

# AQUALLIANCE

DEFENDING NORTHERN CALIFORNIA WATERS

September 29, 2015

Ben Nelson, Natural Resources Specialist  
Bureau of Reclamation, Bay-Delta Office  
801 I Street, Suite 140  
Sacramento, CA 95814-2536  
[bcnelson@usbr.gov](mailto:bcnelson@usbr.gov)  
(916) 414-2439 fax

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.

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Long-Term Operation of the Central Valley Project and State Water Project* is seriously deficient and should be withdrawn.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

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

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:

- 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:

- *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*

## **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).

### 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

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>

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>

#### The Project Description Lacks Detail Necessary for Full Environmental Analysis.

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.

#### The Project Description does Not Include all Project Components.

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

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).

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.

#### 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.

#### 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.

#### 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).

---

<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 2009 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)

- 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 for the SLDMWA transfers. 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 af 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.

### The Over Allocation of Water Claims is not Disclosed

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>

## **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.



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>

- 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)

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)

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.

#### 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.

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

---

<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.

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 Souymaya 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

<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.

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

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.*

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.

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.

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

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.

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

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

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.

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.

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)

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.



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.

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

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

<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.

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.

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

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.*

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

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).

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.

### 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>

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

---

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.

### 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.

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

<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)

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.

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:

- 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 Corning 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-March 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>

## VI. Procedural Issues

- 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)

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.

Sincerely,



Barbara Vlamis, Executive Director  
 AquAlliance  
 P.O. Box 4024  
 Chico, CA 95927  
 (530) 895-9420  
[barbarav@aqualliance.net](mailto:barbarav@aqualliance.net)

---

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