in the  
 20 CVP and SWP water service areas, as described in Chapter 5; Chapter 7; and  
 21 Chapter 12, Agricultural Resources, in the EIS. As described in Chapter 12,  
 22 changes in CVP and SWP surface water deliveries and groundwater use would  
 23 result in no substantial changes in agricultural land use and employment.

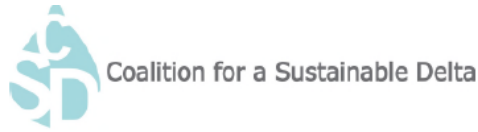
24 **CFBF 4:** The EIS analysis indicates that agricultural land use would not  
 25 substantially change under the Alternatives 1 through 5 as compared to the No  
 26 Action Alternative, and under the No Action Alternative and Alternatives 1  
 27 through 5 as compared to the Second Basis of Comparison. Therefore, there are  
 28 no changes in dust generation from agricultural lands, as described in Chapter 16,  
 29 Air Quality and Greenhouse Gas Emissions.

1 **CFBF 5:** As described in the response to Comment CFBF 1, the Council of  
2 Environmental Quality regulations provide for the lead agency (Reclamation for  
3 this EIS) to identify the preferred alternative that will fulfill the statutory mission  
4 and responsibilities, with consideration to physical, environmental, human  
5 resource, and economic factors. The preferred alternative does not need to be the  
6 alternative with the least adverse impacts to surface water supplies, groundwater,  
7 agricultural production, land use, and socioeconomics.

8 **CFBF 6:** The SWAP model, a regional agricultural production and economic  
9 optimization model that simulates the decisions of farmers across 93 percent of  
10 agricultural land in California, was used to determine changes in agricultural land use  
11 and employment based upon changes in CVP and SWP water deliveries and cost-  
12 effective water supplies, as described in Appendix 12A, Statewide Agricultural  
13 Production Model (SWAP) Documentation, of the EIS. The SWAP model  
14 simulates changes in Year 2030 based upon economic optimization factors related  
15 to crop selection, water supplies, and other factors to maximize profits with  
16 consideration of resource constraints, technical production relationships, and  
17 market conditions. The model indicated that even with the cost of groundwater  
18 pumping from greater depths, the overall agricultural production could be  
19 maintained. The analysis assumes changes occur under the No Action Alternative  
20 and Second Basis of Comparison between the recent conditions and Year 2030  
21 with or without implementation of the 2008 USFWS BO and the 2009 NMFS  
22 BO; and the EIS evaluates changes in 2030 under the alternatives discussed  
23 Chapter 5 through 21 of the EIS.



1 **1D.1.3 Coalition for a Sustainable Delta**



September 29, 2015

**VIA E-MAIL**

Ben Nelson  
U.S. Bureau of Reclamation  
Bay-Delta Office  
801 I Street, Suite 140  
Sacramento, CA 95814-2536  
bcnelson@usbr.gov

Re: Draft Environmental Impact Statement for the Coordinated Long-Term  
Operation of the Central Valley Project and State Water Project

Dear Mr. Nelson,

The Coalition for a Sustainable Delta (Coalition) is a California nonprofit corporation comprised of agricultural, municipal, and industrial water users, as well as individuals in the San Joaquin Valley. The Coalition and its members depend on water from the Sacramento-San Joaquin Delta (Delta) for their continued livelihood. Individual Coalition members frequently use the Delta for environmental, aesthetic, and recreational purposes; thus, the economic and non-economic interests of the Coalition and its members are dependent on a healthy and sustainable Delta ecosystem.

CSD 1

The Coalition appreciates the opportunity to review the Draft Environmental Impact Statement for the Coordinated Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP) issued on July 31, 2015 (DEIS). The Coalition also appreciates the Bureau of Reclamation's (Bureau) efforts to involve stakeholders in the scoping process, as well as during the preparation of the DEIS. The Coalition believes that this collaborative approach will enable the Bureau to fully evaluate the potential environmental impacts of the proposed action and to otherwise fulfill its obligations under the National Environmental Policy Act (NEPA).

The Coalition has reviewed the DEIS and has a few concerns regarding the following:

CSD 2

1. The improperly narrow purpose of the proposed action;
2. The range of alternatives;
3. The disparate treatment of scientific uncertainty;

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## Appendix 1D: Comments from Interest Groups and Responses

U.S. Bureau of Reclamation  
September 29, 2015  
Page 2

4. The assumptions regarding groundwater;
5. The lack of factual support for the Bureau's conclusions as respects ocean harvest; and
6. The failure to fully incorporate relevant, high quality scientific information.

CSD 2  
continued

The Coalition encourages the Bureau to consider these concerns, which are discussed in further detail below, as it moves forward in preparing the final environmental impact statement (EIS).

### I. Purpose of the Proposed Action.

As noted by the Coalition in its prior letter to the Bureau dated July 13, 2015, the purpose of the proposed action is defined too narrowly, so as to preclude evaluation of potentially significant changes to CVP and SWP operations. In pertinent part, the DEIS states that the purpose of the proposed action is to continue the operation of the CVP and SWP in a manner that "[i]s similar to historic [sic] operational parameters with certain modifications." DEIS at 2-1. This statement improperly restricts the scope of the Bureau's environmental review, and precludes consideration of alternatives that would alter operations from those implemented in the past. This statement also does not reflect the "underlying" purpose of the proposed action, which is more general in nature. See 40 C.F.R. § 1502.13; see also *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997) (it is an abuse of discretion to define project objectives in unreasonably narrow terms because "[t]he stated goal of a project necessarily dictates the range of 'reasonable' alternatives.") (citation omitted). Thus, the Coalition urges the Bureau to revise the purpose of the proposed action to omit any reference to "historical operational parameters."

CSD 3

### II. Description of Alternatives.

The Coalition recognizes and appreciates that the Bureau has developed Alternatives 3 and 4 based on scoping comments submitted by the Coalition. However, the Coalition has concerns regarding two of the Bureau's conclusions relating to the Coalition's proposed suite of actions.

CSD 4

#### A. San Joaquin River Inflow.

Action IV.2.1 of the Reasonable and Prudent Alternative (RPA) included in the National Marine Fisheries Service's (NMFS) 2009 Biological Opinion (BiOp) imposes an inflow to export (I:E) ratio requirement on San Joaquin River flows during certain periods of the year. As reflected in Table 3.1 of the DEIS, the Coalition suggested that these flow criteria be modified as follows:

Flows in San Joaquin River at Vernalis (7-day running average shall not be less than 7 percent of the target requirement) shall be based on the New Melones

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## Appendix 1D: Comments from Interest Groups and Responses

U.S. Bureau of Reclamation  
September 29, 2015  
Page 3

Index (as described in [NMFS BiOp] RPA Action IV.2.1) as follows for January 1 through June 15:

- a) If the Index is 999 TAF or less - no minimum flow requirement[;]
- b) If the Index is 1000-1399 TAF - minimum flow is the greater of the SWRCB D-1641 requirement or 1500 cfs[;]
- c) If the Index is 1400-1999 TAF - minimum flow is the greater of the SWRCB D-1641 requirement or 3000 cfs[;]
- d) If the Index is 2000-2499 TAF - minimum flow is 4500 cfs[;]
- e) If the Index is above 2499 TAF - minimum flow is 6000 cfs.

DEIS at 3-25, 3-26. The DEIS states, however, that “this criteria is not implementable following the completion of the Vernalis Adaptive Management Program [VAMP].” *Id.* at 3-25. The Bureau’s explanation with respect to this issue is confusing. Is the Bureau asserting that it will not have sufficient water to satisfy the Coalition’s proposed flow criteria without implementation of VAMP? If so, this would appear to mean that, while the Bureau believes there is enough water to satisfy the current I:E ratio requirements, the Bureau believes there is not enough water (without VAMP) to satisfy the proposed inflow requirements, with no limitations on exports. This would suggest that the export limitation component of the I:E ratio is the driving factor allowing the Bureau to satisfy that requirement. Thus, according to the Bureau, inflow requirements alone, as proposed by the Coalition, cannot be satisfied without VAMP.

The Bureau’s reasoning with respect to this issue is unclear. Please provide additional details regarding why the Bureau believes that the proposed modifications are not implementable. In the alternative, please analyze the Coalition’s proposed alternative without adjusting the inflow requirement.

### **B. Wastewater Treatment Plants.**

As set forth in Table 3.1, the Coalition suggested that water quality improvement programs at two water treatment plants—the Sacramento Regional Wastewater Treatment Plant and the Fairfield-Suisun Sewer District treatment plant—be expedited to allow for earlier realization of the expected benefits. DEIS at 3-28, 3-29. According to the Bureau, however, “both of these actions would be complete by 2030, the study period considered in [the DEIS].” DEIS at 3-43. That is, “[b]ecause the Environmental Consequences analysis in this EIS is conducted as a ‘snapshot’ in time at 2030, inclusion of a provision to require compliance with the discharge requirements prior to 2020 [c]ould not be evaluated.” *Id.* The Bureau’s reasoning with respect

CSD 4  
continued

CSD 5

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## Appendix 1D: Comments from Interest Groups and Responses

U.S. Bureau of Reclamation  
September 29, 2015  
Page 4

to this issue is problematic. The fact that the proposed actions would be completed prior to 2020 should not preclude the Bureau's consideration of them.<sup>1</sup> The proposal could ultimately improve conditions in the Delta prior to 2030. That is, the proposal could result in different—likely better—baseline conditions in 2030. Thus, the Bureau could consider the benefits that would result from the proposal, and be present in the Delta, in 2030. This would be consistent with the Bureau's "snapshot" approach.

CSD 5  
continued

The flaws in the Bureau's reasoning are also apparent in other sections of the DEIS. For example, in Chapter 6, with respect to Alternative 4, the DEIS states: "Water quality under Alternative 4 would be identical to conditions under the Second Basis of Comparison." DEIS at 6-105. But, this is only the case because the Bureau has rejected the Coalition's water treatment plant proposal. Nothing in the Bureau's "snapshot" approach precludes the Bureau from taking into account the benefits of the Coalition's proposal. The Bureau could simply analyze the extent to which water quality conditions would improve under Alternative 4 (qualitatively, if necessary), and then continue its analysis from there.

This issue arises in other contexts as well, including with respect to invasive species. The DEIS states that a Total Maximum Daily Load (TMDL) addressing impairment due to invasive species is expected to be complete by 2019. DEIS at 6-73. Yet the water quality benefits of the TMDL, which should be included within the No Action Alternative and the Second Basis of Comparison, are not part of the baseline. See Daniel R. Mandelker, NEPA Law and Litig. § 10:33.20 (2014) (EIS must contain "an adequate compilation of relevant data and information, including baseline data") (citing, among others, *Northern Plains Resource Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067 (9th Cir. 2011) (baseline data inadequate)).

Moreover, in general, the Bureau's "snapshot" approach is concerning. DEIS at 3-43; see also *id.* at 4-1 (describing that the DEIS does "not address interim changes that would occur between now and 2030"); *id.* at 1-11 ("this EIS analyzes future conditions projected for 2030"); *id.* at 3-4 ("[c]hanges that will occur over the next 15 years without implementation of the alternatives are not analyzed in this EIS."). While agencies have discretion to establish the temporal scope of NEPA analyses, this discretion is not unlimited. See *Selkirk Conservation Alliance v. Forsgren*, 336 F.3d 944, 962 (9th Cir. 2003) (NEPA does not impose a requirement that federal agencies analyze impacts of actions for any particular length of time). An agency cannot select a temporal scope that allows them to "shirk their responsibilities under NEPA." *Id.* Here, as a practical matter, the EIS ignores significant impacts that could occur in the Delta in the near-term, and only analyzes impacts in the long-term. It is not clear that this approach

<sup>1</sup> To the extent that the Bureau is asserting that the proposal could not be evaluated because it could not be quantitatively modeled, the Bureau should have at least analyzed the proposal qualitatively. This is consistent with qualitative analyses already performed by the Bureau with respect to the alternatives. See, e.g., DEIS at 7-122.

satisfies the Bureau's obligations to take a "hard look" at the environmental consequences of the proposed action. *Id.* at 959.

CSD 5  
continued

Thus, the Coalition requests that the Bureau incorporate the Coalition's wastewater treatment plant proposal into Alternative 4. The Coalition further requests that the Bureau ensure that its "snapshot" approach is applied in a manner that is consistent with NEPA, including with respect to invasive species.

### III. Disparate Treatment of Scientific Uncertainty

The Bureau appears to have concluded that the benefits associated with the non-operational components of Alternatives 3 and 4 (i.e., ocean harvest restrictions, predator control measures, and trap and haul requirements) are uncertain. *See, e.g.*, DEIS at 9-402 ("Overall, given the small differences between Alternative 3 and the No Action Alternative conditions and the uncertainty regarding the non-operational components, distinguishing a clear difference is not possible) (emphasis added); *see also* 9-281, 9-287, 9-296, 9-300 (same). The Coalition has several concerns regarding these conclusions.

CSD 6

As an initial matter, and as more fully set forth below in Section V with respect to ocean harvest, the analyses in the DEIS do not support the Bureau's conclusions that benefits associated with non-operational components are uncertain. For example, with respect to trap and haul, the DEIS states:

"To assess the potential benefits and risks of a transportation [trap and haul] program for salmonids in the San Joaquin River, an analysis of [coded-wire-tag] recovery rates for Chinook Salmon reared at the Feather River Hatchery and the Mokelumne River Hatchery was performed. Based on this analysis, *Alternative 3 is expected to directly benefit juvenile fall-run Chinook Salmon and steelhead smolts originating from the San Joaquin River basin by comparison to the No Action Alternative.* The program would also benefit spring-run Chinook Salmon if these fish become established as part of the San Joaquin River Restoration Program, or as part of the New Melones fish passage project."

DEIS at 316 (emphasis added). Yet, on multiple occasions, the Bureau characterizes these benefits as "uncertain." *Id.* at 9-281, 9-287, 9-296, 9-300, 9-402; *see also* Section V., *infra*. In doing so, the Bureau has failed to comply with bedrock principles of administrative law, which require agencies to provide a rational connection between the facts found and the choices made. *Motor Vehicles Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983).

CSD 7

Even assuming that the benefits associated with the non-operational components of Alternatives 3 and 4 are in fact uncertain, the Bureau has failed to take into account or



## Appendix 1D: Comments from Interest Groups and Responses

U.S. Bureau of Reclamation  
September 29, 2015  
Page 6

otherwise address uncertainty in a consistent manner in the DEIS. In particular, many of the Bureau's conclusions with respect to measures quantitatively analyzed, including Old and Middle River (OMR) measures, are expressed without any acknowledgement of the associated uncertainty.

CSD 7  
continued

For example, in Appendix 9G, the DEIS explains that the delta smelt entrainment analysis is based on regression equations that take into account combined OMR flows and the location of X2.<sup>2</sup> The analysis is premised on the assertion that X2 is an indicator of suitable abiotic habitat for delta smelt. Yet, in other chapters, the DEIS acknowledges that this conclusion has been questioned. DEIS at 9-64, 9-66. Agencies are required to discuss areas of controversy and opposing points of view, 40 C.F.R. §§ 1502.9(b), 1502.12, in order to provide the public with a "full and fair discussion" of significant environmental impacts. *Id.* at § 1502.1. Here, a more even-handed approach would be to revise Appendix 9G to acknowledge the inherent uncertainty that arises when using a formula that relies on a hypothesis that is scientifically questionable.

In sum, the Bureau's conclusions ignore the inherent uncertainty found in all scientific modeling. The fact that certain measures are capable of quantitative analyses does not make the conclusions derived therefrom less uncertain, particularly where, as here, there are significant, unproved assumptions that are incorporated into the modeling. Yet, the Bureau emphasizes the uncertainty associated with non-operational proposals, but does not do the same with respect to operational measures. The Bureau's analyses in the DEIS should be revised to correct the disparate treatment of scientific uncertainty.

#### IV. Groundwater Assumptions.

The DEIS contains several inaccurate assumptions relating to groundwater. For example, Chapter 5, relating to Surface Water Resources and Water Supplies, states: "The No Action Alternative and the Second Basis of Comparison assume that groundwater would continue to be used even if groundwater overdraft conditions continue or become worse." DEIS at 5-68. The DEIS acknowledges that the Sustainable Groundwater Management Act (SGMA) was enacted in 2014, but concludes that: "[T]o achieve sustainable conditions in many areas, measures could require several years to design and construct water supply facilities to replace groundwater, such as seawater desalination. Therefore, it does not appear to be reasonable and foreseeable that sustainable groundwater management would be achieved by 2030; and it is assumed that groundwater pumping will continue to be used to meet water demands not fulfilled with surface water supplies or other alternative water supplies in 2030." DEIS at 5-69.

CSD 8

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<sup>2</sup> X2 refers to the point in the Delta where the isohaline is two parts per thousand.

## Appendix 1D: Comments from Interest Groups and Responses

U.S. Bureau of Reclamation  
September 29, 2015  
Page 7

Notably, the DEIS expressly acknowledges the significant adverse effects that are caused by groundwater overdraft. *See, e.g.*, DEIS at 7-15, 7-18, 7-21, 7-31, 7-45 (describing concerns regarding subsidence, increased water supply well drilling, and significant drops in groundwater levels between 2010 and 2014 due to drought (up to 40 feet in Kern County)). Thus, contrary to the Bureau's conclusions, it is unreasonable to assume that affected agencies and stakeholders will continue to rely on groundwater, given all of the deleterious impacts associated with groundwater exploitation. *See id.* at 7-116.

CSD 8  
continued

Moreover, the groundwater assumptions in the DEIS with respect to agriculture are particularly concerning. Chapter 12, relating to Agricultural Resources, states: "The analysis does not restrict groundwater withdrawals based upon groundwater overdraft or groundwater quality conditions....Therefore, it was assumed that Central Valley agriculture water users would not reduce groundwater use by 2030, and that groundwater use would increase in response to reduced CVP and SWP water supplies." DEIS at 12-24. Based on these assumptions, the Bureau concludes that there will be no changes in conditions for agricultural resources under Alternatives 1 through 5 because, according to the Bureau, decreases in CVP and SWP water supplies will be made up with groundwater. DEIS at 12-57.

The Bureau's conclusions are simply not supported by the facts. Indeed, the analysis in Chapter 12 includes several examples of how agriculture has been significantly impacted by reduced CVP and SWP water supplies. These examples include:

- "In extreme dry periods, such as 2014 when there were no deliveries of CVP water to San Joaquin Valley water supply agencies with CVP water service contracts, permanent crops were removed because the plants would not survive the stress of no water or saline groundwater (Fresno Bee 2014)." DEIS at 12-10.
- Due to the increased frequency of water supply reductions, especially in drier years ..., the amount of fallowed and non-harvested lands has increased as a percentage of total lands within Westlands Water District. *Id.* at 12-12.
- Since 2000, farmers have increased the amount of fallowed and non-harvested acres to 10 to 34 percent of the total land in the [Westlands water] district. *Id.* at 12-15.

If the Bureau's assumptions were correct – that loss of CVP and SWP water supplies would be made up with groundwater – these conditions would not have occurred. The fact that agricultural production has decreased significantly over the past several years undermines the Bureau's conclusions.

Furthermore, the Bureau's assumptions with respect to groundwater use and agriculture are not necessary. Using the same Statewide Agricultural Production Model utilized in the DEIS, DEIS at 12-23, the Bureau could have modeled alternative ranges of groundwater pumping.

CSD 9

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## Appendix 1D: Comments from Interest Groups and Responses

U.S. Bureau of Reclamation  
September 29, 2015  
Page 8

This approach was employed in 2009, under similar drought conditions. See Richard E. Howitt, Duncan MacEwan, and Josue Medellin-Azuara, *Economic Impacts of Reductions in Delta Exports on Central Valley Agriculture*, AGRICULTURAL AND RESOURCE ECONOMICS, Vol 12, No. 3 (Jan/Feb 2009). In assessing the economic impacts of reductions in CVP and SWP exports on Central Valley agriculture, Howitt et al. expressly acknowledged: “[T]he ability of farmers to pump additional groundwater depends on both its availability and the cost of pumping. Due to uncertainty in the ability of farmers to increase pumping in the short run, results are calculated for a range of groundwater pumping increases of 25, 50, 75, and 100%.” The results of their analyses therefore reflect this range of groundwater pumping. *Id.* at 2 (“Revenue losses for Central Valley farmers range from \$1.2 to \$1.6 billion for 2009, depending on farmer groundwater pumping response.”); *id.* (“Depending on the ability of farmers to increase groundwater pumping, gross revenue losses could range as high as \$1.6 billion.”).

CSD 9  
continued

Not only do Howitt et al. provide an alternative approach by which the Bureau could analyze agricultural impacts,<sup>3</sup> but they demonstrate that the Bureau’s current assumptions with respect to groundwater are flawed. And it is improper for the Bureau to rely on incorrect assumptions. See *Natural Res. Def. Council v. U.S. Forest Serv.*, 421 F.3d 797, 812 (9th Cir. 2005) (rejecting U.S. Forest Service’s conclusions in an EIS because they were based on incorrect data and assumptions). Moreover, courts do not hesitate to reject methodologies that are clearly flawed. See, e.g., *Conservation Nw. v. Rey*, 674 F. Supp. 2d 1232, 1249 (W.D. Wash. 2009) (holding the “Agencies’ methodology [as respects forest plans] is flawed enough to be a violation of NEPA”). In short, Howitt et al.’s results directly contradict the Bureau’s conclusions that agricultural resources will not be impacted under Alternatives 1 through 5. Howitt et al. at 3-4 (“SWAP model results show that substantial reductions in available water from CVP and SWP deliveries ... will severely reduce Central Valley income, employment, revenues, and cropped acres.”).

Nor do the Bureau’s conclusions make sense as a practical matter. It is well established that CVP and SWP exports will be significantly reduced under the No Action Alternative, as compared to the Second Basis of Comparison, due to implementation of the RPAs included in 2008 U.S. Fish and Wildlife BiOp and the 2009 NMFS BiOp. See DEIS at ES-20 (“Long-term average annual exports would be 1,051 [thousand acre feet] (22 percent) more under Alternative 1 [Second Basis of Comparison] as compared to the No Action Alternative”); see also

CSD 10

<sup>3</sup> Other publications also suggest that alternative groundwater modeling approaches are available to assess the impacts of CVP and SWP export reductions on agriculture. See Nicholas Brozovic, David Zilberman, and David Sunding, *On The Spatial Nature of the Groundwater Pumping Externality*, RESOURCE AND ENERGY ECONOMICS 32(2010): 154-164; Steven Buck, Maximillian Auffhammer, and David Sunding, *Land Markets and the Value of Water Supply: Hedonic Analysis using Panel Data*, AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS 96(2014): 953-969.

State Water Project Final Delivery Reliability Report (2011) at 38-39 (showing a decrease in SWP exports from 2005 to 2011 of 10.4% due to implementation of the RPAs); State Water Project Final Delivery Reliability Report (2013) at 30-32 (showing a decrease in SWP exports from 2005 to 2013 of 9.4% due to implementation of the RPAs). It is simply not reasonable to assume that farmers will be able to pump over a thousand acre feet of groundwater to recoup this loss. As explained by Howitt et al., there is significant doubt associated with groundwater availability and cost, and the Bureau has altogether ignored this uncertainty.<sup>4</sup>

CSD 10  
continued

In sum, the Bureau's assumptions with respect to groundwater are fundamentally flawed. Not only are local agencies subject to the requirements of the SGMA, which requires Groundwater Sustainability Plans by 2020, but it is simply unreasonable to assume that agencies will exploit groundwater resources in the manner suggested. The Bureau's analysis should be revised to better reflect the range of groundwater pumping that could occur under Alternatives 1 through 5, and the impacts that this range would have on agricultural resources.

**V. Ocean Harvest Conclusions are Unsupported by the Facts.**

In the context of a NEPA challenge, an agency's decision is arbitrary and capricious if the agency (1) relied on factors Congress did not intend it to consider, (2) entirely failed to consider an important aspect of the problem, or (3) *offered an explanation that runs counter to the evidence before the agency*. *Ctr. for Biological Diversity v. Salazar*, 695 F.3d 893, 902 (9th Cir. 2012) (emphasis added); *Friends of Endangered Species, Inc. v. Jantzen*, 760 F.2d 976, 986 (9th Cir. 1985) (agency must engage in "a reasoned analysis of the evidence before it").

CSD 11

Alternatives 3 and 4 include an action to modify ocean harvest for the purpose of minimizing mortality of natural original Central Valley Chinook Salmon. DEIS at 3-37, 3-40. The DEIS explains that, although approximately 75-90 percent of harvested salmon are hatchery fish, the

<sup>4</sup> Notably, the recently released Partially Recirculated Draft Environmental Impact Report/Supplemental Draft EIS for the Bay Delta Conservation Plan/California WaterFix (RDEIR/SDEIS) includes statements inconsistent with those found in the DEIS. For example, with respect to agricultural resources, the RDEIR/SDEIS states: "The responses of water agencies to extended droughts provide good insights into the effects of *further reductions in exports of Delta water supplies*. The 1987–1992 drought had severe impacts on water agencies. Many purchased water from alternative sources to offset reduced Delta supplies, often at very high costs that some clients were unable to afford. Farmers responded to the resultant higher costs by increasing their own groundwater pumping and reducing their purchases from water agencies, *but also fallowed large acreages of both annual and permanent crop land.*" RDEIR/SDEIS at 4.2-9 (emphasis added). Thus, while increased groundwater pumping may occur as a result of reduced Delta exports, it is unreasonable to assume that agricultural resources will not be impacted.



## Appendix 1D: Comments from Interest Groups and Responses

U.S. Bureau of Reclamation  
September 29, 2015  
Page 10

fishery is often required to protect ESA-listed stocks, which include runs of Central Valley Chinook salmon. *Id.* at 9-277. The Bureau notes that “the impact of ocean harvest varies considerably by stock, but all stocks are impacted by harvest ....” *Id.* The Bureau further explains: “We have the tools, the knowledge and the ability to manage Chinook ocean harvest in whatever way is needed. As such, Alternative 3 is, from a technical and scientific level, entirely feasible.” *Id.*

CSD 11  
continued

Noting the intense harvest pressure on the various Chinook runs, the Bureau goes on to detail the benefits that would occur from reduced ocean harvest. DEIS at 9-278 (“reduced ocean harvest [for spring-run] would contribute substantially to age at-maturity diversity (certainly demographically, if not genetically) and thereby enhance population viability”); *id.* at 9-279 (“in the absence of this harvest, winter-run Chinook Salmon would have a larger fraction of their population maturing at age-4 or possibly older [which would] enhance demographic population viability, but also benefit the population by more effectively spawning in coarse substrates, and producing more, larger, and more thermally tolerant eggs”); *id.* at 279-280 (noting “harvest of natural origin fall-run Chinook Salmon appears to occur at a much higher rate than population productivity can sustain” and concluding “[c]hanges in harvest strategies which could more effectively target hatchery origin fall Chinook while better protecting natural origin fish would yield substantial benefits”). The Bureau concludes: “Managing ocean salmon harvest as described in Alternative 3 would contribute to the abundance, productivity and diversity viability criteria for natural origin spring-run, winter-run, and fall-run Chinook Salmon.” *Id.* at 9-280.

Inexplicably, however, the benefits of the ocean harvest action are simply not reflected in the Bureau’s conclusions. After stating that ocean harvest restrictions “could” benefit winter-run, spring-run, and fall-run, the Bureau concludes that, due to “uncertainty regarding the non-operational components [including ocean harvest restrictions], distinguishing a clear difference between alternatives is not possible.” *Id.* at 9-280, 9-287, 9-296. This conclusion is unsupported by the Bureau’s earlier analysis, in which it noted that the proposed harvest restrictions were technically feasible and would benefit the populations. The Bureau’s conclusions should be revised to better reflect its analyses, which indicate that the ocean harvest restrictions will benefit listed Chinook salmon. To do otherwise would be contrary to the administrative mandate that agencies provide a rational connection between the facts found and the choices made. *See Motor Vehicles Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto Ins. Co.*, 463 U.S. at 43.

It should also be noted that, with respect to Alternative 4, which includes the same ocean harvest action as Alternative 3, there is no alternatives analysis whatsoever. In one conclusory sentence, the DEIS states: “Conditions related to salmonid survival could be improved under Alternative 4 as compared to the No Action Alternative due to implementation of: trap and haul program, changes in bag limits, and changes in PMFC/NMFS harvest limits.” *Id.* at 342. This is

CSD 12

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Appendix 1D: Comments from Interest Groups and Responses

U.S. Bureau of Reclamation  
September 29, 2015  
Page 11

certainly not a reasoned scientific analysis sufficient to satisfy NEPA. See *Friends of Endangered Species, Inc. v. Jantzen*, 760 F.2d at 986.

CSD 12  
continued

**VI. Full Incorporation of New Scientific Information.**

In the Coalition’s previous letter dated July 13, 2015, the Coalition included an exhibit setting forth a list of publications that the Bureau should consider in its analyses. The Coalition appreciates that the Bureau has revised certain sections of the DEIS to reflect this list of publications. *E.g.*, DEIS at 9-64, 9-73, 9-141.

CSD 13

However, the Coalition is concerned that only certain sections have been updated, while other relevant sections are still based on incomplete information. For example, Section 9.4.1.3.5, the analysis on page 9-194, and Appendix 9G, which all relate to delta smelt, should be updated to reflect new, relevant scientific information.

NEPA requires information contained within an EIS to be of “high quality.” 40 C.F.R. § 1500.1(b). “Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.” *Id.* Agencies must “insure the professional integrity, including scientific integrity, of the discussions and analyses in [an EIS].” 40 C.F.R. § 1502.24.

Thus, the Coalition requests that the Bureau revise the EIS to ensure that all relevant analyses are updated to reflect the new, relevant scientific information previously identified by the Coalition.

**V. Conclusion.**

In sum, the Coalition urges the Bureau to address the foregoing items prior to issuance of the final EIS. We would be happy to discuss these issues further at your convenience.

CSD 14

Sincerely,



William D. Phillimore  
Board Member

cc: Patricia Aaron, U.S. Bureau of Reclamation

1 **1D.1.3.1 Attachments to Comments from Coalition for a Sustainable Delta**

2 Attachments to the Coalition for a Sustainable Delta letter are included in  
3 Attachment 1D.1 located at the end of Appendix 1D.

4 **1D.1.3.2 Responses to Comments from Coalition for a Sustainable Delta**

5 **CSD 1:** Comment noted.

6 **CSD 2:** Please see responses to Comments CSD 3 through CSD 20.

7 **CSD 3:** Reclamation was directed by the District Court to remedy its failure to  
8 conduct a NEPA analysis when it accepted and implemented the 2008 USFWS  
9 BO RPA and the 2009 NMFS BO RPA pursuant to the Federal Endangered  
10 Species Act of 1973 (ESA) as amended (United States Code [U.S.C.] 1531  
11 et. seq.). In order to satisfy the Court's directive, Reclamation has analyzed  
12 operation of the CVP, in coordination with the operation of the SWP, consistent  
13 with the BOs, as well as alternatives which represent potential modifications to  
14 the continued long-term operation of the CVP in coordination with the SWP. The  
15 purpose of the action, as described in Chapter 2, Purpose and Need, considers the  
16 purposes for which the CVP was authorized, as amended by CVPIA, as well as  
17 the regulatory limitations on CVP operations, including applicable state and  
18 federal laws and water rights. This purpose statement does not limit the analysis  
19 of the range of alternatives which includes alternatives with CVP and SWP  
20 operational assumptions substantially different than historic operational  
21 parameters. Because existing facilities were designed and constructed to operate  
22 under a variety of hydrologic conditions, Reclamation's operation of the CVP  
23 facilities is within the original designed range of operations.

24 **CSD 4:** The limited water supply available to Reclamation on the Stanislaus  
25 River through water rights associated with the New Melones Reservoir, are fully  
26 committed to multiple beneficial uses, including those on the Stanislaus River.  
27 The Vernalis Adaptive Management Program allowed for additional sources of  
28 water, other than available water within New Melones Reservoir to be used to  
29 maintain flow in the San Joaquin River. After the completion of this program,  
30 Reclamation does not have sufficient supply available in New Melones Reservoir  
31 to meet inflow targets suggested by CSD. Therefore, the I:E ratio can only be met  
32 through export limitations, and not through releases from New Melones  
33 Reservoir.

34 **CSD 5:** The wastewater treatment plant improvements for the Sacramento  
35 Regional Wastewater Treatment Plant are under construction. The final facilities,  
36 the tertiary treatment plant facilities, are scheduled to be completed in 2023.  
37 Because construction is underway on a site that requires continuous operation of  
38 existing facilities, it would be difficult for Reclamation to require an accelerated  
39 construction schedule. The new facilities are anticipated to be operated at least  
40 seven years prior to the Year 2030. Therefore, it is assumed that these facilities  
41 will be constructed and in operation in the same manner under the No Action  
42 Alternative, Second Basis of Comparison, and Alternatives 1 through 5 in the  
43 Year 2030. The EIS analysis does not compare conditions under the existing

1 conditions to conditions under the No Action Alternative, Second Basis of  
2 Comparison, and Alternatives 1 through 5.

3 The EIS analysis is a comparative analysis of conditions at Year 2030 that  
4 compares Alternatives 1 through 5 to the No Action Alternative, and No Action  
5 Alternative and Alternatives 1 through 5 to the Second Basis of Comparison.  
6 Implementation of the Total Maximum Daily Load and other existing water  
7 quality objectives by 2020 in accordance with identified schedules would be  
8 consistent under the No Action Alternative, Alternatives 1 through 5, and Second  
9 Basis of Comparison. Therefore, the results of the comparison of the alternatives  
10 would not be affected by implementation of these criteria.

11 **CSD 6:** Additional details of the analysis of the trap and haul program associated  
12 with Alternatives 3 and 4 is included in the Final EIS as Appendix 9O and  
13 Section 9.4.1 of Chapter 9, Fish and Aquatic Resources. Text revisions to  
14 page 9-316 of the Draft EIS indicate an improvement in survival and clarify  
15 uncertainty by describing the potential for unintended consequences associated  
16 with the trap and haul program. Text was also added to pages 9-287, 9-296, and  
17 9-300 of the Draft EIS to indicate the potential for improved survival due to the  
18 non-operational measures included in Alternative 3.

19 **CSD 7:** The text on page 9G-2 of Appendix 9G, Smelt Analysis, has been  
20 modified to reflect the uncertainty associated with using X2 as an indicator of  
21 suitable habitat for Delta Smelt. Text has been added to Chapter 9 of the Final  
22 EIS related to uncertainty regarding analysis of operational measures.

23 **CSD 8:** It is impossible to exactly predict how groundwater users would respond  
24 to changes in surface water deliveries in Year 2030. The Sustainable  
25 Groundwater Management Act does not prevent increased groundwater  
26 withdrawals until the Groundwater Sustainability Plans are completely  
27 implemented in 2040 to 2042. The SWAP model, as described in Chapter 12,  
28 Agricultural Resources, of the EIS, indicates that groundwater elevations under  
29 the No Action Alternatives, the Second Basis of Comparison, and Alternatives 1  
30 through 5 would not result in adverse economic impacts on a regional basis. As  
31 described in Section 12.4.3 of Chapter 12, reduced cultivation of agricultural  
32 lands could occur within individual farms; however, the amount of lands affected  
33 would be relatively small on a regional basis. The EIS analysis compares  
34 conditions in Year 2030 under the No Action Alternative with conditions under  
35 Alternatives 1 through 5; and conditions in 2030 under the Second Basis of  
36 Comparison with conditions under the No Action Alternative and Alternatives 1  
37 through 5. The EIS analysis does not compare conditions under the alternatives  
38 and Second Basis of Comparison to the existing conditions in the NEPA analysis.

39 **CSD 9:** The cited Howitt et al. drought impact study was updated and revised in  
40 later months as more information became available, resulting in substantially  
41 lower estimated impacts (see Howitt et al., “Drought, Jobs, and Controversy:  
42 Revisiting 2009”, Agricultural and Resource Economics, Vol 14, No. 6,  
43 Jul/Aug 2011). Importantly, the analysis in that drought impact study did not  
44 include a detailed groundwater modeling analysis to assess the physical effects of

1 reduced water supplies on groundwater conditions. Therefore, it relied on a set of  
2 assumptions about how pumping might change. In contrast, the analysis in this  
3 EIS includes a detailed groundwater modeling analysis (as described in Chapter 7,  
4 Groundwater Resources and Groundwater Quality). The agricultural analysis in  
5 Chapter 12, Agricultural Resources, was performed based on and consistent with  
6 the results of the groundwater analysis. Based on the estimated pumping lift  
7 changes (and therefore pumping costs) relative to the value of agricultural  
8 production, the SWAP model estimates that changes in irrigated acreage and  
9 value of production would be less than 1 percent (relative to the 2030 No Action  
10 Alternative) on a regional basis. As described in Section 12.4.3 of Chapter 12,  
11 reduced cultivation of agricultural lands could occur within individual farms with  
12 more limited access to groundwater.

13 **CSD 10:** The Sustainable Groundwater Management Act does not prevent  
14 increased groundwater withdrawals until the Groundwater Sustainability Plans are  
15 completely implemented in 2040 to 2042. Therefore, groundwater use is not  
16 limited in the EIS groundwater analysis. It should be noted that Figures 7.15  
17 through 7.60 in Chapter 7, Groundwater Resources and Groundwater Quality,  
18 have been modified in the Final EIS to correct an error that increased the changes  
19 in groundwater elevation by a factor of 3.25. This miscalculation was due to an  
20 error in a model post-processor that generates the figures related to changing the  
21 values from CVHM Model output from meters to feet. Therefore, the results in  
22 these figures and the related text in Chapter 7 are less than reported in the Draft  
23 EIS. The figures and the text have been revised in the Final EIS. No changes are  
24 required to the CVHM model.

25 The revised results in the figures and the text in Chapter 7 are consistent with the  
26 findings of the SWAP model.

27 **CSD 11:** The summary for winter-run Chinook Salmon effects under  
28 Alternatives 3 and 4 have been modified in Section 9.4 of Chapter 9, Fish and  
29 Aquatic Resources, in the Final EIS to provide additional details regarding the  
30 level of uncertainty associated with harvest restrictions. The modified text  
31 indicates that the harvest restrictions would likely benefit salmon.

32 **CSD 12:** As described in Appendix 9I, Onchorhynchus Bayesian Analysis  
33 (OBAN) Model Documentation, the analysis presents changes in Alternatives 3  
34 and 4 as compared to the No Action Alternative and Second Basis of Comparison,  
35 including changes related to harvest restrictions and Old and Middle River  
36 criteria.

37 **CSD 13:** A wide range of reference materials were evaluated in the preparation of  
38 the aquatic resource analysis in the EIS, as noted in Section 9.5 of Chapter 9, Fish  
39 and Aquatic Resources. The reference materials were used to develop the  
40 affected environment sections and to consider the results of the impact analyses.  
41 During preparation of the Final EIS, the references identified in the exhibit  
42 attached to the Coalition for a Sustainable letter dated July 13, 2015 were  
43 examined and included as appropriate, as described below.

- 1 • Numerous references to the Anderson et al. papers (cited as Independent  
2 Review Panel) were included in the Draft EIS (including pages 9-75 and 9-79  
3 regarding Delta smelt, pages 9-76 and 9-78 regarding fish passage and  
4 entrainment, and page 9-139 regarding the Pelagic Organism Decline.
- 5 • The Draft EIS already contains numerous references to Glibert (2010) and  
6 Glibert et al. (2011 and 2014). Note that the 2011 citation in the Draft EIS is  
7 the correct form of Glibert et al. (2012) in the list of references provided. The  
8 first Glibert et al. (2014) citation in the comment should be Glibert et al.  
9 (2013) and would add little to the discussion presented in the Draft EIS. The  
10 paper identified as Glibert et al. (2013) in the comment concerns modeling of  
11 plankton dynamics that was not conducted for the Draft EIS.
- 12 • The Manly et al. (2015) paper was included in the Draft EIS on page 9-64 in  
13 the Draft EIS and has been added to the discussion on page 9-115 and in  
14 Appendix 9G, Smelt Analysis.
- 15 • The life cycle models of Maunder and Deriso (2011) were identified in the  
16 Draft EIS on page 9-115 and numerous times in Appendix 9B, Aquatic  
17 Species Life History Accounts.
- 18 • Merz et al. (2011) is included in the list of studies on page 9-63 of the Draft  
19 EIS. Additional information from this reference was added to page 9B-126 in  
20 Appendix 9B. Longfin smelt distribution information from Merz et al. (2013)  
21 has been added to Sections 9B.11.2 and 9B.11.3 in Appendix 9B.
- 22 • Miller et al (2012) is included in the references for Delta smelt related to food  
23 webs on page 9-65 in the Draft EIS.
- 24 • The Murphy and Hamilton (2013) paper is included in the description of the  
25 Delta smelt distribution on page 9-63 and 9-64 of the Draft EIS. Murphy and  
26 Weiland (2011) concerns agency obligations during ESA consultation, and is  
27 not directly applicable to the analysis under NEPA. Similarly, Murphy et al.  
28 (2011) is a critique of the use of surrogate species when making management  
29 decisions and proposed actions during agency consultation and formulation of  
30 BOs by the management agencies and is not directly applicable to the NEPA  
31 analysis of alternatives in the Draft EIS. Murphy and Weiland (2014) also  
32 concerns the use of surrogates as proxies for the amount or extent of  
33 anticipated take, which again concerns ESA consultation and determination of  
34 jeopardy by the management agencies. The second Murphy and Weiland  
35 (2014) paper concerns the use of adaptive management which is outside the  
36 scope of the Draft EIS.
- 37 • The Weston et al. (2015) paper documents that certain insecticides are found  
38 in urban and agricultural creeks tributary to Suisun Marsh and that these  
39 compounds pose a risk of toxicity to aquatic organisms in the creeks, but not  
40 necessarily once diluted in the marsh. This type of impact could be important  
41 to Suisun Marsh conditions; however, it may not be discernable at the regional  
42 level analyzed in this EIS.

43 **CSD 14:** Comment noted.