

AQUALLIANCE

DEFENDING NORTHERN CALIFORNIA WATERS

July 29, 2014

BDCP Comments
Ryan Wulff, NMFS
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814
Via Email to: BDCP.Comments@noaa.gov

Subject: Comments on the Draft BDCP and Draft BDCP EIS/EIR

Dear Mr. Wulff:

AquAlliance represents groundwater dependent communities, farms, and ecosystems in the northern Sacramento Valley and foothills and submits the following comments and questions regarding the Draft Bay Delta Conservation Plan (“Draft Plan”) and the Draft BDCP EIS/EIR (“EIS/EIR”) (“Project”). The Draft Plan has been developed as a habitat conservation plan (“HCP”) pursuant to the federal Endangered Species Act and a natural community conservation plan (“NCCP”) pursuant to the California Natural Community Conservation Planning Act for the Sacramento–San Joaquin River Delta. The California Department of Water Resources (“DWR”), the US Bureau of Reclamation (“Bureau”) (“Agencies”) and many of their contractors¹ are the proponents of the Draft Plan. DWR acts as the lead agency for the purposes of the California Environmental Quality Act (“CEQA”) and the Bureau, the U.S. Fish and Wildlife Service, and the U.S. National Marine Fisheries Service serve as the lead agencies for the National Environmental Policy Act (“NEPA”).

AquAlliance supports the possibilities found in HCP and NCCP planning processes, but this effort has at its heart a perverse incentive: to drain as much water as possible from the Sacramento River Watershed and the Delta to continue some of the most destructive forms of desert agriculture, urban sprawl, and industrial extraction. The EIS/EIR attempts to disclose impacts as required by CEQA and NEPA, but simultaneously obfuscates many of the direct and indirect impacts. AquAlliance seeks to bring to light some of these hidden impacts and to highlight the absurdity of referring to the Twin Tunnels project, which creates the infrastructure to drain the Sacramento River Watershed and the Delta of essential fresh water, as “Conservation Measure 1.”

¹ “ The BDCP proponents include the following state and federal water contractors under either the SWP or CVP: Alameda County Flood Control and Water Conservation District, Zone 7; Kern County Water Agency; Metropolitan Water District of Southern California; San Luis & Delta-Mendota Water Authority; Santa Clara Valley Water District; and Westlands Water District. Additional water contractors may become BDCP proponents in the future through the BDCP process.” (EIR/EIS p. 1-1)

We incorporate by reference the comments submitted by our coalition of C-WIN, CSPA, and AquAlliance and the two comment letters submitted by the Environmental Water Caucus. We also submit the Project modeling analysis prepared for AquAlliance by Professor Kyran Mish. AquAlliance's previous comments on the Bureau's Environmental Assessments for the 2010/2011 Water Transfer Program, the 2013 Water Transfer Program, the 2014 Water Transfer Program, and scoping comments on the Bureau and San Luis Delta Mendota Water Authority's Ten-Year Water Transfer Plan are attached, as well. These four comment letters all pertain to water transfer programs that illustrate the history of Sacramento Valley water transfers to south of the Delta, contain valuable background and impact information for the area of origin, and present AquAlliance's opposition to the water transfers that will expand under BDCP.

Hydrology

1. **The EIS/EIR fails to adequately disclose the planned increase in water transfers from the Sacramento River Watershed to south of the Delta.**

If the Twin Tunnels (the facilities identified in "Conservation Measure 1") 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 Freeport² (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 State Water Project ("SWP") contractor allocations drop to 50 percent of Table A amounts or below or when Central Valley Project ("CVP") agricultural allocations are 40 percent or below, or when both projects' allocations are at or below these levels (EIS/EIR Chapter 5). With this Project, North to South water transfers will be in demand and feasible.

For an understanding of water transfers, it would be valuable to know how much is currently exported from the Delta. The EIS/EIR even fails at this task by explaining the current export regime from the Delta thusly, "Some water flowing through the Delta is exported by the SWP/CVP to areas outside the Delta (see Chapter 5, *Water Supply*)..." (p. 7-1) How is the reader to know that "some water" is an immense number on the order of 5-7 million acre-feet ("MAF")? It would be immensely helpful to the reader of a 40,000+ page document to have a better understanding of the magnitude of water being discussed with it presented openly and clearly at every opportunity, such as page one of Chapter seven.

The EIS/EIR also fails to reveal that the current Project is part of many more programs, plans and projects to develop groundwater 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. These are plans that the Bureau, together with DWR, water districts, and others have been pursuing and developing for many years.

² USGS 2009. <http://wdr.water.usgs.gov/wy2009/pdfs/11447650.2009.pdf>

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An environmental impact statement should consider “[c]onected actions.” 40 C.F.R. §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). The Bureau’s participation in planning, attempting to execute, and frequently executing the programs, plans and projects has circumvented the requirements of NEPA. DWR’s failure to conduct project level CEQA review for water transfers and comprehensive environmental review for the *Sacramento Valley Water Management Agreement* has segmented a known, programmatic project for decades, which means that the Bureau is also failing to comply with state law as the CVPIA mandates. A list of connected actions and similar actions is found in the Cumulative Impacts section below.

2. The EIS/EIR fails to adequately disclose the existing geology that is the foundation of the Sacramento River’s hydrology and the Sacramento Valley’s groundwater basins.

Page 7-1 fails to note a significant geographic feature in the Sacramento River hydrologic region: the Cascade Range. The Cascade Range is the genesis of the Sacramento River and some of its most significant tributaries: the Pit and the McCloud Rivers. This serious omission continues throughout Chapter 7. The enormous influence of the Cascade Mountain Range on not only the Sacramento River, but also the geology, soils, and hydrology of the Sacramento Valley’s ground water basin is completely missing. The California Department of Conservation describes the Range thusly: “The Cascade Range, a chain of volcanic cones, extends through Washington and Oregon into California. It is dominated by Mt. Shasta, a glacier-mantled volcanic cone, rising 14,162 feet above sea level. The southern termination is Lassen Peak, which last erupted in the early 1900s. The Cascade Range is transected by deep canyons of the Pit River. The river flows through the range between these two major volcanic cones, after winding across interior Modoc Plateau on its way to the Sacramento River.”³ The Sacramento River Watershed Program provides another simple, adequate description of its namesake: “The Sacramento River is the largest river and watershed system in California (by discharge, it is the second largest U.S. river draining into the Pacific, after the Columbia River). This 27,000–square mile basin drains the eastern slopes of the Coast Range, Mount Shasta, the western slopes of the southernmost region of the Cascades, and the northern portion of the Sierra Nevada. The Sacramento River carries 31% of the state’s total surface water runoff.”⁴

Without describing the structural attributes of the Sacramento Valley groundwater basin that supports the rivers, streams, communities, and orchards of the region, the EIS/EIR states that, “The Sacramento Valley *groundwater basin* is extremely productive and provides much of the water supply for California’s agricultural and urban water needs,” (page 7-2). [emphasis added] The EIS/EIR fails to disclose to what extent it is productive, what limitations exist to its

³ California Department of Conservation, California Geological Survey, 2002. *California Geomorphic Provinces*. [sic]

⁴ <http://www.sacriver.org/aboutwatershed/roadmap/sacramento-river-basin>

productivity, or how it provides so much water for the State when one considers that groundwater is usually used at a local level. These grandiose claims that lack supporting material lead AquAlliance to ask the following questions:

- Have the agencies conflated a watershed with a groundwater basin?
- Is this a Freudian slip that discloses the intent of the agencies to incorporate the Sacramento Valley groundwater basin into the State's water supply as presented in numerous plans and programs over two decades (see list in Cumulative Impacts)?
- If the lead agencies truly believe that the Sacramento Valley groundwater basin has been and is this important to California's agricultural and urban water needs, why has the EIS/EIR failed to identify it in Figures 7-3, *Groundwater Subbasins Underlying the Central Valley*, and 7-4, *Groundwater Model Domains in the Central Valley*, while both figures name the San Joaquin and Tulare basins?

The repeated absence of some of the most basic geologic, geographic and hydrologic information in the EIS/EIR on which the entire Project is dependent causes the reader to wonder what else has been ignored or purposely omitted in the document.

3. The EIS/EIR fails to disclose the over appropriation of water rights in the Sacramento River Watershed

The public is presented with inadequate baseline data with which to consider the consequences of the Project. One such area is the comparison of the average unimpaired flow of the Sacramento River Watershed stacked against the claims that have been made for water. 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

4. The EIS/EIR fails to disclose the existing conditions of the Sacramento Valley groundwater.

There is an absence of accurate and detailed information that describes the Sacramento Valley groundwater conditions. The EIS/EIR instead states, "A portion of this applied water, and the remaining 13.9 MAF of runoff, is potentially available to recharge the basin and replenish groundwater storage depleted by groundwater pumping. Therefore, except during drought, the Sacramento Valley groundwater basin is "full," and groundwater levels recover to pre-irrigation season levels each spring. Historical groundwater level hydrographs suggest that even after extended droughts, groundwater levels in this basin recovered to pre-drought levels within 1 or 2 years following the return of normal rainfall quantities." (p. 7-13)

The conclusory statements fail to provide decision-makers and the public with important factual data. For example, a summary of conditions in the Durham area of Butte County find that while water levels may recover after dry to drought periods with intense use, wells aren't returning to previous levels, but moving steadily in a downward trajectory.⁶ Additionally, even the Yuba River area, often touted by state and federal agencies as a successful conjunctive use program,

⁵ 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.*

⁶ Buck, Christina 2014. *Groundwater Conditions in Butte County.*

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takes 3-4 years to recover from groundwater substitution in the south sub-basin⁷ although the Yuba County Water Agency analysis fails to determine how much river water is sacrificed to achieve the multi-year recharge rate.

More examples that contradict long-term predictions of “full” and “recovered” groundwater basins are found in the most current DWR maps.⁸ Presented below are tables that illustrate maximum and average groundwater elevation decreases for Butte, Colusa, Glenn, and Tehama counties at three aquifer levels in the Sacramento Valley between the Fall of 2004 and 2013.

County Fall '04 - '13	Deep Wells (Max decrease gwe)	Deep Wells (Avg. decrease gwe)
Butte	-11.4	-8.8
Colusa	-31.2	-20.4
Glenn	-60.7	-37.7
Tehama	-19.5	-6.6

County Fall '04 - '13	Intermediate Wells (Max decrease gwe)	Intermediate Wells (Avg. decrease gwe)
Butte	-21.8	-6.5
Colusa	-39.1	-16.0
Glenn	-40.2	-14.5
Tehama	-20.1	-7.9

County Fall '04 - '13	Shallow Wells (Max decrease gwe)	Shallow Wells (Avg. decrease gwe)
Butte	-13.3	-3.2
Colusa	-20.9	-3.8
Glenn	-44.4	-8.1
Tehama	-15.7	-6.6

Below are the results from DWR’s spring monitoring for Sacramento Valley groundwater basin from 2004 to 2014.

County Spring '04 - '14	Deep Wells (Max decrease gwe)	Deep Wells (Avg. decrease gwe)
Butte	-20.8	-14.6
Colusa	-26.9	-12.6
Glenn	-49.4	-29.2
Tehama	-6.1	-5.3

⁷ 2012. *The Yuba Accord, GW Substitutions and the Yuba Basin*. Presentation to the Accord Technical Committee.

⁸ http://www.water.ca.gov/groundwater/data_and_monitoring/northern_region/GroundwaterLevel/gw_level_monitoring.cfm

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County Spring '04 - '14	Intermediate Wells (Max decrease gwe)	Intermediate Wells (Avg. decrease gwe)
Butte	-25.6	-12.8
Colusa	-49.9	-15.4
Glenn	-54.5	-21.7
Tehama	-16.2	-7.9

County Spring '04 - '14	Shallow Wells (Max decrease gwe)	Shallow Wells (Avg. decrease gwe)
Butte	-23.8	-7.6
Colusa	-25.3	-12.9
Glenn	-46.5	-12.6
Tehama	-38.6	-10.8

The DWR data clearly present a different picture of the condition of the Sacramento Valley groundwater basin over time than what is provided in the EIS/EIR. This must be corrected and considered in the NEPA and CEQA process.

5. The EIS/EIR fails to disclose direct and indirect groundwater impacts to the Sacramento Valley that would result from expanded cross-Delta water transfers

Internal BDCP communication from the Department of the Interior indicates that the purchase of approximately 1.3 MAF of water is being planned as a means to make up for flows that would be removed from the Sacramento River by the BDCP tunnels.⁹ As provided above, it is possible that the Twin Tunnels may extract almost two-thirds of the average annual flow from the Sacramento River, which is what creates the need for the 1.3 MAF. The source of the additional water that is integral to the Project is not disclosed or analyzed in the EIS/EIR. If Sacramento Valley groundwater is the intended target, this must be disclosed and analyzed in a re-circulated Draft EIS/EIR.

6. The EIS/EIR vastly understates the extent of groundwater depletion in the San Joaquin Valley.

In regards to the San Joaquin groundwater basin, the DEIS/DEIR states that, “Long-term groundwater production throughout this basin has lowered groundwater levels beyond what natural recharge can replenish.” (p. 7-4) It is no surprise that the relentless extraction of groundwater in the San Joaquin Valley has halted natural recharge, but this mild under-statement of fact masks the tremendous devastation that has occurred there. “Mining” would provide a more accurate depiction of what has transpired over 80+ years instead of “production.” The USGS exposes this form of groundwater exploitation in the San Joaquin and Santa Clara Valleys (1999) in Circular 1182 entitled Part I, “Mining Ground Water.” Current research by Michelle Sneed expands on the impacts from groundwater mining in the San Joaquin by disclosing the extent of historic and current subsidence levels.¹⁰

⁹ Belin, Lety Summary of Assurances Email, dated 2/25/13.

¹⁰ Sneed, Michelle et al. 2013. *Land Subsidence along the Delta-Mendota Canal in the Northern Part of the San Joaquin Valley, California*. <http://pubs.usgs.gov/sir/2013/5142/>

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Without explanation or apology, the EIS/EIR omits this current analysis, mentions “overall subsidence” in the Mendota area of 28 feet (without a citation or timeframe), and then recounts older research: “Most San Joaquin Valley subsidence is thought to have been caused primarily by deep aquifer system pumping during the 1950s and 1960s, but is considered to have largely abated since 1974 because of the development of more reliable agricultural surface water supplies from the Delta-Mendota Canal and Friant-Kern Canal (U.S. Geological Survey 1999).” The absence of current scientific research in the EIS/EIR regarding groundwater mining and subsidence leaves the document exceedingly deficient under CEQA and NEPA and the agencies exposed to charges of ineptitude.

Economics of the Draft Plan

The University of the Pacific Eberhardt School of Business concluded in 2012:

This report updates an initial benefit-cost analysis of the water conveyance tunnels at the center of the Bay Delta Conservation Plan (BDCP). Primarily using the results of the BDCP’s own economic benefit and cost studies, we find a benefit-cost ratios ranging from 0.3 to 0.5, meaning that there are between \$1.90 and \$3.36 of costs for every \$1 in economic benefits. To put this in perspective, this benefit-cost ratio is 80% lower than those estimated for the State’s high-speed rail project.

When these very low benefit-cost ratios are considered alongside the inconsistent and incomplete financial plans, it is clear that the Delta water conveyance tunnels proposed in the draft BDCP are not justified on an economic or financial basis.

How has the Project responded and adjusted to such a stinging rebuke by such a reputable source or has it been shunted aside as an illegitimate critique that is contrary to the outcome sought by the agencies?

Modeling

1. The EIS/EIR hinges on models and modeling that are seriously deficient.

The agencies had opportunities to advance both water and environmental planning once again through the Bay Delta Conservation Plan. Like a journeyman in any trade, the tools one has and the skills in using them are what distinguish a journeyman from an apprentice or an imposter. DWR and the Bureau have had ample feedback on the Draft Plan to know, as a journeyman should, that their toolbox is wanting and their use of the tools they selected is inadequate. Among all the areas where this proves to be the case (see referenced June 11, 2014 EWC comments), nowhere is it more glaring than in the model and modeling that are the foundation for the entire Project.

Kyran Mish, Ph.D., provides a succinct review of the Project model and modeling and finds serious deficiencies and concludes:

The technical risks associated with this ambitious project, and the immense budget required for its construction and operation, clearly mandate that the best-

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available scientific principles be deployed and documented in all project artifacts, including the Draft EIS/EIR. It is technically indefensible that these principles (including all fundamental physical assumptions) are not readily available in the tens of thousands of pages of the Draft EIS/EIR, and the omission of the particulars of the science used to estimate these environmental effects precludes both accurate prediction of the environmental effects of this project, as well as independent technical verification of the claims made in the plan. Since independent verification is a fundamental hallmark of scientific investigation, the current version of the BDCP Draft EIS/EIR fails even this most basic test of science.

He continues his review with concerns regarding seismic risks, liquefaction, and the model, CalSim II:

- “The plan promises that seismic risks will be addressed during the design and construction phases of the project, but also explicitly admits that no substantial efforts toward accurate identification of seismic risks yet exist within the plan’s scope. Thus the costs of mitigating these risks is unknown from the outset, and any estimate of project cost must thus be considered to be a substantial underestimate of actual project lifespan costs.”
- “One of the worst cases of poor risk assessment in seismic sections of the report is the discussion of possible liquefaction effects. After a good introductory discussion of the natural phenomenon of liquefaction, the Draft EIS/EIR provides little in the way of realistic mitigation plans to handle the very-real risk that liquefaction could destroy the project once it is built (or even damage components of the system during construction).”
- “In the interest of simplicity, only a few key concerns about the suitability of the current version of CalSim will be presented here, but these should be sufficient to indicate that CalSim II does not yet warrant sufficient trust to justify its use for analysis of the alternatives that lie at the heart the water-transfer plan.”

AquAlliance includes Dr. Mish’s entire analysis of the Project model and modeling with our comments.

Cumulative Impacts

The Ninth Circuit has made 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). Indeed, “[d]etail is required in describing the cumulative effects of a proposed action with other proposed actions.” *Id.* The very cursory cumulative effects discussion contained in the EIS/EIR regarding groundwater plainly fails to meet this standard.

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).

As discussed above, the Project is dependent on the hydrology of the Delta watershed to implement the Draft Plan. The EIS/EIR blatantly fails to consider other past, present and reasonably foreseeable future actions in the Delta watersheds by deferring analysis to a future day. To illustrate the omissions in the EIS/EIR, AquAlliance submits a partial list of Sacramento River Watershed programs, plans, and projects in which the agencies have participated or funded, that, at a minimum, should have been presented in the EIS/EIR for cumulative impact discussion, and better yet, analyzed to comply with CEQA and NEPA:

- The *Sacramento Valley Water Management Agreement* was signed in 2002 and the need for a programmatic EIS/EIR was clear to both the Bureau and DWR. The process was initiated, but never completed.¹¹ Indeed, even the short-term phase of the Sacramento Valley Water Management Program is the subject of an ongoing scoping process for a Programmatic EIS that has not yet been completed (*id.*)
- The *Sacramento Valley Integrated Regional Water Management Plan* (2006).
- The *Sacramento Valley Water Management Plan*. (2007)
- The Stony Creek Fan Partnership Orland Project Regulating Reservoir Feasibility Investigation.
- The Glenn Colusa Irrigation District (“GCID”) *Stony Creek Fan Aquifer Performance Testing Plan* to install seven production wells in 2009 that extracted 26,530 AF of groundwater as an experiment.
- GCID’s Lower Tuscan Conjunctive Water Management Program (Bureau provided funding).
- GCID’s water transfers in 2008 and in 2010, 2013, and 2014.
- The Drought Water Bank for 2009.
- The Bureau of Reclamation’s 2010/2011 Water Transfer Program of 395,910 af of CVP and non-CVP water with 154,237 AF of groundwater substitution (EA/FONSI p. 2-4 and 3-107).
- The Bureau’s planned 2012 water transfers of 76,000 af of CVP water all through ground water substitution.
- The Bureau’s 2013 Water Transfer Program
- The Bureau and San Luis Delta Mendota’s 2014 Water Transfer Program.
- The Bureau of Reclamation’s 600,000 AF, North-to-South Water Transfer Program. EIS/EIR pending since scoping in January 2011.

¹¹ *The Bureau actually began its own 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 has impermissibly broken out segments of the overall Program for piecemeal review for water transfers for GCID’s 2008 Forbearance Transfer, the 2009 Drought Water Bank, 2010/2011, 2012, 2013, and 2014.. See 68 Federal Register 46218 (Aug 5, 2003) (promising a Programmatic EIS on these related activities, “includ[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 (current Bureau website on “Short-term Sacramento Valley Water Management Program EIS/EIR”).*

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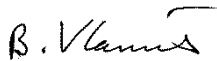
The Bureau Has Failed to Consider the Cumulative Impact of Other Groundwater Development and Surface Water Diversions Affecting the Sacramento Valley

In addition to the improper segmentation evident in the draft EIS/EIR, the assessment of environmental impacts is further deficient because the Bureau has failed to consider the cumulative impacts of the planned groundwater extraction when taken in conjunction with other projects proposed for the development of groundwater and surface water. The General Plans of the counties and cities in the Sacramento Valley must be considered as well as the agricultural crop and land use changes that have taken and are taking place. Lastly, we must emphasize again that existing conditions in the Sacramento River Watershed, that is so crucial to California's population, economy, and environment, and therefore the Project, must be more accurately understood and described, so that impacts may be more accurately assessed from the Project.

Conclusion

The Draft EIS/EIR is seriously deficient as noted here, in the coalition comments of C-WIN, CSPA, and AquAlliance, the CSPA comments, and the EWC comments. AquAlliance requests that you incorporate these comments into a new and re-circulated Draft EIS/EIR.

Sincerely,



Barbara Vlamis
AquAlliance's Executive Director