

AQUALLIANCE

DEFENDING NORTHERN CALIFORNIA WATERS

May 21, 2013

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Subject: Comments on the Draft Environmental Assessment and Findings of No Significant Impact for the 2013 Water Transfer Program and the 2010-2011 Water Transfer Program

Dear Messrs. Hubbard and Messer:

AquAlliance submits the following comments and questions for the Draft Environmental Assessment (“EA”) and Findings of No Significant Impact (“FONSI”), for the *2013 Water Transfer Program* (“Project”). We also provide comments about the purpose and need for the 2013 state and federal water transfer programs that are mirror images of the *2009 Drought Water Bank* and the *2010/2011 Water Transfer Program*.

The Bureau of Reclamation’s draft environmental review of the Project does not comply with the requirements of National Environmental Policy Act (“NEPA”), 42 U.S.C. §4321 *et seq.* First, we believe that the Bureau needs to prepare an environmental impact statement (“EIS”) on this proposal, as we believed for the *2009 Drought Water Bank* (“DWB”) that allowed up to 600,000 acre-feet (AF) of surface water transfers, up to 340,000 AF of groundwater substitution, and significant crop idling. It also mirrors the *2010-2011 Water Transfer Program* that sought approval for 200,000 AF of CVP related water and assumed NEPA coverage for additional non-CVP transfer water up to 195,910 AF.

Bureau reliance on the EA itself violates NEPA requirements because, among other things, the EA fails to provide a reasoned analysis and explanation to support the Bureau’s proposed finding of no significant impact. The EA contains a fundamentally flawed alternatives analysis, and treatment of the chain of cause and effect extending from project implementation leading to inadequate analyses of nearly every resource, growth inducing impacts, and cumulative impacts. An EIS would afford the Bureau, DWR, the State Water Resources Control Board, and the California public far clearer insight into how, where, and why the Project might or might not be needed. Litigation by AquAlliance and partners challenged the *2010-2011 Water Transfer Program* and appeared to prod the Bureau toward the necessary environmental review for their

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multi-year, serial, so-called “temporary” water transfers with the scoping meetings that were held in January 2011 for the *Long-Term North to South Water Transfer Program* (“10-Year Plan”) (<http://www.usbr.gov/mp/cvp/lwtw/>). The 10-Year Plan’s proposal to transfer up to 600,000 AF of river water has stalled despite Bureau optimism that an EIS would be available in the fall of 2011 and again in the fall of 2012. Absent serious and comprehensive NEPA and California Environmental Quality Act (“CEQA”) review, the Bureau offers another EA/FONSI here, which again fails to provide adequate disclosure of impacts.

Second, CEQA analysis of the 2013 Water Transfer Program is completely absent at the programmatic level. The Project’s actual environmental effects—which are similar to the 2009 DWB, the Sacramento Valley Water Management Agreement, and the proposed 1994 Drought Water Bank (for which a final Program Environmental Impact Report was completed in November 1993) – are not presented in any document. The Bureau and DWR have known for over a decade that programmatic environmental review was and is necessary. The following examples highlight the Bureau and DWR’s (“Agencies”) deficiencies in complying with NEPA and CEQA.

- The Sacramento Valley Water Management Agreement was signed in 2002 and the need for a programmatic EIS/EIR was clear at that time it was initiated, but never completed.
- In 2000, the Governor’s Advisory Drought Planning Panel report, *Critical Water Shortage Contingency Plan* promised a program EIR on a drought-response water transfer program, but was never undertaken.
- Twice in recent history, the state readily acknowledged that CEQA review for a major drought water banking program was appropriate.
- Last, but not least, is the attempt of the Bureau and San Luis Delta Mendota Water Authority to analyze the 10-Year Plan, which also has failed to materialize.

The Bureau’s failure to conduct scientifically supported environmental review in an EIS and DWR’s negligence to provide *any* form of CEQA review reflects an end-run around established law through the use of so-called “temporary” water transfers, in multiple years and is therefore vulnerable to legal challenge under NEPA and CEQA.

Finally, we also question the merits of and need for the Project itself. The existence of very dry conditions in California should not surprise the Agencies or require an urgent and “temporary” response once again. The existence of this water transfer program reflects the Agencies’ abandonment of a sensible water policy framework. Our organizations believe the Bureau’s EA/FONSI and the absence of programmatic CEQA review go too far to help a few junior water right holders at the expense of agriculture, communities, and the environment in and north of the Delta. The *2013 Water Transfer Program* will directly benefit the areas of California whose water supplies are the least reliable by operation of state water law and climate. Though their unreliable supplies have long been public knowledge, local, state, and federal agencies in these areas have failed to stop blatantly wasteful and irrational uses and diversions of water and to pursue aggressive planning for regional water self-sufficiency.

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The proposed Project will have significant effects on the environment—both standing alone, as serial, so-called “temporary” water transfers, and when reviewed in conjunction with the multitude of other plans and programs (including the non-CVP water that is mentioned in the EA cumulative impacts section) that incorporate and are dependent on Sacramento Valley water. Ironically, the Bureau appears to recognize in its cumulative impacts discussion that there is potential for significant adverse impacts associated with the Project, but instead of conducting an EIS as required, attempts to assure the public that the *2013 Water Transfer Program* will be deferred to the “willing sellers” through individual “monitoring and mitigation programs” as well as through constraining actions taken by both DWR and Bureau professional staff whose criteria ought instead be incorporated into the Proposed Action Alternative (EA at p. 6, FONSI at pp. 1-4). It is impossible to evaluate whether or not the mitigation and monitoring plans will be adequate to relieve the Bureau and DWR of responsibility for impacts from the Project (including the non-CVP water transfers). The language used in the EA (pp.12-14, 25-27) and the *Draft Technical Information for Water Transfers in 2013* (February 2013) (pp. 39-45) fails to pass the blush test (details below). Of course, this is not a permissible approach under NEPA; significant adverse impacts should be mitigated—or avoided altogether as CEQA normally requires.¹ Moreover, in light of the wholly inadequate monitoring and mitigation planned for the 2013 Water Transfer Program’s extensive water sales, the suggestion that the public should be required to depend on the insufficient monitoring to provide the necessary advance notice of “significant adverse impacts” is an unacceptable position.

We incorporate by reference the following documents:

- AquAlliance, California Sportfishing Protection Alliance, and California Water Impact Network *Testimony on Water Availability Analysis for Trinity, Sacramento, and San Joaquin River Basins Tributary to the Bay--Delta Estuary*. 2012.
- AquAlliance comments on the *Draft Environmental Assessment/Initial Study and Finding of No Significant Impact/Mitigated Negative Declaration for the Anderson-Cottonwood Irrigation District Integrated Regional Water Management Program – Groundwater Production Element Project*. 2011.
- AquAlliance scoping comments for the 10-Year Plan. 2011.
- AquAlliance et. al comments on the *2010/2011 Water Transfer Program*. 2010.
- Jim Brobeck’s comment letter for Butte Environmental Council on the Supplemental Environmental Water Account EIR/EIR, 2007.

¹ Perhaps even more telling, 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 now has impermissibly broken out this current segment of the overall Program for piecemeal review in the present draft EA. 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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- Lippe Gaffney Wagner LLP letter for Butte Environmental Council to DWR regarding the Drought Water Bank Addendum, 2009.
- Barbara Vlamis' letter for Butte Environmental Council to DWR regarding the 2009 Drought Water Bank Addendum.
- Multi-Signatories letter regarding the Drought Water Bank, 2008.
- Professor Kyran Mish's White Paper, 2008.
- Professor Karin Hoover's Declaration, 2008.

**I. The Bureau and DWR Must Prepare an Environmental Impact Statement/
 Environmental Impact Report on the Proposed 2013 Water Transfer Program**

We strongly urge the Bureau to withdraw this inadequate environmental document and instead prepare a joint EIS/R on the *2013 Water Transfer Program*, before approaching the State Water Resources Control Board (SWRCB) for a change in place of use, in order to comply with both NEPA and CEQA requirements for full disclosure of human and natural environmental effects. NEPA requires federal agencies to prepare a detailed environmental impact statement on all "major Federal actions significantly affecting the quality of the human environment . . ." 42 U.S.C. §4332(2)(C). This requirement is to ensure that detailed information concerning potential environmental impacts is made available to agency decision makers and the public before the agency makes a decision. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). CEQA has similar requirements and criteria.

Under NEPA's procedures, an agency may prepare an EA in order to decide whether the environmental impacts of a proposed agency action are significant enough to warrant preparation of an EIS. 40 C.F.R. §1508.9. An EA must "provide sufficient evidence and analysis for determining whether to prepare an [EIS]" (*id.*), and must demonstrate that it has taken a "'hard look' at the potential environmental impact of a project." *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998) (internal quotation marks omitted). However, the U.S. Court of Appeals for the Ninth Circuit has cautioned that "[i]f an agency decides not to prepare an EIS, it must supply a convincing statement of reasons to explain why a project's impacts are insignificant." *Id.* (internal quotation marks omitted). The Bureau has not provided a convincing statement of reasons that would explain why the Projects's impacts are not significant. So long as there are "substantial questions whether a project *may* have a significant effect on the environment," an EIS must be prepared. *Id.* (emphasis added and internal quotation marks omitted). Thus, "the threshold for requiring an EIS is quite low." *NRDC v. Duvall*, 777 F. Supp. 1533, 1538 (E.D. Cal. 1991). Put another way, as will be shown through our comments, the bar for sustaining an EA/FONSI under NEPA procedures is set quite high, and the Bureau fails to surmount it in the *2013 Water Transfer Program*.

NEPA regulations promulgated by the Council on Environmental Quality identify factors that the Bureau must consider in assessing whether a project may have significant environmental effects, including:

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- (1) “The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.” 40 C.F.R. §1508.27(b)(5).
- (2) “The degree to which the effects on the quality of the human environment are likely to be highly controversial.” *Id.* §1508.27(b)(4).
- (3) “Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate on a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.” *Id.* §1508.27(b)(7).
- (4) “The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.” *Id.* §1508.27(b)(6).
- (5) “The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.” *Id.* §1508.27(b)(9).

Here, the Bureau has failed to take a hard look at the environmental impacts of the Project. As detailed below, there are substantial questions about whether the *2013 Water Transfer Program’s* proposed water transfers will have significant effects on the region’s environmental and hydrological conditions, especially groundwater; the interactions between groundwater and surface streams of interest in the Sacramento Valley region; and the species dependent on aquatic and terrestrial habitat. There are also substantial questions about whether the *2013 Water Transfer Program* will have significant adverse environmental impacts when considered in conjunction with the other related water projects that have occurred in the last dozen years and that are underway and proposed in the region. The Bureau simply cannot rely on the EA/FONSI for the foreseeable environmental impacts of the proposed *2013 Water Transfer Program* and still comply with NEPA’s requirements.

A. The Proposed Action Alternative is poorly specified, making it difficult to identify chains of cause and effect necessary to analyze adequately the alternative’s environmental effects.

The Proposed Action Alternative is poorly specified and needs additional clarity before decision makers and the public can understand the human and environmental consequences of the *2013 Water Transfer Program*. The EA describes the Proposed Action Alternative as one reflecting the Bureau’s intention to approve transfers of Central Valley Project water from willing sellers who contract with the Bureau ordinarily to use surface water on their croplands. Up to 37,505 AF of CVP water are offered from these sellers, according to Table 2-1 (EA p. 9). In contrast to the EA/FONSI for the 2009 Drought Water Bank (p. 3-88), the Project EA contains no “priority criteria” to determine water deliveries and simply acknowledges that CVP river water will be transferred to San Luis & Delta Mendota Water Authority agricultural districts. The EA fails to indicate how much water has been requested by the buyers of CVP or non-CVP water, which is also in contrast to the EA/FONSI and DWR’s addendum for the 2009 Drought Water Bank.

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Potential buyers of non-CVP water are also not disclosed. These significant omissions eliminate the public's ability to consider, assess, and comment on possible impacts in the receiving areas. This denial of information further obfuscates the need for the Project.

The EA/FONSI's Background section (p. 3) states specifically that, "To facilitate the transfer of water within the State of California, Reclamation is considering whether to approve individual water transfers between willing sellers and buyers when Base Supply, Project Water or Project facilities are involved in the transfer." This paragraph omits mentioning DWR's role as an approving agency for SWP water sales while acknowledging its role in potentially wheeling both CVP and SWP river water. This failure to elucidate DWR's authority adds further confusion to a poorly defined project.

Another serious omission is that the EA/FONSI lacks a section that names and explains the purpose of the Project. AquAlliance agrees with the Bureau's *Reclamation's NEPA Handbook* (2012) that states, "The need for an accurate (and adequate) purpose and need statement early in the NEPA process cannot be overstated. This statement gives direction to the entire process and ensures alternatives are designed to address project goals." (p.11-1) While "need" is disclosed in section 1.2 (p. 4), there is no coherent discussion of the need. Merely stating that, "The hydrologic condition for 2013 is dry, and because the CVP and SWP are providing 20% and 35% of contract amounts, respectively, to contractors south of the Delta, there is a need for water to supplement local and imported supplies to meet demands," lacks context, specificity, and rigor. The purpose and need should also state that this transfer program would be subject to specific criteria for prioritizing transfers. The absence of a statement of purpose and the inadequate need statement renders the EA/FONSI wholly deficient.

The EA's description of the proposed action alternative needs to make clear what would occur if sale criteria are in fact applied and if exceptions will be allowed, and, if so, by what criteria would exceptions be made.. Do both Project Agencies, the Bureau and DWR, lack criteria to prioritize water transfers? What is the legal or policy basis to act without providing priority criteria? Without foundational criteria, the public is not provided with even a basic understanding of the need for the Project.

There is considerable ambiguity over just how many potential sellers there are and how much water they would make available. The EA states that, "Entities that are not listed in this table [2-1] may decide that they are interested in selling water, but those transfers would require supplemental NEPA analysis," (p. 9). Allowing a roving Project location is not permissible and avoids accurate analysis of all impacts including growth inducing and cumulative impacts.

Absent the names of buyers, buyers' request numbers, and the potential for the participation of unknown additional sellers, the EA signals that neither the Bureau nor DWR have a clear idea what the *2013 Water Transfer Program* is intended to be. This problem contributes greatly to and helps explain the poorly rendered treatment of causes and effects that permeate the Bureau's EA. The Project Agencies present decision-makers and the public with an ill-defined Project,

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purpose, and need: they are moving targets. Such chaos and blunders reflect hasty consideration and poor planning by project proponents. Nor can the Agencies reasonably attribute their inadequate or absent environmental reviews on lack of warning. The Agencies know better than anyone that California has a Mediterranean climate with major fluctuations in precipitation and has long periods of drought (Anderson, 2009).

From data available in the EA/FONSI, it is not possible to determine with confidence just how much water is requested by potential urban and agricultural buyers. There is no attempt to describe how firmly tendered are offers of water to sell or requests to purchase. Left to guess at the possible requests for water, we look at the 2009 DWB where there were between 400,000 and 500,000 AF of presumably urban buyer requests alone (which had priority over agricultural purchases, according to the 2009 DWB priorities) and a cumulative total of less than 400,000 AF from willing sellers. It is highly possible, based on the example during the 2009 DWB, that many buyers are not likely to have their needs addressed by the *2013 Water Transfer Program*. If so, the Bureau and DWR should state the likelihood that many requests will not be fulfilled in order to achieve a full and correct environmental compliance treatment of the proposed action. Such an estimate is necessary for accurate explication of the chains of cause and effect associated with the *2013 Water Transfer Program*—and which must propagate throughout a NEPA document for it to be adequate as an analysis of potential natural and human environmental effects of the proposed project. We have additional specific questions:

- Are the San Luis and Delta Mendota Water Authority (SLDMWA) requests for agricultural or urban use of Project water?
- What are the specific urban requests for water nested within the SLDMWA request?
- Who are the buyers and what are their requests for the non-CVP river water?
- Will sale criteria be premised on full compliance with all applicable environmental and water rights laws? If so, how will cumulative impacts be analyzed under CEQA?

If priority criteria were actually revealed in the EA/FONSI, how would intervening economic factors beyond the control of the Project be analyzed? Given the added uncertainty, an EIS should be prepared to provide the Agencies with advance information and insight into what the sensitivity of the program's sellers and buyers are to the influences of prices—prices for water as well as crops such as rice, orchard and vineyard commodities, and other field crops. It is plausible that crop idling occurs more in field crops, while groundwater substitution would be more likely for orchard and vineyard crops. However, high prices for rice—the Sacramento Valley's largest field crop—undermines this logic and have lead to substantial groundwater substitution. These potential issues and impacts should be recognized as part of the *2013 Water Transfer Program* description and should directly apply to the Agriculture and Land Use, and Socioeconomic sections of the EA, because crop prices are key factors in choices potential water sellers would weigh in deciding whether to idle crops, substitute groundwater, or decline to participate in the Project altogether. The EA is inadequate because it fails to identify and analyze the market context for crops as well as water that would ultimately influence the size and scope of the *2013 Water Transfer Program*.

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Rice prices are high because of conditions for the grain in the world market. Drought elsewhere is a factor in reduced yields, but growing populations in south and east Asia demand more rice; the rice industry has gladly tried to meet that demand.²

This is very important. The Bureau tacitly admits that the Bureau—and by logical extension, DWR—has no idea how many sales of what type (public health, urban, agricultural) can be expected to occur. Put another way, there is a range of potential outcomes for the *2013 Water Transfer Program*, and yet the Bureau has failed utterly to use the EA to examine a reasonable and representative range of alternatives as it concerns how the priority criteria would be established and affect Project transfers. And DWR has not bothered to conduct an appropriate level of review under CEQA.

Nor does the *2013 Water Transfer Program* prevent rice growers (or other farmers) from “double-dipping,” but actually encourages it. Districts and their growers have opted to turn back their surface supplies from the CVP and the State Water Project and substitute groundwater to cultivate their rice crop—thereby receiving premiums on both their CVP contract surface water as well as their rice crop this fall when it goes to market. There appear to be no caps on water sale prices to prevent windfall profits to sellers of Sacramento Valley water — especially for crops with high market prices, such as in rice.

As stated, neither the Bureau nor DWR disclose what quantity of water from the transfers would go to public health, urban, or agricultural buyers. The EA must also (but fails to) address the ability and willingness of potential buyers to pay for Project water given the supplies that may be available. Complaints from agricultural water districts were registered in the comments on the Draft EWA EIS/R and reported in the Final EIS/R in January 2004 indicating that they could not compete on price with urban areas buying water from the EWA. Given the absence of priority criteria, will agricultural water buyers identified in Table 2-2 of the EA be able to buy water when competing with urban districts? Since buyers are not disclosed in the EA for non-CVP river water (as they also were not, for example, in the Negative Declaration for Butte Water District’s 2013 non-CVP river water sales), not only is there a significant lack of disclosure, but the failure to access ramifications on economic policy and competition between and agricultural sectors is a serious omission? What factors other than price should be considered in allocating water among our state’s regions? This fails dramatically to encourage regions to develop their own water supplies more efficiently and cost-effectively without damage to resources of other regions.

Full disclosure of each offer of and request for *2013 Water Transfer Program* water should be provided as part of the EA including non-CVP river water. This is necessary so the public can understand and have confidence in the efficacy of the Project’s need, although the Project

² “Panic over rice prices hits California,” *AZCentral.com*, April 24, 2008; UN News Service, “Bumper rice harvests could bring down prices but poor may not benefit, warns UN,” 25 February 2009; “Era of cheap rice at an end in Taiwan: COA,” *The China Post*, March 5, 2009; Jim Downing, “Sacramento Valley growers see rice prices soar,” *Sacramento Bee*, 18 January 2009.

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purpose, as discussed above, is completely absent. The public benefits from full disclosure of who requests what quantity of water, and for what uses, so that the public may easily verify chains of cause and effect. Agricultural and urban application of transferred surface water is not examined in the EA/FONSI, as though the ways potential buyers would use their purchased water had no environmental effects. Agriculture hardens demand by expansion and crop type and urban users harden demand by expansion. Both sectors may fail to pursue aggressive conservation and grapple with long-term hydrologic constraints with the delivery of more northern California river water that has been made available by groundwater mining. Since California has high variability in precipitation year-to-year (<http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST>), how will purchased water be used and conserved? What growth inducing impacts will such transferred water facilitate and how will hardening of demand be evaluated?

Nor is a hierarchy of priority uses among agricultural or urban users for purchasing CVP and non-CVP water presented. Could purchased water be used for any kind of crop or landscaping, rather than clearly domestic purposes or strictly for drought-tolerant landscaping? We cannot tell from the EA/FONSI narrative. How can the citizens of California be assured that water purchased through the *2013 Water Transfer Program* will not be used wastefully, in violation of the California Constitution, Article X, Section 2?

If urban buyers are participating in the CVP and/or non-CVP river water sales, and the public has not been presented with any information in this regard except that, “[u]rban water users would face shortages in the absence of water transfers” in the No Action discussion, (pp. 6 and 27), will they need their Project purchased water only in July through September, or is that the delivery period preferred in the Project because of ecological and fishery impact constraints on conveyance of purchased water?

Should agricultural water users be able to buy Project water, how will DWR and the Bureau assure that transferred water for irrigation is used efficiently? Many questions are embedded within these concerns that DWR and the Bureau should address, especially when they approach the State Water Resources Control Board to justify consolidating their places of use in their respective water rights permits:

- How much can be expected to be purchased by agricultural water users, given the absence of any criteria, let alone priority criteria, in the *2013 Water Transfer Program*?
- How much can be expected to be consumptively used by agricultural water buyers?
- How much can be expected to result in tailwater and ag drainage?
- How much can be expected to add to the already high water table in the western San Joaquin Valley?
- What selenium and boron loads in Mud Slough and other tributaries to the San Joaquin River may be expected from application of this water to WSJ lands?
- What mitigation measures are needed to limit such impacts consistent with the public trust doctrine, Article X, Section 2 of the California Constitution, the Porter-Cologne Water Quality Control Act, and California Fish and Game Code Section 5937?

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In other words, the most important chains of cause and effect— from the potential for groundwater resource impacts in the Sacramento Valley to the potential for contaminated drainage water from farm lands in the western San Joaquin Valley where many of the agricultural buyers are located—are ignored in the Bureau’s EA/FONSI and completely missing due to DWR’s failure to comply with CEQA.

Will more of river water transfers go to urban users than to ag users or not? The EA’s silence on this is disturbing, and it highlights the absence of priority criteria. What assurances will the Bureau and DWR provide that criteria exist or will be developed and how will these criteria be presented to the public and closely followed?

- The more transfers to urban water agencies, the less environmental impacts there would be on drainage-impaired lands of the San Joaquin Valley, a neutral to beneficial impact of the Project’s operation on high groundwater and drainage to the SJR.
- However, the more Project water goes to agricultural users than to urban users, the higher would be groundwater levels, the more contaminated the groundwater would be in the western San Joaquin Valley and the more the San Joaquin River would be negatively affected from contaminated seepage and tailwater by operation of the Project.

We are pleased that the EA provides a map indicating where the CVP sellers and buyers are located, but the cumulative buyers and sellers in 2013, which includes non-CVP river water and groundwater substitution, are omitted. This is a major error.

Two issues concerning water rights are raised by this EA/FONSI:

- **Consolidated Place of Use.** The EA should fully disclose the consolidated places of use for DWR and the Bureau. Why is the flexibility claimed for the consolidated place of use necessary for this year’s water transfer program? Could the transfers be facilitated through transfer provisions of the Central Valley Project Improvement Act? Will the consolidation be a permanent or temporary request, and will the consolidation be limited to the duration of just the *2013 Water Transfer Program*? Is there an actual sunset date to this Project, since it continues serially in multiple years and plans a 10-Year Program? How do the consolidated places of use permit amendments to the SWP and CVP permits relate to their joint point of diversion? Why doesn’t simply having the joint point of diversion in place under D-1641 suffice for the purpose of the Project?
- **Description of the water right claims of sellers, buyers, the Bureau, and DWR.** 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 right claims and their priority is needed to help explain the actions and motivations of buyers and sellers in the *2013 Water Transfer Program*. Otherwise the public and decision makers have insufficient information on which to support and make informed choices. We notice that a modicum of discussion is found in the *Draft Technical Information for Water Transfers in 2013*, but the EA/FONSI fails to take the opportunity to point the reader to it.

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To establish a proper legal context for these water rights, the Project’s Action Alternative section of the EA/FONSI should also describe more extensively the applicable California Water Code sections about the treatment of water rights involved in water transfers.

Thus, in many ways, the *2013 Water Transfer Program* is a poorly specified program for NEPA and CEQA purposes, leaving assessment of its environmental effects at best murky, and at worst, risky to all involved, especially users of Sacramento Valley groundwater resources. “Clearly, it is pointless to ‘consider’ environmental costs without also seriously considering action to avoid them.” *Calvert Cliffs’ Coordinating Comm., Inc. v. U.S. Atomic Energy Commn.*, 449 F.2d 1109, 1128 (D.C. Cir. 1971). It is thus the Bureau’s duty to consider “alternatives to the proposed action” and to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. §§ 4332(2)(C)(iii), 4332(2)(E); 40 C.F.R. § 1502.14(a).

B. Correcting the EA’s poorly specified chains of cause and effect forces consideration of an expanded range of alternatives.

Bureau and DWR water transfers are not just one- or two-year transfers, but rather many serial actions in multiple years by the Agencies, sellers, and buyers without the benefit of comprehensive planning or environmental analysis under NEPA and CEQA. The Agencies have been implementing so called “temporary” or “short term” water transfers over a dozen years and has had those same years to adequately consider the ramifications of these serial actions in multiple years in an EIS/EIR, yet the Agencies have chosen not to complete the task. See table below³.

Past Water Transfers from the Sacramento Valley Through the Delta TAF Annually												
Program	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Potential 2012
DWR Drought Water Bank/Dry yr. Programs	138	22	11	0.5	0	0	0	0	74	0	0	0
Environ. Water Acct	80	145	70	120	5	0	147	60	60	60	0	60
Others (CVP, SWP, Yuba, inter alia)	160	5	125	0	0	0	0	173	140	243	0	190
Totals	378	172	206	120.5	5	0	147	233	274	303	0	250

*Table reflects gross AF purchased prior to 2percent Delta carriage loss (i.e., actual amounts pumped at Delta are 20 percent less)

³ This table is derived from the Western Canal Water District’s Negative Declaration for a 2012 water transfer.

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Adequate treatment of alternatives should have been examined in the EA with several reasonable scenarios beyond simply the Proposed Action and a “no action” alternative. Three reasonable permutations would have considered relative proportions of crop idling versus groundwater substitution (e.g., high/low, low/high, and equal proportions of crop-idled water and groundwater substitution). Other reasonable dry-year response alternatives that can meet operational and physical concerns merit consideration and analysis by the Bureau includes:

- Planned permanent retirement of upslope lands in the western San Joaquin Valley where CVP-delivered irrigation water is applied to lands contaminated with high concentrations of selenium, boron and mercury, and which contribute to high water table and drainage problems for lowland farmers, wetlands and tributaries of the San Joaquin River. Retirement of these lands would permanently free up an estimated 3.9 MAF⁴ of state and federal water during non-critical water years. Ending irrigation of these lands would also result in substantial human environmental benefits for the San Joaquin River, the Bay-Delta Estuary, and the Suisun Marsh from removal of selenium, boron, and salt contamination. Having such reasonable and pragmatic practices in place would go a long way to eliminate the need for drought water banks in the foreseeable future.
- More aggressive investment in agricultural and urban water conservation and demand management among CVP and SWP contractors even on good agricultural lands, including metering of all water supply hook-ups by all municipal contractors, statewide investment in low-flush toilets and other household and other buildings’ plumbing fixtures, and increased capture and reuse of recycled water. Jobs created from such savings and investments would represent an economic stimulus that would have lasting employment and community stability benefits as well as lasting benefits for water supply reliability and environmental stabilization.

C. The 2013 Water Transfer Program EA fails to specify adequate environmental baselines, or existing conditions, against which impacts would be assessed and mitigation measures designed to reduce or avoid impacts.

The Project’s EA/FONSI incorporates by reference the *2010/2011 Water Transfer Program* (pp. 11-13). The Project EA narrative discloses that no water was transferred under the *2010/2011 Water Transfer Program* (p. 13), but fails to mention that litigation was filed in 2010 by AquAlliance, CSPA, and C-WIN challenging the adequacy of the NEPA review.

The Bureau’s *2010/2011 Water Transfer Program* environmental review incorporated by reference, for specific facets of the review, the 2003/2004 and 2007/2008 Environmental Water Account EIS/R documents. In both cases, these environmental reviews were conducted on a program whose essential purpose is to “provide protection to at-risk native fish species of the Bay-Delta estuary through environmental beneficial changes in State Water Project/Central Valley Project operations at no uncompensated water cost to the Projects’ water users. This

⁴ Pacific Institute, http://www.pacinst.org/reports/more_with_less_delta/index.htm.

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approach to fish protection involves changing Project operations to benefit fish and the acquisition of alternative sources of project water supply, called the ‘EWA assets,’ which the EWA agencies use to replace the regular Project water supply lost by pumping reductions.”

The two basic sets of actions of the EWA were to:

- Implement fish actions that protect species of concern (e.g., reduction of export pumping at the CVP and SWP pumps in the Delta); and
- Increase water supply reliability by acquiring and managing assets to compensate for the effects of the fish actions (such as by purchasing water from willing sellers for instream flows that compensates the sellers for forgone consumptive use of water).

Without going into further detail on the EWA program, there was no attempt by the EWA agencies to characterize its environmental review as reflective of water transfer programs generally; the EWA was a specific set of strategies whose purpose was protection of fish species of concern in the Delta, not dry-year aid for junior water right-holding areas of California. Is the Bureau still relying on the EWA analysis from 2003/2004 and 2007/2008 since it continues to point backward in each successive attempt to analyze water transfers? If so, one consequence of this attempt to rely on the EWA EIS/R is that it makes the public understanding of the environmental baseline of the *2013 Water Transfer Program* impossible, because environmental baselines, differing purpose and need for the project, and many relevant mitigation measures are not readily available to the public. Merely referring to the EWA documents in the *2010/2011 Water Transfer Program* (e.g.) p. 3-47) and then referring to the *2010/2011 Water Transfer Program* in the Project EA mocks the missions of NEPA and CEQA to inform the public adequately about the environmental setting and potential impacts of the proposed project’s actions. Moreover, a Water Transfer Program for urban and agricultural sectors is plainly not the same thing as an Environmental Water Account.

Another consequence is that the chains of cause and effect of an EWA versus the *2010/2011 Water Transfer Program* or the *2013 Water Transfer Program* are entirely different because of their different purposes. While the presence of water purchases, willing sellers, and requesting buyers is similar, the timing of EWA water flows are geared to enhancing and protecting fish populations; the water was to flow in Delta channels to San Francisco Bay and the Pacific Ocean. In stark contrast, the *2010/2011 Water Transfer Program* and the *2013 Water Transfer Program* water flows focus water releases from the SWP and CVP reservoirs to exports for deliveries in the July through September period, whereas EWA assets would be “spent” year-round depending on the specific need to protect fish. EWA was about purchasing water to provide instream flows in the Delta, while the *2010/2011 Water Transfer Program* and the *2013 Water Transfer Program* facilitate water sales to serve consumptive uses outside of the Delta.

Furthermore, DWR and the Bureau do not even attempt to tease out the various ways in which the EWA review—itsself a two-binder document consisting of well over 1,000 pages—could be used to provide appropriate environmental compliance for river water transfers with myriad potential for impacts in the areas of origin, despite at least having staff resources that could have

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undertaken such task. It is therefore well beyond the reach of non-expert decision-makers and the public, and the use of the EWA EIS/R as part of the environmental review for the *2010/2011 Water Transfer Program* or the *2013 Water Transfer Program* therefore violates both NEPA and CEQA.

Nor is any attempt made in the EWA EIS/Rs to characterize the EWA as a “program level” environmental review, off of which a Water Transfer Program-like project could perhaps legitimately tier. In our view, this reliance on the EWA EIS/R obscures the environmental baselines of the Project from public view, inappropriately conflates the purposes of two (or maybe three) distinct environmental reviews, and flagrantly violates NEPA and CEQA. This could only be redressed by preparation of an EIS/R on the *2013 Water Transfer Program*.

Finally, the most significant baseline condition omitted in the Bureau’s inadequate and DWR’s negligent reporting relates to Sacramento Valley groundwater resources, discussed in the next section.

D. Scientific uncertainties and controversy about Sacramento Valley groundwater resources merit consideration that only an EIS can provide.

There is substantial evidence that the *2013 Water Transfer Program* may have significant impacts on the aquifer system underlying the project and the adjacent region that overlies the Tuscan Formation. This alone warrants the preparation of an EIS.

Additionally, an EIS is necessary where “[a] project[’s] ... effects are ‘highly uncertain or involve unique or unknown risks.’” *Blue Mountains Biodiversity Project*, 161 F.3d at 1213 (quoting 40 C.F.R. §1508.27(b)(5)). Here, the draft EA/FONSI fails to adequately address gaps in existing scientific research on the hydrology of the aquifer system and the extent to which these gaps affect the Bureau’s ability—and by logical extension, DWR’s ability—to assess accurately the Project’s environmental impacts.

1. Existing research on groundwater conditions indicates that the 2013 Water Transfer Program may have significant impacts on the aquifer system.

The EA fails to describe significant characteristics of the aquifers that the *2013 Water Transfer Program* proposes to exploit. These characteristics are relevant to an understanding of the potential environmental effects associated with the *2013 Water Transfer Program*’s potential direct extraction of up to 37,505 AF of groundwater (pp. 8, 9, 11, 28,29, 35) and the indirect extraction of 92,806 AF of groundwater (p. 31). First, the draft EA/FONSI fails to describe a significant saline portion of the aquifer stratigraphy of the *2013 Water Transfer Program* area, which includes the non-CVP regions. According to Toccoy Dudley, former Groundwater Geologist with the Department of Water Resources and former director of the Butte County Water and Resources Department, saline groundwater aquifer systems of marine origin underlie

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the various freshwater strata in the northern counties of Butte, Colusa, Glenn, and Tehama (“northern counties”). The approximate contact between fresh and saline groundwater occurs at a depth ranging from 1500 to 3000 feet. (Dudley 2005)

Second, the EA fails to discuss the pressurized condition of the down-gradient portion of the Tuscan formation, which underlies the northern counties. Dudley finds that the lower Tuscan aquifer located in the Butte Basin is under pressure. “It is interesting to note that groundwater elevations up gradient of the Butte Basin, in the lower Tuscan aquifer system, are higher than the ground surface elevations in the south-central portion of Butte Basin. This creates an artesian flow condition when wells in the central Butte Basin are drilled into the lower Tuscan aquifer.” (Dudley 2005). The artesian pressure indicates recharge is occurring in the up-gradient portions of the aquifer located along the eastern margin of the Sacramento Valley.

Third, the EA fails to describe the direction of movement of water through the subbasins in the Sacramento Valley. To consider the Lower Tuscan Formation as an example, according to Dudley: “From Tehama County south to the city of Chico, the groundwater flow direction in the lower Tuscan is westerly toward the Sacramento River. South of Chico, the groundwater flow changes to a southwesterly direction along the eastern margin of the valley and to a southerly direction in the central portion of the Butte Basin.” (2005) Adequate NEPA review would describe in detail all the subbasins where groundwater substitution transfers (or “mining” to be more direct) is planned to facilitate the Project.

Fourth, the draft EA fails to disclose that the majority of wells used in the Sacramento Valley are individual wells that pump from varying strata in the aquifers. The thousands of domestic wells in the target export areas of the Sacramento Valley are vulnerable to groundwater manipulation and lack historic monitoring. The Bureau’s 2009 DWB EA elaborated on this point regarding Natomas Central MWC (p. 39) stating that, “Shallow domestic wells would be most susceptible to adverse effects. Fifty percent of the domestic wells are 150 feet deep or less. Increased groundwater pumping could cause localized declines of groundwater levels, or cones of depression, near pumping wells, possibly causing effects to wells within the cone of depression. As previously described, the well review data, mitigation and monitoring plans that will be required from sellers during the transfer approval process will reduce the potential for this effect.”

As the latter statement made clear (even though the information from the 2009 DWB was excluded from the Project EA), the Bureau hoped that individual mitigation and monitoring plans created by the sellers would reduce the potential for impacts, but there wasn’t in 2009 (and there certainly isn’t in 2013) any assurance in the EA that it will reduce it to a level of insignificance for the thousands of well owners in the Sacramento Valley. AquAlliance questions the adequacy of individual mitigation and monitoring plans and suggests that an independent third party, such as USGS, oversee the mitigation and monitoring program, not the Bureau and DWR. After the fiasco in Butte County during the 1994 Drought Water Bank and with the flimsy, imprecise

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proposal for mitigation and monitoring in the *2013 Water Transfer Program* (see details below), the agencies lack credibility as oversight agencies.

In addition, even the Sacramento Valley Integrated Water Management Plan (2006) proposed a Framework for Sacramento Valley regional water resource monitoring that would also benefit shallow domestic-well owners. The Framework acknowledged that, “The lowering of groundwater levels due to the interception of groundwater underflow to surface water systems due to the increased groundwater extraction associated with conjunctive water management programs, have the potential to impact the native habitat areas,” and that, “In order to identify potential habitat impacts associated with implementation of conjunctive water management alternatives, a program-specific network of shallow monitor monitoring wells should be developed to detect changes in water levels over the shallowest portion of the aquifer. The groundwater monitoring network should contain shallow monitoring wells that will record changes to the water table elevation in the vicinity of these sensitive habitat areas.” Unfortunately, the Framework was shelved, and the shallow monitoring network never got off the ground.

Fifth, the draft EA fails to provide recharge data for the aquifers. Professor Karin Hoover, Assistant Professor of hydrology, hydrogeology, and surficial processes from CSU Chico, found in 2008 that, “Although regional measured groundwater levels are purported to ‘recover’ during the winter months (Technical Memorandum 3), data from Spangler (2002) indicate that recovery levels are somewhat less than levels of drawdown, suggesting that, in general, water levels are declining.” According to Dudley, “Test results indicate that the ‘age’ of the groundwater samples ranges from less than 100 years to tens of thousands of years. In general, the more shallow wells in the Lower Tuscan Formation along the eastern margin of the valley have the ‘youngest’ water and the deeper wells in the western and southern portions of the valley have the ‘oldest’ water,” adding that “the youngest groundwater in the Lower Tuscan Formation is probably nearest to recharge areas.” (2005). “This implies that there is currently no active recharge to the Lower Tuscan aquifer system (M.D. Sullivan, personal communication, 2004),” explains Dr. Hoover. “If this is the case, then water in the Lower Tuscan system may constitute fossil water with no known modern recharge mechanism, and, once it is extracted, it is gone as a resource,” (Hoover 2008). In another sub-basin, Yuba County Water Agency has encountered troubling trends that, according to the Draft 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.

All aquifer characteristics are important to a full understanding of the environmental impacts of the *2013 Water Transfer Program*. In the Tuscan Aquifer, for instance, there are numerous indications that other aquifer strata are being operated near the limit of overdraft and could be affected by the *2013 Water Transfer Program* (Butte County 2007). The Bureau has not considered this important historic information in the draft EA/FONSI. According to Dudley, the Chico area has a “*long term average decline in the static groundwater level of about 0.35 feet-per-year.*” (Letter to Lester Snow as presented to the Butte County Board of Supervisors as part

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of agenda item 4.05, 2007) (emphasis added.) Declining aquifer levels are not limited to the Chico Municipal area. This trend of declining aquifer levels in Chico, Durham and the Cherokee Strip is illustrated in a map submitted with these comments (CH2M Hill 2006).

Declining groundwater elevations in Butte County are relevant to the Tuscan Aquifer, but also are emblematic of a valley-wide trend affecting other aquifers that illustrates serious overuse of groundwater. It is disturbing that neither the specifics of overuse conditions nor summaries of the groundwater basins and sub-basins are disclosed in the Project EA/FONSI. Below are some examples:

1. The Butte Basin Groundwater Status Report describes the “historical trend” in the Esquon Ranch area as showing “seasonal fluctuation (spring to fall) in groundwater levels of about 10 to 15 feet during years of normal precipitation and less than 5 feet during years of drought.” The report further notes: “Long-term comparison of spring-to-spring groundwater levels shows a decline of approximately 15 feet associated with the 1976-77 and 1986-94 droughts (Butte Basin Water Users Association, 2007). The 2008 report indicates that, “The spring 2008 groundwater level measurement was approximately three feet higher than the 2007 measurement, however it was still four feet lower than the average of the previous ten spring measurements. Fall groundwater levels are approximately nine feet lower than the averages of those measured during either of the previous drought periods on the hydrograph. At this time it appears that there may be a downward trend in groundwater levels in this well,” (Butte Basin Water Users Association, 2008). Thus, “*it appears that there may be a downward trend in groundwater levels in this well.*” *Id.* (emphasis added). The 2012 Esquon Subinventory Unit report confirms this downward trend:

Water elevations have been monitored since 1953 at this location [20N02E09L001M] and the historical averages, including 2011 data, are; Spring=128 feet and Fall=121 feet. The spring 2011 groundwater level measurement was approximately six feet lower than the average during the previous drought periods. Recent fall groundwater levels are approximately eleven feet lower than the averages of those measured during either of the previous drought periods on the hydrograph. At this time it appears that there may be a downward trend in groundwater levels in this well.

This Esquon well is also one that was hammered during the 1994 DWB when water sales with groundwater substitution by Western Canal Water District and others in southern Butte County cause significant impacts. *Id.* (p. 6)

2. Groundwater elevations in the Pentz sub-area in Butte County also reveal significant historical declines. The historical trend for this sub-area “...shows that the average seasonal fluctuation (spring to fall) in groundwater levels averages about 3 to 10 feet during years of normal precipitation and approximately 3 to 5 feet during years of drought. Long-term comparison of spring-to-spring groundwater levels shows a decline in groundwater levels during the period of 1971-1981, perhaps associated with the 1976-77 drought. Since a groundwater elevation high of approximately 145 feet in 1985 the

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measured groundwater levels in this well have continued to decline. Recent groundwater level measurements indicate that the groundwater elevation in this well is approximately 15-25 feet lower than the historical high in 1985. (*Butte Basin Water Users Association, 2007* and 2012 Pentz Subinventory Unit report, p. 5). Water elevations at the Pentz sub-area well have been monitored since 1967. “Since 1985 spring groundwater levels in this well have been declining and the spring 2008 measurement remained ten feet below historical high levels and continues the downward trend on the hydrograph.” *Id.* p. 6 The Pentz and Esquon Ranch areas are located on the east and west sides of U.S. 99 respectively, in the eastern portion of the Tuscan aquifer.

3. Further evidence of changing groundwater levels appear in the Vina sub-region of Butte County, where water elevations have been monitored since 1947 at well 23N01W09E001M. The historical averages, including 2012 data, are; Spring=156 feet and Fall=150 feet (Butte County, Vina BMO report, p. 19). Unfortunately, the groundwater level measurement at this well in 2008 was the lowest recorded since 1994 *Id* Rock Creek, which is also in the Vina sub-unit once held water all year, and salmon fishing was robust prior to the 1930s (Hennigan 2010). Declining groundwater levels have caused the valley portion of Rock Creek to run completely dry each year and have also been noticed with Hennigan Farms’ wells since the 1960s. For example, a 1968 well had to be lowered 40 feet in 1974, another well constructed in 1978 had to be lowered 20 feet in 2009, and an old 1940s flood pump was lowered in the early 1960s, lowered again in 1976 when it was converted to a pressure pump, and lowered again in 1997 (Hennigan 2010).

The Natural Heritage Institute and Glenn Colusa Irrigation District acknowledge the declines in the Northstate aquifers, “Based on the most recent (Fall 2011) data collected by DWR, there appear to be some areas in the northern Sacramento Valley with persistent groundwater level declines, primarily in Glenn and Tehama Counties.” (*Feasibility Investigation of Re-Operation of Shasta and Oroville Reservoirs in Conjunction with Sacramento Valley Groundwater Systems to Augment Water Supply and Environmental Flows in the Sacramento and Feather Rivers* p. v) Although the Bureau and DWR provided funds for the NHI/GCID report, the general knowledge of groundwater declines in Glenn and Tehama counties is neither presented nor referenced in the Project’s EA.

In light of this downward trend in regional groundwater levels, the Bureau’s EA should closely analyze replenishment of the aquifers affected by the proposed *2013 Water Transfer Program*. The draft EA fails to provide any in-depth assessment of these issues. For example, the EA fails to discuss the best available estimates of where groundwater replenishment occurs. Lawrence Livermore National Laboratory analyzed the age of the groundwater in the northern counties to shed light on this process: “Utilizing the Tritium (H3) Helium-3 (He3) ratio, the age of each sample was estimated. Test results indicate that the “age” of the groundwater samples ranges from less than 100 years to tens of thousands of years,; (Dudley et al. 2005). As mentioned above, Dudley opines that the youngest groundwater in the Lower Tuscan Formation is probably nearest to recharge areas. (2005).

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Are isotopic groundwater data available for other regions in the Sacramento Valley? If so, they would be crucial for all concerned to understand the potential impacts from the proposed *2013 Water Transfer Program*. Where does the EA identify areas most vulnerable to groundwater impacts? Does the Bureau identify how the Project conflicts with attempts at local management, particularly in areas where there are existing groundwater problems? Just consider that the City of Sacramento proposes to transfer surface water into the state water market and substitute 3,800 AF of groundwater (EA p.31), but the Sacramento County Water Agency *Water Management Plan* indicates that intensive use of this groundwater basin has resulted in a general lowering of groundwater elevations that will require extensive conservation measures to remediate. The Sacramento County Water Agency has devised a plan to help lead the city to a sustainable groundwater use to avoid problems associated with unrestrained overuse (2011). The most reliable strategy is to reduce demand, particularly from outside a groundwater basin. Integrating the City's water supply into the state water supply would obviously increase demand and make the SCWA goals impossible to achieve.

The Bureau should prepare an EIS that discloses the fallacies inherent in its policies and actions. The need for almost 400,000 AF per year of water south of the Delta (*2010/2011 Water Transfer Plan*), 190,000 AF with the 2013 Project, and 600,000 AF per year in the 10-Year Plan springs from failed business planning. The Bureau and DWR must acknowledge this and further disclose that their agencies are willing to socialize the risks taken by corporate agribusiness and developers while facilitating private profit. Instead of asking northern California water districts and municipal water purveyors to place at risk their own water (as well as the water of their neighboring communities and thousands of residential well owners), water quality, fisheries, recreation, stream flow, terrestrial habitat, and geologic stability, the Bureau and DWR must disclose all the uncertainty in the *2013 Water Transfer Program* and then evaluate the risks with scientific methodology. This has clearly not been done.

2. The 2013 Water Transfer Program proposes to rely on inadequate monitoring and mitigation to avoid the acknowledged possibility of significant adverse environmental impacts.

The draft EA and the *Draft Technical Information for Water Transfer Proposals in 2013* (<http://www.water.ca.gov/watertransfers/>) referenced in the EA require "willing sellers" to prepare individual monitoring and mitigation plans and to conduct the monitoring with oversight provided by the Bureau and DWR (p. 12 - 14, 32). This fails to provide the most basic framework for governmental authority to enforce the state's role as trustee of the public's water in California, let alone a comprehensive and coordinated structure, for a very significant program that could transfer up to 190,906 AF of water from the Sacramento Valley. The draft EA further defers responsibility to "willing sellers" for compliance with local groundwater management plans and ordinances to determine when the effects of the proposed extraction become "adverse," (EA at p. 12). "Each district will be required to confirm that the proposed groundwater pumping will be compatible with state and local regulations and groundwater management plans," (EA at

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p. 25). It is not acceptable that the draft EA/FONSI and the *Draft Technical Information for Water Transfers in 2013* merely provide monitoring direction to “willing sellers” without identifying rigorous standards for the risks at hand, specific actions, acceptable monitoring and reporting entities, funding that will be necessary for this oversight, or resources with which to handle possible impacts.

AquAlliance proposes instead that the Bureau and DWR require, at a minimum, that local governments select independent third-party monitors, who are funded by surcharges on Project transfers paid by the buyers, to oversee the monitoring that is proposed in lieu of Bureau and DWR staff, and that peer-reviewed methods for monitoring be required. If this is not done, the Project’s proposed monitoring and mitigation outline is insufficient and cannot justify the significant risk of adverse environmental impacts.

To be clear, the EA/FONSI and the *Draft Technical Information for Preparing Water Transfer Proposals in 2013* fail to identify standards that would be used to monitor the *2013 Water Transfer Program’s* impacts. The documents fail to identify any specific monitoring protocols, locations (particularly in up-gradient recharge portions of the groundwater basins), and why chosen locations should be deemed effective for monitoring the effects of the proposed groundwater extraction. The EA/FONSI and the *Draft Technical Information for Preparing Water Transfer Proposals in 2013* points to the “seller” as the responsible party to meet the objectives in the *Draft Technical Information for Preparing Water Transfer Proposals in 2013*, but the Bureau and DWR are the responsible agencies that approve and move the water (EA at p.24-26). The EA asserts that, “If monitoring indicated that adverse effects related to the degradation of groundwater quality from the transfer occurred, willing sellers in the region will be responsible for monitoring this degradation and mitigating any adverse effects in accordance with all applicable regulations.” (p. 24). There is no explanation as to how the Bureau will hold the “willing sellers” responsible to meet the Bureau’s obligations under NEPA.

Moreover, the EA/FONSI fails to provide a mitigation strategy for review and comment by the public. Instead it defers this vital mitigation planning effort to future documents created by the “willing sellers,” (EA at p.25-27) despite the fact that the EA acknowledges the potential for significant impacts, however weakly. For example:

Groundwater substitution transfers could affect groundwater hydrology. The potential effects would be decline in groundwater levels, interaction with surface water, land subsidence, and water quality impacts. The well reviews and plans were required from sellers for review by Reclamation. Reclamation would not approve transfers without adequate mitigation and monitoring plans. The well review and required monitoring and mitigation plans described would minimize or avoid potential adverse effects to groundwater resources, to water quality and to wildlife habitat. (EA at p. 12)

If the Bureau and DWR’s approvals are so rigorous and protective of the communities, economy, and environment in the Sacramento Valley, where are the standards for review and approval? With the expectation that groundwater levels will decrease (EA at p. 12) where is the explanation that reveals the amount by which the groundwater is expected to decrease and what level of

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decrease is considered to be acceptable? Where is an explanation as to why the amount of water to be extracted is not considered significant? Without thresholds and standards, there is no logical link that leads to the Bureau's conclusion that, "The well review and required monitoring and mitigation plans described would minimize or avoid potential adverse effects to groundwater resources, to water quality and to wildlife habitat." (EA at p.12)

The EA discloses that, "Emissions from the operation of diesel engines could exceed emissions thresholds for each air district and de minimis thresholds for General Conformity," and that , Emissions as a result of the Proposed Action were within thresholds for Glenn, Colusa, Sacramento, and Sutter counties." (EA at p. 12) Where are the support data to reach these conclusory statements? In addition, it is confusing is that the same paragraph assumes that, "Idling rice fields would reduce the use of farm equipment and associated pollutant emissions, resulting in a beneficial impact on air quality." This flies in the face of the Proposed Action that assumes groundwater substitution to replace river water that will be sold, so crop cultivation may continue, which could easily be rice. (EA at pp.6, 9) This incongruity must be explained or changed.

Coupled with the possible impacts that the Bureau is willing to disclose in the EA/FONSI are bold assertions that with Bureau oversight the "sellers" will acknowledge and mitigate impacts. Unfortunately, there is no factual grounding for this grand assumption, and there is no disclosure to demonstrate how a business or individual would demonstrate harm. Such was the problem in 1994, when DWR and the sellers told people without irrigation and residential well water that they couldn't prove it was the water sales or existing conditions. The environment also needs a voice in this water marketing scheme, but there isn't a method or plan to provide it. The EA rightly acknowledges that, "It is recognized that an increase in groundwater pumping will affect the rate of groundwater recharge during balanced conditions, which will affect stream flow," (p.11) but fails to suggest how this could be avoided, monitored, or mitigated. Also missing in this regard in the EA/FONSI are:

1. What is the definition of "balanced conditions" in the numerous regions where both CVP and non-CVP groundwater substitution is proposed and who will define it?
2. What are the existing conditions in the areas of origin in 2013 (let alone at the baseline), which must start no sooner that when the CalFed Record of Decision was approved in August 2000?
3. Because the Bureau , DWR, buyers, and sellers continue these multi-year, serial water transfers from the Sacramento Valley, without the benefit of comprehensive environmental review, how has climate change and local use already affected streams, fish, terrestrial species, and groundwater, to name just a few critical areas with significant impacts from the Project?

The EA noticeably omits painfully obvious and significant impacts in the current Project EA/FONSI that were previously disclosed by the Bureau in the *2010/2011 Water Transfer Program* EA/FONSI. For example:

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- Surface water and groundwater interact on a regional basis, and, as such, gains and losses to groundwater vary significantly geographically and temporally. In areas where groundwater levels have declined, such as in Sacramento County, streams that formerly gained water from groundwater now lose water to the groundwater system through seepage (2010/2011 Water Transfer Program EA at p. 3-12).
- *Groundwater substitution transfers would alter ground water levels and potentially affect natural and managed seasonal wetlands and riparian communities, upland habitats and wildlife species depending on these habitats.* As a part of groundwater substitution transfers, the willing sellers would use groundwater to irrigate crops and decrease use of surface water. Pumping additional groundwater would decrease groundwater levels in the vicinity of the sellers' pumps. Natural and managed seasonal wetlands and riparian communities often depend on surface water/groundwater interactions for part or all of their water supply. Under the Proposed Action, subsurface drawdown related to groundwater substitution transfers could result in hydrologic changes to nearby streams and marshes, potentially affecting these habitats. Reduced groundwater elevations could also affect trees that access groundwater as a source of water through taproots in addition to extensive horizontal roots that use soil moisture as a water source. Decreasing groundwater levels could reduce part of the water base for species within these habitats (EA at p. 3-53 and 3-54).

Have these impacts dissipated, or were they not disclosed in the Project EA/FONSI?

The reader is directed to the Bureau and DWR's *Draft Technical Information for Water Transfers* in 2013 to discover the *minimal* objectives and required elements of the monitoring and mitigation component of the Project. "Water transfer proponents transferring water via groundwater substitution transfers must establish a monitoring program capable of identifying any adverse transfer related effects before they become significant." However, the reader (and possibly the sellers) are left wondering what exactly is "a monitoring program capable of identifying any adverse transfer related effects before they become significant," since there are no standards or particular guidance to manage and analyze the very complex hydrologic relationships internal to groundwater and its connection to surface waters.

Certainly the public has no idea or ability to comment, which fails the full disclosure mandate in NEPA and CEQA. Page 38 of the *Draft Technical Information for Water Transfers* in 2013 briefly lists, "Potentially significant impacts identified in a water transfer proposals [that] must be avoided or mitigated for a proposed water transfer to continue, including:"

- Contribution to long-term conditions of overdraft;
- Dewatering or substantially reducing water levels in nonparticipating wells;
- Measurable contribution to land subsidence;
- Degradation of groundwater quality that substantially impairs beneficial uses or violates water quality standards; and
- Affecting the hydrologic regime of wetlands and/or streams to the extent that ecological integrity is impaired.

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The *Draft Technical Information for Water Transfers* in 2013 continues with suggestions to curtail pumping from lower bowls, and pay higher energy costs to ease the impacts to third party wells owners (p. 38-39). While this bone thrown at mitigation is appreciated, the glaring omissions are notable. The *Draft Technical Information for Water Transfers* in 2013 completely fails to mention, even at a very general level, how individual well owners who may be harmed by the Project, will determine and prove where the impacts to their wells are coming from, that water quality and health could become a significant impact for impacted wells, users, and streams. The onus for coping with and disclosing potential impacts is deflected onto the nonparticipating public, species, and environment. How does this meet the requirements of NEPA and CEQA? Since wetlands and streams would require human observation or adequate monitoring to report an impact, how will, “Affecting the hydrologic regime of wetlands or streams to the extent that ecological health is impaired,” be avoided or mitigated without standards and requirements from the Bureau and DWR? (*Draft Technical Information for Water Transfers* p. 38) There also appears to be no consideration for species monitoring, just “practices” or “conservation measures” to “minimize impacts to terrestrial wildlife and waterfowl,” (*Draft Technical Information for Water Transfers* pp. 16, 20, 22-24).

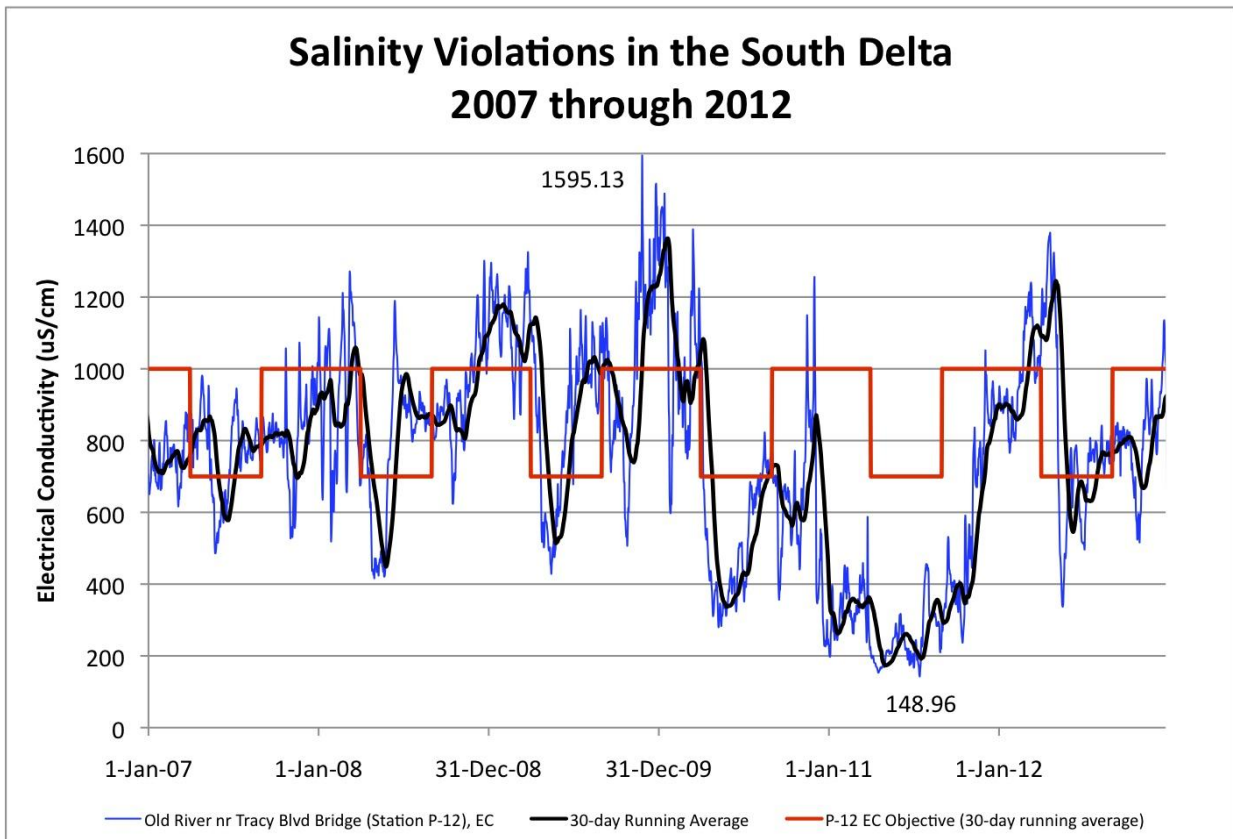
The EA/FONSI and the *Draft Technical Information for Water Transfers* in 2013 don’t appear to weigh the significance of avoidance of impacts, pre-Project mitigation, during Project mitigation, or post-Project mitigation. This fails to create objective standards and merely differs responsibility to the “willing sellers,” a broadly unsuspecting public, and a voiceless environment.

Another example of the inadequacy of the proposed monitoring is that the draft EA fails to include any coordinated, programmatic plan to monitor stream flow of creeks and rivers located in proximity to the “willing sellers” that will evacuate more groundwater than has been used historically. The potential for immediate impacts would be very close to water sellers’ wells, but the long term impacts could be more subtle and geographically diverse. What precautions has the Bureau and DWR made for the cumulative impacts that come not only from this one-year Project, but in combination with the water sales from the last dozen years and those that are planned by the Bureau into the future (see lists in Sections G, 4 & 5 below)? Bureau and DWR water transfers are not just one- or two-year transfers, but many serial actions in multiple years by the agencies, sellers, and buyers without the benefit of comprehensive environmental analysis under NEPA and CEQA.

As discussed above, adequate monitoring is vital to limit the significant risks posed by the Project to the health of the region’s groundwater, streams, and fisheries (more discussion below). Moreover, to the extent this Project is conceived as an ongoing hardship program that will provide knowledge for future groundwater extraction and fallowing, its failure to include adequate monitoring protocols is even more disturbing and creates the risk of significant long-term, perhaps irreversible impacts from the Project.

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a. The Bureau's assertion that the Project may be modified or halted in the event of significant adverse impacts to hydrologic resources is an empty promise in light of the wholly inadequate EA disclosure, and proposed monitoring for the *2013 Water Transfer Program*. Knowing that the Bureau and DWR deliberately and repeatedly violate the a major requirement like the X2 standard in the Delta does little to instill confidence from AquAlliance in the vague, non-specific monitoring program and mitigation criteria proposed in the EA/FONSI and associated documents..



Source: Tim Strohane, May 2013

The *2010/2011 Water Transfer Program* has been incorporated by reference in the Project EA. AquAlliance found repeated illustrations of potential for significant injury to other groundwater users, water quality, streams, flora and fauna, and the soil profile in the *2010/2011 Water Transfer Program* (p. 3-12, 3-23, 3-24, 3-53, 3-54). Chapter Three contained numerous examples that illustrated the need for an EIS since there is insufficient, comprehensive planning for, let alone preparation to mitigate, adverse environmental impacts:

- *Acquisition of water via groundwater substitution or cropland idling would change the rate and timing of flows in the Sacramento River compared to the No Action Alternative.*
- *In Figure 3.2-2, groundwater substitution pumping results in a change in the groundwater/surface water interaction characteristics. In this case, the water pumped*

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from a groundwater well may have two impacts that reduce the amount of surface water compared to pre-pumping conditions. These mechanisms are:

- *Induced leakage. The lowering of the groundwater table causes a condition where the groundwater table is lower than that the water level in the surface water. This conditions causes leakage out of the surface water.*
- *Interception of groundwater. The placement of groundwater substitution pumping may intercept groundwater that may normally have discharged to the surface water (i.e., water that has already percolated into the ground may be pumped out prior the water reaching the surface water and being allowed to enter the “gaining” stream).*
- *The changes in groundwater flow patterns (e.g., direction, gradient) due to increased groundwater substitution pumping may result in changes in groundwater quality from the migration of reduced quality water.*
- *Groundwater substitution transfers would alter ground water levels and potentially affect natural and managed seasonal wetlands and riparian communities, upland habitats and wildlife species depending on these habitats.*
- *Rice land idling transfers would reduce habitat and forage for resident and migratory wildlife populations.*
- *Water transfers could change reservoir releases and river flows and potentially affect special status fish species and essential fish habitat.*
- *Water transfers could affect fisheries and aquatic ecosystems in water bodies, including Sacramento and American River systems, the Sacramento-San Joaquin Delta, San Luis Reservoir, and DWR and Metropolitan WD reservoirs in southern California.*
- *Increased groundwater pumping for groundwater substitution transfers would increase emissions of air pollutants.*

The Bureau thus recognizes the potential for significant decline in groundwater levels in the Project’s EA as it did in the proposed *2010/2011 Water Transfer Program* (EA at p. 3-23, 3-24, 3-53, 3-54). The acknowledgements alone are sufficient to require a full EIS, but, regrettably, the Bureau has returned with the Project EA in 2013, instead of the EIS for which it ostensibly held scoping meetings in January 2011. Moreover, as detailed below, the monitoring proposed by the *2013 Water Transfer Program* remains inadequate leaving the public and environment with no guarantee that adverse impacts will be discovered at all (or be discovered in time to avoid significant environmental impacts).

Glenn County will experience groundwater substitution if the Project moves forward. Glenn County realized that its management plan and ordinances were not sufficient for the challenges presented by the *2010/2011 Water Transfer Program* and cautioned that “[s]ince the groundwater management plan is relatively new and not fully implemented, the enforcement and conflict resolution process has not been vigorously tested,” (2010) Subsequently, Glenn County updated their Ordinance 1237 and amended their *Groundwater Management to Groundwater Coordinated Resource Management Plan* (Glenn County Plan) in 2012, so it remains new and untested.. AquaAlliance finds the Glenn County inadequate to protect humans and the

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environment, since it states that, “The County does not hereby intend to regulate, in any manner, the use of groundwater; unless safe yield is exceeded or there is a threat to public health, welfare, or safety, but intends to adopt monitoring programs that will allow for the effective management of groundwater availability (groundwater level), groundwater quality, and indications of land subsidence.” Moreover, the Glenn County Groundwater Management Plan does not have any provisions to monitor or protect the environment, will in no way protect the common Tuscan aquifer that is beyond Glenn County’s border, and will protect no one or the environment that that is outside its jurisdictional boundary. The *2013 Water Transfer Program* EA fails to disclose the inadequacies of this and other local ordinances and plans.

Ordinance 1237, which updated the *Groundwater Management to Groundwater Coordinated Resource Management Plan* does not contain a definition of “safe yield,” but defers it to the BMO method (Glenn County Plan at p.5) The BMO method is found on Glenn County’s web site and was written by Toccoy Dudley in 2000 while he still worked for DWR. This method was created in an attempt to provide a fig leaf for a massive obstacle: safe yield is extremely difficult to determine. “In early 1999 the GCWAC began to focus on a countywide ordinance that did not attempt to control groundwater use, including export, as long as the aquifer system was not harmed and safe yield was not exceeded. But estimating safe yield appeared to be nearly impossible to accomplish given the inherent difficulties in determining safe yield and that no funding was available to do the required studies.”
http://www.glenncountywater.org/management_plan.aspx

Monitoring based on the Glenn County Plan is clearly inadequate to the task because enforcement remains cumbersome and voluntary. “In the Glenn County structure, if a BMO threshold is exceeded, the process sets into motion a series of events. First the TAC reports on the regional extent and magnitude of the non-compliance to the WAC. The TAC then starts a fact-finding process to identify the cause(s) of the non-compliance and makes recommendations to the WAC on how to resolve the situation. The WAC then tries to resolve the problem in the affected area by negotiations with the locals if at all possible. Some of the possible actions that may be taken by the WAC might be to coordinate the following voluntary actions in the affected area.” (Dudley, Basin Management Objective (BMO) Method Of Groundwater Basin Management, 2000 p.8)

The Bureau omitted discussion of the adequacy of the Glenn County Plan or any other county’s plan, in the *2013 Water Transfer Program*, but we are pleased that at a minimum the *Draft Technical Information for Water Transfers in 2013* identifies local ordinances in Table 3-1 (p. 27). We believe that this is appropriate juncture to refer to some of the commitments that the Bureau is making for itself and the sellers in the EA. A review of county-of-origin ordinances reveals that they are inadequate to the task because of the absence of enforceable measures that could protect human and environmental health within each county:

- “The objectives of this process are: to mitigate adverse environmental effects that occur; to minimize potential effects to other legal users of water; to provide a process for review and response to reported third party effects; and to assure that a local mitigation strategy

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is in place prior to the groundwater transfer. The seller will be responsible for assessing and minimizing or avoiding adverse effects resulting from the transfer within the source area of the transfer.” (EA at p. 25)

- “Each district will be required to confirm that the proposed groundwater pumping will be compatible with state and local regulations and groundwater management plans. “ (EA at p.25) What consideration is made for the inadequacy of a local ordinance that could lead to a serious impact to the human environment and the environment overall?
- “For purposes of this EA, Reclamation assumes that stream flow losses due to groundwater pumping to make water available for transfer are 12 percent of the amount pumped.” (EA at p. 25) Where are the supporting data? How will this be mitigated?

Since the Project’s EA fails to disclose limitations or inadequacies with local ordinances (also see AquAlliance’s Attachments A & B), it is helpful that Butte County’s Department of Water and Resource Conservation explains that local plans are simply not up to the task of managing a regional resource:

Each of the four counties that overlie the Lower Tuscan aquifer system has their own and separate regulatory structure relating to groundwater management. Tehama County, Colusa, and Butte Counties each have their own version of an export ordinance to protect the citizens from transfer-related third party impacts. Glenn County does not have an export ordinance because it relies on Basin Management Objectives (BMOs) to manage the groundwater resource, and subsequently to protect third parties from transfer related impacts. Recently, Butte County also adopted a BMO type of groundwater management ordinance. Butte County, Tehama County and several irrigation districts in each of the four counties have adopted AB3030 groundwater management plans. All of these groundwater management activities were initiated prior to recognizing that a regional aquifer system exists that extends over more than one county and that certain activities in one county could adversely impact another. Clearly the current ordinances, AB3030 plans, and local BMO activities, which were intended for localized groundwater management, are not well suited for management of a regional groundwater resource like that theorized of the Lower Tuscan aquifer system.⁵

c. The EA asserts that, “The potential for subsidence is small if the groundwater substitution pumping is small compared to overall pumping in a region.” (p. 24) This is misleading at best, and incorrect at worst. The potential for subsidence in a given clay and slit deposit is small only when groundwater levels can be guaranteed to remain above the lowest water levels caused by past droughts. As more water is pumped from an aquifer because of increased usage of groundwater supplies, the potential for subsidence is increased, not decreased, and if existing pumping brings water levels near to their lowest historical lows, then substitution pumping indeed has the potential to induce subsidence.

⁵ Butte County Department of Water and Resource Conservation, *Needs Assessment Tuscan Aquifer Monitoring, Recharge, and Data Management Project*, 2007.

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The EA goes on stating, “The minimization measures in Section 3.2.2.3 require all groundwater substitution transfers to monitor for subsidence or provide a credible analysis why it would be unlikely.” (p. 24) Subsidence is difficult (if not impossible) to detect in the short term. Elastic deformations that are recoverable upon aquifer recharge are readily detected by proper measurement techniques, but these reversible motions are not subsidence. Subsidence is by definition an irreversible mechanical response that permanently lowers the ground surface and that permanently decreases aquifer capacity. Because of the low permeability of soil deposits that are susceptible to subsidence, these permanent effects are commonly widely separated in time from the actual pumping that causes them to begin, and thus only long-term monitoring can accurately identify subsidence.

Or in simple terms, the absence of evidence of subsidence when pumping is initiated provides little or no evidence of whether subsidence is actually occurring. Only when irreversible damage is done over the long-term is the effect of groundwater extraction obvious.

Determining a credible basis for subsidence potential can be extremely difficult and expensive. Such an analysis would commonly require determination of historical low groundwater levels, the likelihood of future increases in groundwater extraction, and the composition of the subsurface layers that comprise the aquifer. If these tasks were easy, they would have been performed already, and the fact that the Bureau cannot provide credible evidence to rule out subsidence is an implicit admission that such credibility is difficult or impossible to obtain in practice.

The EA has responded to AquAlliance’s proposal for real-time monitoring for land subsidence (AquAlliance, et. al, 2010). (EA at p. 24) We believed at the time that this would be a step forward that could reveal immediate subsidence problems. We have subsequently learned is that real-time subsidence monitoring is a misnomer. While it is possible to monitor ground surface elevation, performing this with due degree of precision is not easy or inexpensive in practice. And since such ground-surface monitoring often only provides real-time estimates of elastic (i.e., reversible) surface elevation changes, at best it yields only a hint of the potential damage that can occur in the long term.

Third-party independent verification, perhaps by scientists from the U.S. Geological Survey, should be incorporated by DWR and the Bureau into the Project description of the *2013 Water Transfer Program*. We applaud the initiation of a regional GPS network in the Sacramento Valley but remain concerned about the existing extensometers in the Sacramento Valley that measure land subsidence, and a Global Positioning System land subsidence network established by one county (*2010/2011 Water Transfer Program EA* at p. 13). The remaining responsibility is again deferred to the “willing sellers.” Unfortunately, voluntary monitoring by pumpers does not strike us as a responsible assurance given the substantial uncertainties involved in regional aquifer responses to extensive groundwater pumping in the Sacramento Valley. Admonishing sellers not to cause problems is a deferral of responsibility by the Bureau and DWR.

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There is a noticeable absence of discussion regarding delayed subsidence, which we broach above, that should also be monitored according to the findings of Dr. Kyran Mish, Presidential Professor, School of Civil Engineering and Environmental Science at the University of Oklahoma. Dr. Mish notes: “It is important to understand that *all* pumping operations have the potential to produce such settlement, and when it occurs with a settlement magnitude sufficient enough for us to notice at the surface, we call it *subsidence*, and we recognize that it is a serious problem (since such settlements can wreak havoc on roads, rivers, canals, pipelines, and other critical infrastructure).” (Mish 2008) Dr. Mish further explains that “[b]ecause the clay soils that tend to contribute the most to ground settlement are highly impermeable, their subsidence behavior can continue well into the future, as the rate at which they settle is governed by their low permeability.” *Id.* “Thus simple real-time monitoring of ground settlement can be viewed as an *unconservative* measure of the potential for subsidence, as it will generally tend to underestimate the long-term settlement of the ground surface.” *Id.* (emphasis added).

The *2010/2011 Water Transfer Program EA* acknowledged the existence and cause of serious subsidence in one area of the valley. “The area between Zamora, Knights Landing, and Woodland has been most affected (Yolo County 2009). Subsidence in this region is generally related to groundwater pumping and subsequent consolidation of aquifer sediments,” (EA p. 3-13). This fact alone illustrates the need for more extensive analysis throughout the export areas in an EIS.

d. The *2013 Water Transfer Program EA* fails to require streamflow monitoring. The 2009 DWB EA/FONSI deferred the monitoring and mitigation planning to “willing sellers,” but even that requirement has been completely eliminated. We can’t emphasize enough the importance of frequent and regular streamflow monitoring by either staff of the project agencies or a third, independent party such as the USGS, paid for by Project transfer surcharges mentioned above. It is clear from existing scientific studies and the EA that the Project may have significant impacts on the aquifers replenishment and recharging of the aquifers (EA at pp. 10 – 12, 27), so the *2013 Water Transfer Program* should therefore require extensive monitoring of regional streams. The radius for monitoring should be large, not the typical two to three miles as usually used by DWR and the Bureau. Though not presented for the Project’s EA or the *2010-2011 Water Transfers Program*, the *Stony Creek Fan Aquifer Performance Testing Plan*, which is a much smaller project, recognized that there may be a drawdown effect on the aquifer by considering results from a DWR Northern District spring 2007 production well test (Water Transfer Program EA/FONSI p. 28). However, it did not assess the anticipated scope of that effect—or even what level of effect would be considered acceptable. Moreover, the results from that test well indicate that the recharge source for the solitary production well “is most likely from the foothills and mountains, to the east and north”—which at a minimum is more than fifteen miles away. (Stanton, Glenn-Colusa Irrigation District Aquifer Performance Testing Glenn County, California).

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The Butte County Department of Water and Resource Conservation has identified streams that must be monitored to determine impacts to stream flows that would be associated with pumping the Lower Tuscan Aquifer. These “[s]treams of interest” are located on the eastern edge of the Sacramento Valley and include: Mill Creek, Deer Creek, Big Chico Creek, Butte Creek, and Little Dry Creek (The Butte County DWRC 2007). The department described the need and methodology for stream flow gauging:

The objective of the stream flow gaging is to determine the volume of surface water entering into or exiting the Lower Tuscan Aquifer along perennial streams that transect the aquifer formation outcropping for characterization of stream-aquifer interactions and monitoring of riparian habitat. Measurement of water movement into or out of the aquifer will allow for testing of the accuracy of the Integrated Water Flow Model, an integrated surface water-groundwater finite differential model developed for the eastern extent of the Lower Tuscan aquifer.

Two stream gages will be installed on each of five perennial streams crossing the Lower Tuscan Formation to establish baseline stream flow and infiltration information. The differences between stream flow measurements taking upstream and downstream of the Lower Tuscan Formation are indications of the stream-aquifer behavior. Losses or gains in stream volume can indicate aquifer recharge or discharge to or from the surface waters.
Id.

As is evident in the following conclusory assertions, the draft EA/FONSI fails to define the radius of influence associated with the aquifer testing and thus entirely fails to identify potential significant impacts to salmon:

An objective in planning a groundwater substitution transfer is to ensure that groundwater levels recover to their typical spring high levels under average hydrologic conditions. Because groundwater levels generally recover at the expense of stream flow, the wells used in a transfer should be sited and pumped in such a manner that the stream flow losses resulting from pumping peak during the wet season, when losses to stream flow minimally affect other legal users of water. (EA at p. 11.)

As mentioned above, streamflow monitoring is not a requirement of the Project, which is unfathomable. Monitoring of flow on streams associated with the Lower Tuscan Formation is particularly important to the survival of Chinook salmon which use these “streams of interest” to spawn and where salmon fry rear. Intensive groundwater pumping would likely lower water table elevations near these streams of interest, decreasing surface flows, and therefore reducing salmon spawning and rearing habitat through dewatering of stream channels in these northern counties. This would be a significant adverse impact of the Project and is ignored by the Project’s EA/FONSI.

A similar effect has been observed in the Cosumnes River, where “[d]eclining fall flows are limiting the ability of the Cosumnes River to support large fall runs of Chinook salmon,”

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(Fleckenstein, et al 2004). This is a river that historically supported a large fall run of Chinook Salmon. *Id.* Indeed, “[a]n early study by the California Department of Fish and Game . . . estimated that the river could support up to 17,000 returning salmon under suitable flow conditions.” *Id.*, citing CDFG 1957 & USFWS 1995. But “[o]ver the past 40 years fall runs ranged from 0 to 5,000 fish according to fish counts by the CDFG (USFWS 1995),” and “[i]n recent years, estimated fall runs have consistently been below 600 fish, according to Keith Whitener,” (Fleckenstein, *et al.* 2004). Indeed, “[f]all flows in the Cosumnes have been so low in recent years that the entire lower river has frequently been completely dry throughout most of the salmon migration period (October to December).” *Id.*

Research indicates that “groundwater overdraft in the basin has converted the [Cosumnes River] to a predominantly losing stream, practically eliminating base flows. . . .” (Fleckenstein, *et al.* 2004). And “investigations of stream-aquifer interactions along the lower Cosumnes River suggest that loss of base flow support as a result of groundwater overdraft is at least partly responsible for the decline in fall flows.” *Id.* Increased groundwater withdrawals in the Sacramento basin since the 1950s have substantially lowered groundwater levels throughout the county.” *Id.*

The draft EA acknowledges the potential for impacts to special status fish species from altered river flows and commits to maintaining flow and temperature requirements already in place (p. 12). AquAlliance would like to have greater assurance of a commitment considering, as noted above, that the Bureau and DWR fail to meet the X2 standard in the Delta regularly and repeatedly. The Bureau and DWR should make X2 compliance and streams of interest monitoring in real time part of their permit amendment applications to the SWRCB in June 2013. If stream levels are affected by groundwater pumping, then pumping would cease.

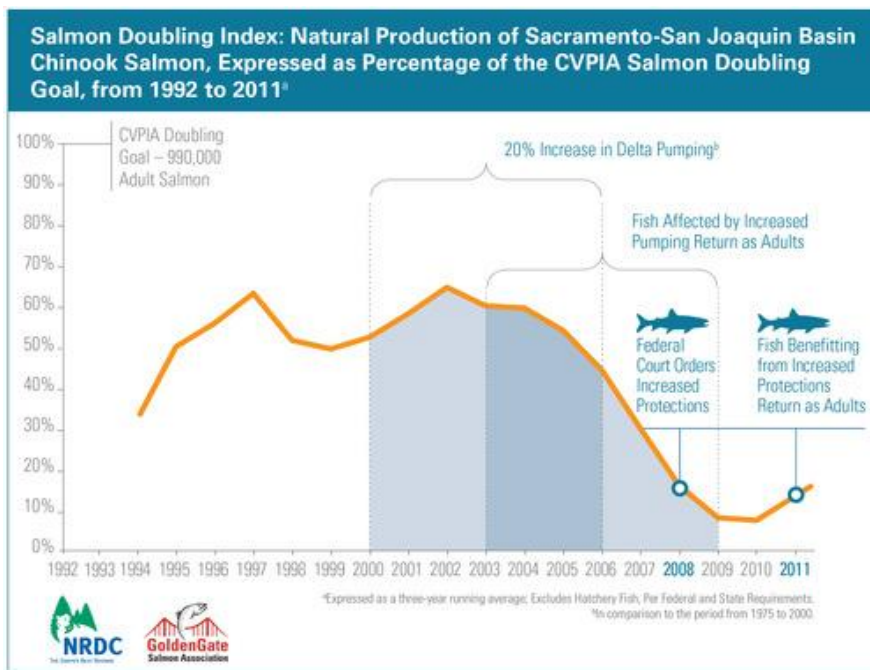
Unfortunately, the draft EA fails to anticipate possible stream flow declines in important salmon rearing habitat in the 2013 Water Transfer Program area. Many important streams, such as Mud Creek, are located within the 2013 Water Transfer Program and flows through probable Tuscan recharge zones, yet are not mentioned in the EA (also see comments above regarding Rock Creek). While a charged aquifer is likely to add to base flow of this stream, a de-watered aquifer would pull water from the stream. According to research conducted by Dr. Paul Maslin, Mud Creek provides advantageous rearing habitat for out-migrating Chinook salmon (1996). Salmon fry feeding in Mud Creek grew at over twice the rate by length as did fry feeding in the main stem of the Sacramento River. *Id.*

Another tributary to the Sacramento River, Butte Creek, also hosts spring-run Chinook salmon, a threatened species under the Endangered Species Act. 64 Fed. Reg. 50,394 (Sept. 16, 1999). Butte Creek contains the largest remaining population of the spring-run Chinook and is designated as critical habitat for the species. *Id.* at 50,399; 70 Fed. Reg. 52,488, 52,590-91 (Sept. 2, 2005). Additionally, Butte Creek provides habitat for the threatened Central Valley steelhead. See 63 Fed. Reg. 13,347 (Mar. 19, 1998); 70 Fed. Reg. at 52,518. While Butte Creek was mentioned in the 2010/2011 Water Transfer Program’s EA (p. 2-11, 3-4, 3-49, 3-57), it is only

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mentioned for identification purposes in the Project’s EA. In the *2010/2011 Water Transfer Program’s EA*, the only protection afforded this vital tributary are statements that cropland idling will not occur adjacent to it, yet that was contradicted on page 3-19. The Bureau should not overlook the importance of rearing streams, and should not proceed with this Project unless and until adequate monitoring and mitigation protocols are established.

Existing mismanagement of water in California’s rivers, creeks, and groundwater has already caused a precipitous decline in salmon abundance. There is no mention of the fall-run salmon numbers in the main stem Sacramento River or its essential tributaries despite the fact that their numbers dropped precipitously in 2007, 2008, and 2009 and have not come close to the numbers found over a decade ago. The graph below illustrates natural production of Sacramento-San Joaquin Basin Chinook salmon and is expressed as a percentage of the CVPIA Salmon Doubling Goal, from 1992 to 2011 as a three-year running average. The numbers exclude hatchery fish, which complies with federal and state requirements.



Graph courtesy of NRDC and Golden Gate Salmon

A May 15, 2013 article underscores the past and present impacts from Bureau and DWR mismanagement of the CVP and SWP.

After two closed salmon fishing seasons in 2008 and 2009, and a token season in 2010, fishermen are fishing again, but we remain far below the abundant runs required by law,” said Zeke Grader, executive director of Pacific Coast Federation of Fishermen’s Association and GGSA board member. “Stronger Delta pumping restrictions are paying off but we have to finish the job and get these salmon runs rebuilt.” The groups say these results are only "marginally

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better" than the 12 percent of salmon produced in 2011, when NRDC and GGSA released the first analysis of the Central Valley Chinook salmon population goals. The CPVIA specifically directs the U.S. Department of the Interior to protect, restore, and enhance fish in the Central Valley of California. That means rebuilding salmon populations from 495,000 to 990,000 wild adult fish by 2002, according to Grader. "This year our industry will only get a fraction of what our state and federal governments are supposed to be producing," said John McManus, executive director of GGSA. "We're having a hard time living on 22 percent of the legally required salmon population. Balance could be restored by reallocating a fairly small amount of water which would give us healthy salmon runs, healthy local food, healthy communities and a healthy economy." Central Valley Chinook salmon declined drastically from 2003 through 2010, reaching a record low of 7 percent of the required population level, according to McManus. This decline in the fishery corresponded with a 20 percent increase in water diversions from salmon habitat over levels from the preceding quarter century. The largest water exports from the Delta in California history took place from 2003 to 2006 and in 2011. Although the Central Valley salmon numbers have increased since the unprecedented collapse of 2008-2009, forecasts suggest 2013's salmon returns will again fall far below what the law requires. (Bacher)

The following chart provides a valuable summary that compliments the article and graph immediately above and demonstrates how the Bureau and DWR failure to meet required standards.

Year (Y)	Three-Year* Running Average as a Percentage of CVPIA Production Goal	Year (Y)	Three-Year* Running Average as a Percentage of CVPIA Production Goal
1994	32.05%	2004	59.26%
1995	49.82%	2005	53.80%
1996	55.57%	2006	44.15%
1997	62.85%	2007	29.85%
1998	51.38%	2008	15.90%
1999	49.29%	2009	8.04%
2000	52.13%	2010	7.41%
2001	57.88%	2011	13.25%
2002	64.33%		

* $(Y + Y_{t+1} + Y_{t+2})/3$

Table courtesy of Golden Gate Salmon Association

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As noted above, the EA casually asserts that maintaining flow and temperature requirements in the main stem will be sufficient to protect aquatic species. (EA at pp. 12, 13, 20) We question that assurance and present factual data compiled by The Bay Institute in 2012 that contradicts the Bureau's conclusory statement. (TBI at pp. 7-12) The EA/FONSI also fails to consider the impacts of 190,906 AF of water transfers and groundwater substitution on the tributaries. How much additional pumping does the Project represent, given CVP and SWP contractual commitments, available reservoir supplies, and other environmental restrictions south of the Delta? The EA and DWR's missing environmental review are silent on this.

Unsupported assertions, that impacts to aquatic species will be below a level of significance, are arbitrary and capricious and lack foundational data. (EA at pp. 10, 12, 17) Habitat values are also essential to many other special status species that utilize the aquatic and/or riparian landscape including, but not limited to, giant garter snake, bank swallow, greater sandhill crane, American shad, etc. Where is the documentation of the potential impacts to these species?

In addition to the direct decline in the salmon populations is the reverberating indirect influence on the food chain that may significantly impact species such as killer whales.

3. The EA fails to address the significant unknown risks raised by the 2013 Water Transfer Program's proposed groundwater extraction.

The EA fails to identify and address the significant unknown risks associated with this Project. There are substantial gaps in scientists' understanding of how the aquifer system recharges.

The EA fails to reveal the scientifically known and unknown characteristics of the Lower Tuscan aquifer. Expert opinion and experience is offered by Professor Karin Hoover from CSU Chico who asserts that: "[T]o date there exists no detailed hydrostratigraphic analysis capable of distinguishing the permeable (water-bearing) units from the less permeable units within the subsurface of the Northern Sacramento Valley. In essence, the thickness and extent of the water-bearing units has not been adequately characterized." (2008 p. 1)

Though the Project fails to disclose the limitations in knowledge of the geology and hydrology of the northern counties, it was disclosed in 2008 in the EA for the *Stony Creek Fan Aquifer Performance Testing Plan* (Testing Plan EA). It revealed that there is also limited understanding of the interaction between the affected aquifers, and how that interaction will affect the ability of the aquifers to recharge. The Testing Plan EA provides:

The Pliocene Tuscan Formation lies beneath the Tehama Formation in places in the eastern portion of the SCF Program Study Area, although its extent is not well defined. Based on best available information, it is believed to occur at depths ranging between approximately 300 and 1,000 feet below ground surface. It is thought to extend and slope upward toward the east and north, and to outcrop in the Sierra Nevada foothills. The Tuscan Formation is comprised of four distinct units: A, B, C and D (although Unit D is

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not present within the general project area). Unit A, or Upper Tuscan Formation, is composed of mudflow deposits with very low permeability and therefore is not important as a water source. Units B and C together are referred to as the Lower Tuscan Formation. Very few wells penetrate the Lower Tuscan Formation within the SCF Program study area.

(The Testing Plan EA/FONSI at p. 23). The Tehama Formation, however, generally behaves as a semi-confined aquifer system and the EA contains no discussion of its relationship with the adjoining formations. Nor is there any discussion of the role of the Pliocene Tehama Formation as “the primary source of groundwater produced in the area,” (DWR 2003).

The EA/FONSI fails to offer any in-depth analysis of the groundwater basins for both CVP and non-CVP groundwater substitution transfers, of the aquifers within the basins, and which strata in the aquifers in the basins will be most likely affected by the *2013 Water Transfer Program’s* proposed extraction of groundwater. This detailed information is also not found in the *Draft Technical Information for Water Transfers in 2013*. The *2010/2011 Water Transfer Program’s* EA did disclose information about the Sacramento Valley Groundwater Basin, but there is no direct reference to this in the Project’s EA. It must be emphasized that neither the Project nor the *2010/2011 Water Transfer Program’s* EAs revealed any understanding of aquifer strata or hydrostratigraphy.

In addition, the Project’s EA added the Anderson Cottonwood Irrigation District (ACID) to the CVP groundwater substitution transfers, which resides in a different groundwater basin. The Redding Basin is mentioned on page 21 of the EA, but nowhere is there a description of the basin, its potential sub-basins, strata, or hydrostratigraphy. What is presented are numerous conclusory statement attributed to ACID that assert that their part of the Project will not create impacts, but these are without demonstrable data and analysis. (EA at p. 23) The draft Project EA/FONSI fails to define the radius of influence associated with ACID’s groundwater extraction and thus entirely fails to identify potential significant impacts to tributaries, domestic and agricultural wells, as well as possible special status species. The *Redding Basin Water Resources Management Plan Environmental Impact Report* determined that there was an existing deficit of water need with Shasta County in 2005 and a greater deficit would exist by 2030. (p. 1-6) This begs the questions, why is ACID transferring river water out of the Sacramento Valley and substituting groundwater that could be used for local needs, and why didn’t the Bureau consider and present this information in the Project’s EA? Liability is a crucial component of potential third party impacts. As noted in this paragraph, the Project’s deficient EA does not reveal any information about the current status of the ground water basin, which indicates that there is not enough known about the aquifer to judge liability for damage from pumping. How will the Bureau and ACID rectify this for other ground water dependent users and the environment?

AquAlliance incorporates by reference the comments we submitted September 28, 2011 for the *Draft Environmental Assessment/Initial Study and Finding of No Significant Impact/Mitigated Negative Declaration for the Anderson-Cottonwood Irrigation District Integrated Regional Water Management Program – Groundwater Production Element Project*.

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Thousands of domestic wells are in the upper layers of the target area-of-origin aquifers, but they are not even considered in the EA. In addition, the EA provides no assessment of the interrelationship of varying basins, sub-basins, or strata in the target aquifers in the Sacramento Valley.

The EA fails to provide basic background information regarding the recharge of groundwater in the different basins and sub-basins. The Project's EA excludes disclosure of this crucial information, but the *2010/2011 Water Transfer Program's EA* states, "Groundwater is recharged by deep percolation of applied water and rainfall infiltration from streambeds and lateral inflow along the basin boundaries," (*2010/2011 Water Transfer Program's EA* p. 3-10). We asked in 2010 and ask again here, how did the Bureau conclude that applied water leads to recharge of the aquifer? Where are the supporting data? This claim is unsubstantiated by any of the work that has been performed to date. For example, the RootZone water balance model used by a consultant with Glenn Colusa Irrigation District, Davids Engineering, was designed to simulate root zone soil moisture. It balances incoming precipitation and irrigation against crop water usage and evaporation, and whatever is left over is assigned to "deep percolation." Deep percolation in this case means below the root zone, which is anywhere from a few inches to several feet below the surface, depending on the crop. There is absolutely no analysis that has been performed to ensure that applied water does, indeed, recharge the aquifer. For example, if the surface soils were to dry out, water that had previously migrated below the root zone might be pulled back up to the surface by capillary forces. In any case, the most likely target of the "deep percolation" water in the Sacramento Valley is the unconfined, upper strata of the aquifer and possibly the Sacramento River. The Project's EA has not demonstrated otherwise.

A public hearing concerning the Monterey Agreement was held in Quincy on November 29, 2007, hosted by DWR. At the hearing Barbara Hennigan presented the following testimony: "So for the issues of protecting the water quality, protecting the stream flow in the Sacramento, one of the things that we have learned is that the Sacramento River becomes a permanently losing stream at the Sutter Buttes. When I first started looking at the water issues that point was at Grimes south of the [Sutter] buttes, now it is at Princeton, moving north of the buttes. As the Sacramento becomes a losing stream farther and farther north because of loss of the Lower Tuscan Aquifer, that means that it [sic], there will be less water that the rest of the State relies on," (http://www.water.ca.gov/environmentalservices/docs/mntry_plus/comments/Quincy.txt). How and when will the Bureau and DWR address this enormously important condition and amplify the risk to not only to the Northstate, but the entire State of California?

4. The EA contains numerous errors and omissions regarding groundwater resources.

There are numerous errors, omissions, and negligence in addressing existing conditions before and with the Project in Section 3, Affected Environmental and Environmental Consequences.

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The failure to address stated problematic conditions and the lack of accuracy in this section of so many elemental issues and facts raises questions about the content of the entire EA and FOSI. A partial list of statements and questions follows.

- On pages 15 and 21 of the EA, the Sierra Nevada [mountain range] and “Pacific Coast Range” are identified, but there is no mention of the southern Cascade Range that is a prominent geologic feature of the northern Sacramento Valley, the genesis of the Sacramento River, and a significant contributor to the hydrology of the region.
- We are so pleased that the Bureau added the McCloud and the Pit rivers as “major tributaries” to the Sacramento River, as we requested in comments for the *2010/2011 Water Transfer Program*, but we note that the Project’s EA still fails to mention Battle, Mill, Big Chico, and Butte creeks, but now also excludes mention of Putah and Stony creeks in Section 3. These omissions again reflect an odd lack of understanding of the Cascade Range and the Sacramento River hydrologic region.
- The *2010/2011 Water Transfer Program’s* EA states quite straightforwardly on page 3-12 that, “Surface water and groundwater interact on a regional basis, and, as such, gains and losses to groundwater vary significantly geographically and temporally. In areas where groundwater levels have declined, such as in Sacramento County, streams that formerly gained water from groundwater now lose water to the groundwater system through seepage.” Both the *2010/2011 Water Transfer Program’s* EA and the Project’s EA fail to expand upon what was initiated in this quotation: What is the geographic extent of this far-reaching and hydrologically essential pre-project understanding and how that has changed already from the baseline that we continue to believe is the year 2000? This *alone* requires substantive environmental review under NEPA and CEQA.
- *Id.* Page 3-12. “Groundwater production in the basin has recently been estimated to be about 2.5 million acre-feet or more in dry years.” What is the citation for this assertion?
- *Id.* Page 3-12. “Historically, groundwater levels in the Basin have remained steady, declining moderately during extended droughts and recovering to pre-drought levels after subsequent wet periods. DWR extensively monitors groundwater levels in the basin. The groundwater level monitoring grid includes active and inactive wells that were drilled by different methods, with different designs, for different uses. Types of well use include domestic, irrigation, observation, and other wells. The total depth of monitoring grid wells ranges from 18 to 1,380 feet below ground surface.” As presented above, groundwater levels have been changing, historically. Since the Bureau and DWR have access to a monitoring grid, for NEPA and CEQA compliance, they must present current facts, not general statements that relate to social science.
- *Id.* Page 3-12. “In general, groundwater flows inward from the edges of the basin and south parallel to the Sacramento River. In some areas there are groundwater depressions associated with extraction that influence local groundwater gradients.” Where are the groundwater depressions? How have they affected groundwater gradients? How will the Project exacerbate a negative existing condition?
- *Id.* Page 3-12. “Prior to the completion of CVP facilities in the area (1964-1971), pumping along the west side of the basin caused groundwater levels to decline. Following construction of the Tehama-Colusa Canal, the delivery of surface water and reduction in

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groundwater extraction resulted in a recovery to historic groundwater levels by the mid to late-1990s.” Please provide the citation(s).

- *Id.* Pg 3-15 "According to the SWRCB, there are no elevated concentrations of arsenic or selenium in the Sacramento Groundwater Basin." The GAMA domestic well Project, Tehama County Focus Area, 2009, Arsenic in Domestic and Public Wells indicates variable levels of arsenic in the cited basin. The study found that, "Fourteen percent of the wells [in the Tehama County focus area] had concentrations of both arsenic and iron above their associated CDPH MCLs or secondary MCLs."
- *Id.* Page 3-15. "The State Water Code (Section 1745.10) requires that for short term water transfers, the transferred water may not be replaced with groundwater unless the following criteria are met (SWRCB 1999)..."
 - No matter how the Bureau and DWR attempt to present the Project as a "short-term water transfer," it is factually one of a series of actions in multiple years by the agencies, sellers, and buyers without the benefit of comprehensive environmental analysis under NEPA and CEQA as AquAlliance revealed in comments for the *2010/2011 Water Transfer Program EA/FONSI* and the Project's EA/FONSI.
 - *Id.* Page 3-16. "California Water Code Section 1810 and the CVPIA protect against injury to third parties as a result of water transfers. Three fundamental principles include (1) no injury to other legal users of water; (2) no unreasonable effects on fish, wildlife or other in-stream beneficial uses of water; and (3) no unreasonable effects on the overall economy or the environment in the counties from which the water is transferred. These principles must be met for approval of water transfers." Without monitoring and mitigation plans presented for review, the public has no means with which to determine the effectiveness of lack of effectiveness of the Bureau's decision to defer all responsibility in the areas of origin onto the "willing sellers" and the unsuspecting public and environment. The Bureau, at minimum, must at least *disclose*
 - How the Project will prevent "[i]njury to other legal users of water" including the environment?
 - How the Project will prevent "[u]nreasonable effects on fish, wildlife or other in-stream beneficial uses of water?"
 - And how the Project will prevent "[u]nreasonable effects on the overall economy or the environment in the counties from which the water is transferred?"

The disclosures and analyses contained in the *2010/2011 Water Transfer Program EA/FONSI*, its appendices, and the Project's EA/FONSI are inadequate to satisfy the California Water Code requirements and the Bureau's requirements under the CVPIA and NEPA. DWR has clearly failed its obligations under CEQA by providing no disclosure or analysis at all.

E. Other resource impacts flowing from corrected chains of cause and effect are unrecognized in the EA and should be considered in an EIS instead.

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Regarding surface water reservoir operations in support of the *2013 Water Transfer Program*, we have several questions and concerns:

- Regarding fisheries, do the Bureau and DWR intend to comply with the State Water Resources Control Board's Water Rights Orders 90-05 and 91-01 in order to provide temperature control at or below 56 degrees Fahrenheit for anadromous fish, their redds, and hatching wild salmonid fry, and to provide minimum instream flows of 3,250 cubic feet per second (cfs) between September 1 and February 28, and 2,300 cfs between March 1 and August 31? How will the Bureau and DWR comply with Fish and Game Code Section 5937—to keep fish populations below and above their dams in good condition, as they approve transfers of CVP water from willing CVP and non-CVP contractors to willing buyers? Please reflect on our comments and fish population data above, which demonstrate that the SWP and CVP have a horrendous record since 2000 keeping fish alive, let alone thriving or recovering.
- Regarding public health and safety, the *2010/2011 Water Transfer Program's EA* negligently denies the potential for impacts (p.3-1) and the Project's EA doesn't even bring up the topic. Fluctuating domestic wells can lead to serious contamination from heavy metals and non-aqueous fluids. Additionally, there are numerous hazardous waste plumes in Butte County, which could easily migrate with the potential increased groundwater pumping proposed for the Project. Because the Bureau fails to disclose basic standards for the mitigation and monitoring requirements, it is unknown if hazardous plumes in the areas of origin will be monitored or not. Please note the attached map from the State Water Resources Control Board (2008) that highlights areas vulnerable to groundwater contamination throughout the state. A significant portion of both the areas of origin and the receiving areas are highlighted. When the potential for serious health and safety impacts exists, NEPA and CEQA require that this must be disclosed and analyzed.

In general, the *2013 Water Transfer Program EA/FONSI*—and by logical implication, DWR's actions—consistently avoids full disclosure of existing conditions and baseline data, rendering the Bureau's justifications for the *2013 Water Transfer Program* at best incoherent, and at worst, dangerous to groundwater dependent communities and businesses, domestic well owners, and vulnerable fisheries in tributary streams of the Sacramento River hydrologic region.

F. The *2013 Water Transfer Program* is likely to have a cumulatively significant impact on the environment.

The draft EA/FONSI does not reveal that the current Project is part of a much larger set of plans to develop groundwater in the region, to develop a “conjunctive” system for the region, and to integrate northern California's groundwater into the state's water supply. These are plans that the Bureau, together with DWR, sellers, and other have pursued and developed for many years. Indeed, one of the plans—the short-term phase of the Sacramento Valley Water Management

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Program—is the subject of an ongoing scoping process for a Programmatic EIS that has not yet been completed.⁶

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 provided in details below, instead of assessing the cumulative impacts of the proposed action as part of the larger program that even the Bureau has recognized should be subject to a programmatic EIS (but for which no programmatic EIS has been completed), the Bureau has attempted to separate this program and approve it through another inadequate EA. Further, the Bureau has failed to take into account the cumulative effects of other groundwater and surface water projects in the region, the development of “conjunctive” water systems, and the anticipated further integration of Sacramento Valley surface and ground water into the state water system.

The Bureau’s attempts to frame the *2013 Water Transfer Program* as an isolated *de minimis* project is a shell game, whereby an analysis of the cumulative impacts of individual actions is avoided in direct contravention of NEPA. *See Blue Mountains Biodiversity Project v. United States Forest Service*, 161 F.3d 1208, 1215 (9th Cir. 2008).

G. The Environmental Assessment Fails to Meet the Requirements of NEPA.

Even if an EIS was not clearly required here, which we believe it is, the draft EA/FONSI prepared by the Bureau violates NEPA on its own. As discussed above, the draft EA does not provide the analysis necessary to meet NEPA’s requirements and to support its proposed finding of no significant impact. Further, as outlined above, the draft document fails to provide a full and accurate description of the proposed Project, its purpose, its relationship to myriad other water transfer and groundwater extraction projects, its potentially significant adverse effects on salmon

⁶ *Id.* page 3.

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critical habitat in streams of interest that are tributaries to the Sacramento River, and an assessment of the cumulative environmental impacts of the *2013 Water Transfer Program* when considered together with past, present, and reasonably foreseeable projects, plans, and actions of not only the Bureau and DWR, but also with the past, present, and reasonably foreseeable projects, plans, and actions of others.

Additionally, the draft EA/FONSI fails to provide sufficient evidence to support its assertions that the *2013 Water Transfer Program* would have no significant impacts on the human or natural environments, so neither decision makers nor the public are fully able to evaluate the significance of the *2013 Water Transfer Program*'s impacts. These informational failures complicate AquAlliance's efforts to provide meaningful comments on the full extent of the potential environmental impacts of the Project and on appropriate monitoring and mitigation measures. Accordingly, many of the AquAlliance's comments include requests for additional information.

1. The EA Fails to Consider a Reasonable Range of Alternatives.

NEPA's implementing regulations call for analysis of alternatives is "the heart of the environmental impact statement," 40 C.F.R. §1502.14, and they require an analysis of alternatives within an EA. *Id.* §1408.9. The statute itself specifically requires federal agencies to: *study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning available uses of resources.*

42 U.S.C. §4332(2)(E). Here, because the Bureau's EA considers only the proposed Project and a "No Action" alternative, the EA violates NEPA.

The case law makes clear that an adequate analysis of alternatives is an essential element of an EA, and is designed to allow the decision maker and the public to compare the environmental consequences of the proposed action with the environmental effects of other options for accomplishing the agency's purpose. The Ninth Circuit has explained that "[i]nformed and meaningful consideration of alternatives ... is ... an integral part of the statutory scheme." *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (holding that EA was flawed where it failed adequately to consider alternatives). An EA must consider a reasonable range of alternatives, and courts have not hesitated to overturn EAs that omit consideration of a reasonable and feasible alternative. *See People ex rel. Van de Kamp v. Marsh*, 687 F.Supp. 495, 499 (N.D. Cal. 1988); *Sierra Club v. Watkins*, 808 F.Supp. 852, 870-75 (D.D.C. 1991).

Here, there are only two alternatives presented: the No Action and the Proposed Action. The lack of *any* alternative action proposal is unreasonable and is by itself a violation of NEPA's requirement to consider a reasonable range of alternatives.

Even more significantly, there are numerous other alternative ways to ensure water is allocated reliably when California experiences dry hydrologic years. We described several elements of

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reasonable alternatives above. These are the alternatives that should have been presented for the Bureau's draft EA/FONSI on the *2013 Water Transfer Program* to comply with NEPA. 42 U.S.C. § 4332(2)(E).

2. The EA Fails to Disclose and Analyze Adequately the Environmental Impacts of the Proposed Action

The discussion and analysis of environmental impacts contained in the EA is cursory and falls short of NEPA's requirements, because it lacks a clear and well-described narrative for the proposed *2013 Water Transfer Program*. Please recall that the EA doesn't contain a "purpose" statement. This obscures realistic chains of cause and effect, which in turn prevent accurate and comprehensive accounting of environmental baselines and measurement of the DWB's potential impacts. NEPA's implementing regulations require that an EA "provide sufficient evidence and analysis for determining whether to prepare an [EIS]." 40 C.F.R. §1508.9(a). For the reasons discussed above, the EA fails to discuss and analyze the environmental effects of the water transfers and groundwater substitution proposed by the *2013 Water Transfer Program*. The Bureau must consider and address the myriad environmental consequences that are likely to flow from this proposed agency action.

Along with our significant concerns about the adequacy of the proposed monitoring, the draft EA/FONSI also fails to explain what standards will be used to evaluate the monitoring data, and on what basis a decision to modify or terminate the pumping would be made. In light of the document's silence on these crucial issues, the draft EA/FONSI's conclusion that there will not be significant adverse impacts withers quickly under scrutiny.

3. The EA Fails to Analyze Cumulative Impacts Adequately.

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). 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 in the EA plainly fails to meet this standard.

As discussed throughout these comments, the proposed Project does not exist in a vacuum, is another transfer program in a series of many that have also been termed either "temporary," "short term," "emergency," or "one-time" water transfers, and is cumulative to numerous broad programs or plans to develop regional groundwater resources and a conjunctive use system. The *2013 Water Transfer Program* is also only one of several proposed and existing projects that affect the regional aquifers. The existence of these numerous related projects makes an adequate analysis of cumulative impacts especially important.

4. The Bureau Has Segmented the Project Over Many Years

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The Bureau's participation in planning, attempting to execute, and sometimes executing the following programs, plans and projects has circumvented the requirements of NEPA. DWR's failure to conduct comprehensive environmental review has segmented a known project for decades, which means that the Bureau is also failing to comply with state law as the CVPIA mandates. (EA at p. 10) Such segments include:

- The Sacramento Valley Water Management Agreement was signed in 2002 and the need for a programmatic EIS/EIR was clear and the process was initiated, but never completed.⁷
- 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.
- GCID's *Stony Creek Fan Aquifer Performance Testing Plan* to install seven production wells in 2009 that will extract 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.
- California 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) and
- The planned 2012 water transfers of 76,000 af of CVP water all through ground water substitution.
- The Bureau of Reclamation's 600,000 AF, North-to-South Water Transfer Program. EIS/EIR pending.
- The Bay Delta Conservation Plan.

5. The Bureau Has Failed to Consider the Cumulative Impact of Other Groundwater Development and Surface Water Diversions Affecting the Region

In addition to the improper segmentation evident by the Project EA/FONSI and the long list of projects and plans in Section 4 above, the assessment of environmental impacts is further deficient because the Bureau has failed to consider the cumulative impacts of the proposed groundwater extraction when taken in conjunction with other projects proposed for the development of groundwater and surface water.

⁷ *Id* p. 3

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The Bureau, its contractors, and its partner DWR are party to numerous current and reasonably foreseeable water programs that are related to the water transfers contemplated in the Project EA including, but not limited to, the following:

- Sacramento Valley Integrated Regional Water Management Plan (2006)
- Sacramento Valley Regional Water Management Plan (January 2006)
- Stony Creek Fan Conjunctive Water Management Program
- Sacramento Valley Water Management Agreement (Phase 8, October 2001)
- Draft Initial Study for 2008-2009 Glenn-Colusa Irrigation District Landowner Groundwater Well Program
- Regional Integration of the Lower Tuscan Groundwater Formation into the Sacramento Valley Surface Water System Through Conjunctive Water Management (June 2005) (funded by the Bureau)
- Stony Creek Fan Aquifer Performance Testing Plan for 2008-09
- Annual forbearance agreements (2008 had an estimated 160,000 acre feet proposed).

We briefly describe some of their key elements here.

a) Stony Creek Fan Conjunctive Water Management Program. The SCF Aquifer Plan is part of and in furtherance of the Stony Creek Fan Conjunctive Water Management Program (“SCF Program”). This program is being carried out by GCID, Orland-Artois and Orland Unit Water Association.

The long-term objective of the SCF Program is the development of a “regional conjunctive water management program consisting of a direct and in-lieu recharge component, a groundwater production component, and supporting elements...” (SVWMA: Project 8A Stony Creek Fan Conjunctive Water Management Program (“SVWMA Project 8A”), at 8A-1). The potential supply from such a program was estimated at 50,000 af per year to 100,000 af per year. *Id.*

The SCF Program has three phases: (1) a feasibility study; (2) a demonstration project; and (3) project implementation. Phase I of the SCF Program has already been completed. The SCF Aquifer Plan described in a draft EA/FONSI is part of Phase II of the larger SCF Program. Phase III of the SCF Program will implement the program’s goal of integrating test and operational production wells into the water supply systems for GCID, Orland-Artois, and Orland Unit Water Association for long-term groundwater production in conjunction with surface water diversions.

The Bureau is well aware of the SCF Program, but declined to analyze the environmental effects of the program as a whole, and simply considered the effects of an isolated component of the larger program. Indeed, the Bureau awarded a grant to GCID to fund the SCF Program. The Bureau’s grant agreement states that the SCF Program “target[s] the Lower Tuscan Formation and possibly other deep aquifers in the west-central portion of the Sacramento Valley ... as the source for all or a portion of the additional groundwater production needed to meet [the SCF Partners’] respective integrated water management objectives.” BOR Assistance Agreement No.

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06FG202103 at p. 2. The agreement further provides that “[a]dditional test wells and production wells will be installed within the Project Area.” *Id.*

b) The SCF Program is a Component of the Sacramento Valley Water Management Program. The Sacramento Valley Water Management Program (Phase 8) (“SVWMP”) also includes the SCF Program as one of its elements. (SVWMA Project 8A at pp. 8A-1 to 8A-13).

The SVWMP recognizes that the SCF Program “has the potential to improve operational flexibility on a regional basis resulting in measurable benefits locally in the form of predictable, sustainable supplies, *and improved reliability for water users’ elsewhere in the state.*” *Id.* at p. 8A-2 (emphasis added). By piecemealing this program improperly and analyzing only the small component of the SCF Program, the Bureau has failed to assess the environmental impacts associated not just with the anticipated conjunctive use of the groundwater, but also the effect of the anticipated export of water to other regions of the state.

Additionally, ten years ago, on August 5, 2003, the Bureau published a notice in the Federal Register announcing its intention to prepare a programmatic EIS to analyze the short-term phase of the SVWMP. 68 Fed. Reg. 46218, 46219 (Aug. 5, 2003). Like the SVWMP, this “Short-term Program” for which the Bureau stated its intent to conduct a programmatic EIS included implementation of the SCF Program. *Id.* at 46219, 46220.

c) The SCF Program is Also a Component of the Sacramento Valley Integrated Regional Water Management Program. The Bureau has been working with GCID and others to realize the Sacramento Valley Integrated Regional Water Management Program (“SVIRWMP”). SVIRWMP is comprised of a number of sub-regional projects, including the SCF Program. *See* SVIRWMP, Appendix A at A-5; BOR Assistance Agreement No. 06FG202103. Here again, even though the SCF Aquifer Plan is clearly a necessary component of the SCF Program – which is in turn a component of the SVIRWMP – the draft EA/FONSI failed to even acknowledge, let alone assess, the cumulative impacts of these related projects.

Most obviously, the draft EA wholly fails to assess the impact of the Bureau’s *Sacramento Valley Regional Water Management Plan (2006)* (SVRWMP) and the forbearance water transfer program that the Bureau and DWR facilitate jointly. As noted above, the Programmatic EIS for the 2002 Sacramento Valley Water Management Agreement or Phase 8 Settlement was initiated, but never completed, so the SVRWMP was the next federal product moving the Phase 8 Settlement forward. The stated purpose of the Phase 8 Settlement and the SVRWMP are to improve water quality standards in the Bay-Delta and local, regional, and statewide water supply reliability. In the 2008 forbearance program, 160,000 af was proposed for transfer to points south of the Delta. To illustrate the ongoing significance of the demand on Sacramento Valley water, we understand that GCID alone entered into “forbearance agreements” to provide 65,000 af of water to the San Luis and Delta Mendota Water Authority in 2008, 80,000 af to State Water Project contractors in 2005, and 60,000 af to the Metropolitan Water District of Southern California in 2003.

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Less obvious, but certainly available to the Bureau, are the numerous implementation projects that Phase 8 signatories are pursuing, such as Glenn Colusa Irrigation District's (GCID) 2008 proposal to divert groundwater pumped from private wells to agricultural interests in the District. *See Attach.* (GCID Proposed Negative Declaration, GCID Landowner Groundwater Well Program for 2008-09). Additionally, the draft EA does not consider the cumulative effect of the Lower Tuscan Integrated Planning Program, a program funded by the Bureau that will "integrate the Lower Tuscan formation aquifer system into the management of regional water supplies." Grant Agreement at p. 4. This program, as described by the Bureau, will culminate in the presentation of a proposed water management program for the Lower Tuscan Formation for approval and implementation by the appropriate authorities. Clearly, the cumulative impact of this program and the *2013 Water Transfer Program's* proposed groundwater extraction should have been assessed.

d) There are serious concerns raised by the *2012 Water Transfer Program* to engage in conjunctive management of groundwater and surface water that are not even mentioned, let alone addressed, in the Project EA. For example, in 1994, following seven years of low annual precipitation, Western Canal Water District and other irrigation districts in Butte, Glenn and Colusa counties exported 105,000 af of water extracted from the Tuscan aquifers to buyers outside of the area. This early experiment in the *conjunctive use* of the groundwater resources – conducted without the benefit of environmental review – caused a significant and immediate adverse impact on the environment (Msangi 2006). Until the time of the water transfers, groundwater levels had dropped but the aquifers had sustained the normal demands of domestic and agricultural users. The water districts' extractions, however, lowered groundwater levels throughout the Durham and Cherokee areas of eastern Butte County (Msangi 2006). The water level fell and the water quality deteriorated in the wells serving the City of Durham (Scalmanini 1995). Irrigation wells failed on several orchards in the Durham area. One farm never recovered from the loss of its crop and later entered into bankruptcy. Residential wells dried up in the upper-gradient areas of the aquifers as far north as Durham.

Finally, with the myriad projects and programs that are ignored in the *2010/2011 Water Transfer Program's* EA and the Project's EA that have never been analyzed cumulatively, only the *2010/2011 Water Transfer Program's* EA discloses that there could be a *devastating* impact to groundwater: "The reduction in recharge due to the decrease in precipitation and runoff in the past years in addition to the increase in groundwater transfers would lower groundwater levels. Multi-year groundwater acquisition under cumulative programs operating in similar areas of the Sacramento Valley could further reduce groundwater levels. Groundwater levels may not fully recover following a transfer and may experience a substantial net decline in groundwater levels over several years. This would be a substantial cumulative effect," (EA p. 3-108). While the honesty is refreshing, the lack of comprehensive monitoring, mitigation, and project cessation mechanisms is startling. It is also noteworthy that this admission is not included in the Project's EA. This alone warrants the preparation of an EIS.

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Here again, the current document does not discuss or analyze these potential impacts, their potential scope or severity, or potential mitigation efforts. Instead, it relies on the existence of local ordinances, plans, and oversight with the monitoring and mitigation efforts of individual “willing sellers” to cope with any adverse environmental effects. However, as we have shown above, for example, the Glenn County management plan is untested, does not provide adequate protection and monitoring, and relies on “voluntary” enforcement of the region’s important groundwater resources. To further clarify the inadequacy of relying on local plans and ordinances, Butte County’s Basin Management Objectives have no enforcement mechanism and Butte County’s Chapter 33, while it requires CEQA review for transfers that include groundwater, has never been tested. There is thus very limited local protection for groundwater within a county, and no authority or mechanism to influence pumping in a different county from a shared groundwater basin.

6. The 2013 Water Transfer Program is likely to serve as precedent for future actions with significant environmental effects.

As set forth above, this Project is part of a broader effort by the Bureau and DWR to develop groundwater resources and to integrate groundwater into the state system. For these reasons, the *2013 Water Transfer Program* is likely to “establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration” (40 C.F.R. §1508.27(b)(6)), and should be analyzed in an EIS.

7. The 2013 Water Transfer Program has potential adverse impacts for a threatened species.

As the Bureau of Reclamation is well aware, the purpose of the ESA is to conserve the ecosystems on which endangered and threatened species depend and to conserve and recover those species so that they no longer require the protections of the Act. 16 U.S.C. § 1531(b), ESA § 2(b); 16 U.S.C. § 1532(3), ESA §3(3) (defining “conservation” as “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary”). “[T]he ESA was enacted not merely to forestall the extinction of species (i.e., promote species survival), but to allow a species to recover to the point where it may be delisted.” *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Service*, 378 F.3d 1059, 1069 (9th Cir. 2004). To ensure that the statutory purpose will be carried out, the ESA imposes both substantive and procedural requirements on all federal agencies to carry out programs for the conservation of listed species and to insure that their actions are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536. *See NRDC v. Houston*, 146 F.3d 1118, 1127 (9th Cir. 1998) (action agencies have an “affirmative duty” to ensure that their actions do not jeopardize listed species and “independent obligations” to ensure that proposed actions are not likely to adversely affect listed species). To accomplish this goal, agencies must consult with the Fish and Wildlife Service whenever their

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actions “may affect” a listed species. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(a). Section 7 consultation is required for “any action [that] may affect listed species or critical habitat.” 50 C.F.R. § 402.14. Agency “action” is defined in the ESA’s implementing regulations to “mean all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States.” 50 C.F.R. § 402.02.

The giant garter snake (“GGS”) is an endemic species to Central Valley California wetlands. (Draft Recovery Plan for the Giant Garter Snake (“DRP”) 1). The giant garter snake, as its name suggests, is the largest of all garter snake species, not to mention one of North America’s largest native snakes, reaching a length of up to 64 inches. Female GGS tend to be larger than males. GGS vary in color, especially depending on the region, from brown to olive, with white, yellow, or orange stripes. The GGS can be distinguished from the common garter snake by its lack of red markings and its larger size. GGS feed primarily on aquatic fish and specialize in ambushing small fish underwater, making aquatic habitat essential to their survival. Females give birth to live young from late July to early September, and brood size can vary from 10 to up to 46 young. Some studies have suggested that the GGS is sensitive to habitat change in that it prefers areas that are familiar and will not typically travel far distances.

The Project’s EA failure to discuss GGS is arbitrary and capricious. 1) Either the EA assertion on page 12 is incorrect stating that, “Idling rice fields would reduce the use of farm equipment...” in reference to emissions to air or the EA is failing to disclose impacts to GGS from fallowing. If there are plans to fallow, there will be potentially significant impacts to GGS and if fallowing won’t occur, emissions to air will not be reduced as claimed. Please clarify this. 2) Moving on, GGS depend on more than rice fields in the Sacramento Valley.⁸ “The giant garter snake inhabits marshes, sloughs, ponds, small lakes, low gradient streams, other waterways and agricultural wetlands such as irrigation and drainage canals and rice fields, and the adjacent uplands. Essential habitat components consist of (1) adequate water during the snake’s active period, (early spring through mid-fall) to provide a prey base and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat...” (Id at p. 3) What analysis has occurred that removes GGS from consideration for potential significant impacts? If the 2013 Water Transfer Program will only use groundwater substitution to make river water sales possible, how will that affect streams, wetlands, and emergent, herbaceous wetland vegetation? How will it be monitored?

The Bureau’s Biological Assessment for the 2009 DWB disclosed that one GGS study in Colusa County revealed the “longest average movement distances of 0.62 miles, with the longest being 1.7 miles, for sixteen snakes in 2006, and an average of 0.32 miles, with the longest being 0.6 miles for eight snakes in 2007.” (BA at p.16) However, in response to droughts and other changes in water availability, the GGS has been known to travel up to 5 miles in only a few days,

⁸ **Programmatic Consultation with the U.S. Army Corps of Engineers**

404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California

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but the impacts on GGS survival and reproduction from such extreme conditions are unknown due to the deficiency in data and analysis.

Flooded rice fields, irrigation canals, streams, and wetlands in the Sacramento Valley can be used by the giant garter snake for foraging, cover and dispersal purposes. The Bureau's 2009 Biological Assessment acknowledged the failure of Bureau and DWR to complete the Conservation Strategy that was a requirement of the 2004 Biological Opinion. (BA at p. 19-20) To date it is still not done. What possible excuse delayed this essential planning effort?

The *2010/2011 Water Transfer Program* also proposed to delete or modify other mitigation measures previously adopted as a result of the EWA EIR process to substantially reduce significant impacts, but without showing they are infeasible. For example, the Bureau and DWR proposed to delete the 160 acre maximum for "idled block sizes" for rice fields left fallow rather than flooded and to substitute for it a 320 acre maximum. (See 2003 Draft EWA EIS/EIR, p. 10-55; 2004 Final EWA EIS/EIR, Appendix B, p. 18, Conservation Measure # 4.) There is no evidence to support this change. In light of the agencies failure to complete the required Conservation Strategy mentioned above and the data gathered in the Colusa County study, how can the EA suggest that doubling the fallowing acreage is in any way biologically defensible? The agencies additionally propose to delete the mitigation measure excluding Yolo County east of Highway 113 from the areas where rice fields may be left fallow rather than flooded, except in three specific areas. (See 2004 Final EWA EIS/EIR, Appendix B, p. 18, Conservation Measure # 2.) What is the explanation for this change? What are the impacts from this change?

Deleting these mitigation measures required by the EWA approval would violate NEPA and CEQA's requirements that govern whether, when, and how agencies may eliminate mitigation measures previously adopted under NEPA and CEQA. (See *Napa Citizens for Honest Government v. Napa County Board*.)

The *2010/2011 Water Transfer Program* failed to include sufficient safeguards to protect the giant garter snake and its habitat. The EA concluded, "The frequency and magnitude of rice land idling would likely increase through implementation of water transfer programs in the future. Increased rice idling transfers could result in chronic adverse effects to giant garter snake and their habitats and may result in long-term degradation to snake populations in the lower Sacramento Valley. In order to avoid potentially significant adverse impacts for the snake, additional surveys should be conducted prior to any alteration in water regime or landscape," (p. 3-110). To address this significant impact the Bureau proposed relying on the 2009 DWB Biological Opinion, which was a one-year BO. The expired BO highlighted the Bureau and DWR's avoidance of meeting federal and state laws stating, "This office has consulted with Reclamation, both informally and formally, approximately one-half dozen times over the past 8 years on various forbearance agreements and proposed water transfers for which water is made available for delivery south of the delta by fallowing rice (and other crops) or substituting other crops for rice in the Sacramento Valley. Although transfers of this nature were anticipated in our biological opinion on the environmental Water Account, that program expired in 2007 and, to

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our knowledge, no water was ever made available to EWA from rice fallowing or rice substitution. The need to consult with such frequency on transfers involving water made available from rice fallowing or rice substitution suggests to us a need for programmatic environmental compliance documents, including a programmatic biological opinion that addresses the additive effects on giant garter snakes of repeated fallowing over time, and the long-term effects of potentially large fluctuations and reductions in the amount and distribution of rice habitat upon which giant garter snakes in the Sacramento Valley depend,” (p.1-2). AquAlliance agrees with the U.S. Fish and Wildlife Service that programmatic environmental compliance is needed under the Endangered Species Act, NEPA, CEQA, and the California Endangered Species Act.

It is conspicuously noticeable that GGS are not mentioned even if fallowing is not used although the statement from the EA on page 12 leaves some confusion. Increased groundwater extraction will impact the aquatic and terrestrial environment that GGS depend upon. The Bureau should also prepare an EIS because the *2013 Water Transfer Program* will, in combination with all its past and reasonably foreseeable plans, programs, and projects, likely have significant environmental effects on the Giant Garter Snake, a listed threatened species under the federal Endangered Species Act and California Endangered Species Act. 40 C.F.R. §1508.27(b)(9).

In addition to GGS, as discussed above, unsupported assertions, that impacts to aquatic species will be below a level of significance, ring hollow and lack foundational data (EA at pp. 10, 12, 17). Habitat values are also essential to many other special status species that utilize the aquatic and/or riparian landscape including, but not limited to, giant garter snake, bank swallow, greater sandhill crane, American shad, and more. Where is the documentation of the potential impacts to these species?

II. Purpose and Need Issues of the 2013 Water Transfer Program

A. The Purpose and Need Section of the EA/FONSI fails to specify the policy framework upon which the 2013 Water Transfer Program is based.

As mentioned many times, the Project’s EA/FONSI fails to provide a statement of purpose, and the need statement on page 4 is cursory at best. Avoiding the requirements of NEPA, and for DWR – CEQA, for the *2013 Water Transfer Program* does not reflect the actual environmental effects of the proposal—which are similar to the proposed 1994 Drought Water Bank and for which a final Program Environmental Impact Report was completed in November 1993. In 2000, the Governor’s Advisory Drought Planning Panel report, *Critical Water Shortage Contingency Plan* promised a program EIR on a drought-response water transfer program, but it was never undertaken. Twice in recent history, the state readily acknowledged that CEQA review for a major drought water banking program was appropriate. So, the 2009 DWB Notice of Exemption and complete avoidance of CEQA review for the *2013 Water Transfer Program* reflects an ongoing end-run around established water law and CEQA.

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We question the merits of and need for the *2013 Water Transfer Program* itself. The need for transfers reflects less on the type of water year than on the failures by the Agencies to pursue a sensible water policy framework, given that California has a Mediterranean climate with major fluctuations in precipitation and long periods of drought (Anderson, 2009). AquAlliance believes that the Agencies continue to avoid the inconvenient truths about California's climate, the current and future needs from climate change, and go too far to help a few junior water right holders. The Project intends to directly benefit the areas of California whose water supplies are the least reliable by operation of state water law. Though their unreliable supplies have long been public knowledge, local, state, and federal agencies in these areas have failed to stop blatantly wasteful uses and diversions of water and to pursue aggressive planning for regional water self-sufficiency.

The EA/FONSI fails to provide a statement of purpose and the need statement on page 4 is cursory at best. At a minimum, a purpose statement must be presented in the EA and clearly identified. The purpose and need statements should also include specific criteria and a delineation of priorities that the Project must adhere to, but they are absent.

The EA/FONSI makes no attempt to place the *2013 Water Transfer Program* into the context of the 2009 California Water Plan that the state most recently completed, which contains many recommendations for increasing regional water self-sufficiency, but it appears that this plan is largely on the shelf now. Pursuing watershed self-sufficiency would be a proactive and sustainable through the many types of water years, which is why many coastal communities are aggressively meeting this challenge. It is distressing to see that the Bureau and the state of California resist such as strategy and continue to pursue multi-year, serial, "temporary" water transfers and large engineering projects that are prohibitively costly and low in water and environmental benefits. This is not a sustainable water policy for California.

The missing purpose section and weak need sections of the Project's EA/FONSI, the *2010/2011 Water Transfer Program*, and the *2009 Governor's drought emergency declaration* cry out for a cogent policy framework. What is the state doing to facilitate regional water self-sufficiency for these areas with the least reliable water rights and how is the Bureau assisting or motivating such action? Instead, the state and federal response to another dry year falls back on the continuation of multi-year, serial, "temporary" water transfers.

B. The *2013 Water Transfer Program* is not needed because the state's current allocation system—in which the federal Bureau of Reclamation participates—wastes water profligately.

The incentive from the state's lax system of regulation of California's State Water Project and Central Valley projects is to deliver the water now, and worry about tomorrow later. Indeed, the State Water Resources Control Board (SWRCB) has been AWOL for decades. In response to inquiries from the Governor's Delta Vision Task Force in 2009, the SWRCB acknowledged that

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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. In other words, **water rights on paper are 8.4 times greater than the real water in California 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, of which there are another 10,110 disclosed right holders. Many more remain undisclosed.*

Like federal financial regulators failing to regulate the shadow financial sector, subprime mortgages, Ponzi schemes, and toxic assets of our recent economic history, the state of California has 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 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 systematic 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 Board on April 21, 2011 (attached).

We question the Bureau and DWR’s desire for the Project, since reservoir levels throughout California are quite decent and groundwater is and will be necessary to support river and stream flows, aquatic and terrestrial species, and economic activity in the areas origin as California grapples with unpredictable, but well known, precipitation patterns and climate change. Don Pedro Reservoir on the Tuolumne River is at 98 percent of historic average. (CDEC, May 20, 2013)⁹ The CVP’s Millerton is at 99% and Folsom is at 90%. *Id* These two reservoirs must provide water to the agricultural San Joaquin River Exchange Contractors first, and they have among the most senior rights on that river. Rice growers in the Sacramento Valley are receiving full deliveries from the CVP’s Shasta reservoir (88% of historic average) and their Yuba River water supplies. *Id* The CVP’s own New Melones Reservoir on the Stanislaus River, which contributes to Delta water quality as well as to meeting eastern San Joaquin Valley irrigation demands, is at 91 percent of normal for this time of year. *Id*

Moreover, the SWP’s terminal reservoirs at Pyramid (104 percent of average) and Castaic (93 percent of average) Lakes are slightly above and below normal levels for this time of year, presumably because DWR has been releasing water from Oroville (96% historic average) for delivery to these reservoirs. *Id*

We acknowledge that the snowpack is very poor this year.¹⁰ The fact that reservoirs of the CVP and SWP with more senior responsibilities in the water rights hierarchy are doing so well, but

⁹ <http://cdec.water.ca.gov/cdecapp/resapp/getResGraphsMain.action>

¹⁰ <http://cdec.water.ca.gov/snow/>

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admittedly there is so little to refill them, certainly suggests caution for deliveries. Still, given what is known, these reservoir levels indicate that most major cities and most Central Valley farmers are very likely to have enough water for this year. The demands by junior water rights holders, who expect to receive little water this year, do so because of the low priority of their water service contracts within the Central Valley Project—their imported surface supplies are therefore less reliable in dry times. It is the normal and appropriate functioning of California’s system of water rights law that makes it so.

The efforts of the Bureau and DWR to initiate water sales from the Sacramento, Feather, and Yuba rivers with groundwater substitution are only intended to benefit the few western San Joaquin Valley farmers whose contractual surface water rights have always been less reliable than most—and whose lands are the most problematic for irrigation. Since these growers have chosen to harden demand by planting permanent crops, a very questionable business decision, will the Bureau please explain why this “tail” in water rights is wagging the dog? Compounding the insanity of growing perennial crops in a desert is the result where in excess of 1 million acres of irrigated land in the San Joaquin Valley and the Tulare Lake Basin are contaminated with salts and trace metals like selenium, boron, arsenic, and mercury. This water drains back—after leaching from these soils the salts and trace metals—into sloughs and wetlands and the San Joaquin River, carrying along these pollutants. Retirement of these lands from irrigation usage would stop wasteful use of precious fresh water resources and help stem further bioaccumulation of these toxins that have settled in the sediments of these water bodies.

The *2013 Water Transfer Program* would exacerbate pumping of fresh water from the Delta, which has already suffered from excessive pumping over the last 12 years. Pumped exports cause reverse flows to occur in Old and Middle Rivers and can result in entrainment of fish and other organisms in the pumps. Pumping can shrink the habitat for Delta smelt as well, since less water flows out past Chipps Island through Suisun Bay, which Delta smelt often prefer. AquAlliance shares the widely held view that operation of the Delta export pumps is the major factor causing the Pelagic Organism Decline (POD) and in the deteriorating populations of fall-run Chinook salmon. The State Water Resources Control Board received word in early December that the Fall Midwater Trawl surveys for September and October 2012 showed horrendous numbers for the target species. The indices for longfin smelt, splittal, and threadfin shad reveal the lowest in history.¹¹ Delta smelt, striped bass, and American shad numbers remain close to their lowest levels. *Id*

New capital facilities should be avoided to save on costly, unreliable, and destructive water supplies that new dams and massive, 40-foot diameter “peripheral tunnels” represent. Moreover, these facilities would need new water rights; yet the most reliable rights in California are always the ones that already exist—and of those, they are the ones that predate the California State Water Project and the federal Central Valley Project. We should apply our current rights far more efficiently—and realistically—than we do now. California should instead pursue a “no-

¹¹ <http://www.dfg.ca.gov/delta/data/fmwt/Indices/index.asp>

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regrets” policy incorporating aggressive water conservation strategies, careful accounting of water use, research and technological innovation, and pro-active investments.¹²

III. General Comments

1. Where are the materials required in the Criteria Checklist for Complete Written Transfer Proposals, Appendix 1 of the 1993 *Interim Guidelines for Implementation of the Water Transfer Provisions of the Central Valley Project Improvement Act (Title XXXIV of Public Law 102-575)*? In particular, where are the following: “Comprehensive ground-water basin study or evaluation of ground-water supplies demonstrating transfer will have no significant long-term adverse impacts on ground-water conditions, inter-related surface streams, or other ground-water supplies in Project service area; OR Comprehensive evaluation of the potential impact on ground-water supplies accompanied by an adopted ground-water management plan?”
 - (3) Location map of ground-water well(s) to be utilized.
 - (4) Drillers log for ground-water well(s) to be utilized.
 - (5) Provide location of other ground-water wells in Project service area.
 - (6) Identify and document area(s) normally irrigation by wells.”
2. How is the EA cumulative total for transfers, 190,906 AF, reached (p. 29)? The direct Project impacts are listed as 37,505 AF (EA at p. 9), the non-CVP groundwater substitution is 92,806, non-CVP reservoir water is 95,000, and other non-CVP water is 3,100 (EA at p. 31). It would help the public understand the proposed Project if the total quantity of water involved in the Project wasn’t so opaque.
3. The following paragraph in the EA raises numerous questions and concerns.

“Reclamation approves transfers consistent with provisions of state law and/or the CVPIA that protect against injury to third parties as a result of water transfers. Several important CVPIA principles include requirements that the transfer will not violate the provisions of Federal or State law, will have no significant adverse effect on the ability to deliver CVP water, will be limited to water that would have been consumptively used or irretrievably lost to beneficial use, will have no significant long-term adverse impact on groundwater conditions, and will not adversely affect water supplies for fish and wildlife purposes. Reclamation will not approve any transfer of water for which these basic principles have not been adequately addressed.” (EA at p. 10)

 - a. How is water for the Project considered, “[c]onsumptively used or irretrievably lost to beneficial use,” with groundwater substitution in the Sacramento Valley? Page 4 of the *Interim Guidelines for Implementation of the Water Transfer Provisions of the Central Valley Project*

¹² See especially, Pacific Institute, *More with Less: Agricultural Water Conservation and Efficiency in California, A Special Focus on the Delta*, September 2008; Los Angeles Economic Development Corporation, *Where Will We Get the Water? Assessing Southern California’s Future Water Strategies*, August 2008, and Lisa Kresge and Katy Mamen, *California Water Stewards: Innovative On-farm Water Management Practices*, California Institute for Rural Studies, January 2009.

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Improvement Act (Title XXXIV of Public Law 102-575) define irretrievable loss to beneficial use as “[d]eep percolation to an unusable groundwater aquifer (e.g., saline sink or a groundwater aquifer that is polluted to the degree that water from the aquifer cannot be directly used.” The groundwater basins that are part of the Project do not fit this definition.

- b. The groundwater pumped for the Project is a substitute and would not have been used consumptively except for the sale of river water. This violates section H of the *Interim Guidelines for Implementation of the Water Transfer Provisions of the Central Valley Project Improvement Act (Title XXXIV of Public Law 102-575)* (p. 4)

If the Project is approved, it flies in the face of CVPIA requirements.

4. Shasta County is not listed in the Affected Environment section although Anderson Cottonwood Irrigation District is participating in the proposed Project (EA at p. 21). If the Bureau intended to identify the counties by groundwater basin, the EA must call out the Redding Basin and Shasta County.

IV. Conclusion

The Bureau’s *2010/2011 Water Transfer Program’s EA/FONSI* stated on page 3-16: *California Water Code Section 1810 and the CVPIA protect against injury to third parties as a result of water transfers. Three fundamental principles include (1) no injury to other legal users of water; (2) no unreasonable effects on fish, wildlife or other in-stream beneficial uses of water; and (3) no unreasonable effects on the overall economy or the environment in the counties from which the water is transferred.*

The current Project’s EA/FONSI presents this differently:

- “Reclamation approves transfers consistent with provisions of state law and/or the CVPIA that protect against injury to third parties as a result of water transfers.” (EA at p.12)
- “[w]ill not adversely affect water supplies for fish and wildlife purposes.” (EA at p.12)
- Adds, “[w]ill have no significant long-term adverse impact on groundwater conditions...” (EA at p. 12)
- Omits, “[n]o unreasonable effects on the overall economy or the environment in the counties from which the water is transferred.” 2010/2011 Water Transfer Program EA at p. 3-16)

We unreservedly state to you that the two draft EA/FONSI, since the *2010/2011 Water Transfer Program’s EA/FONSI* is incorporated by reference, appear to describe a project, since they are quite similar, that would fail all of the tests required by the CVPIA and state law as currently described. The *2010/2011 Water Transfer Program* had and the *2013 Water Transfer Program* clearly has the potential to affect the human and natural environments, both within the

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Sacramento Valley as well as in the areas of conveyance and delivery. It is entirely likely that injuries to other legal users of water, including those entirely dependent on groundwater in the Sacramento Valley, will occur if this project is approved. Groundwater, fishery and wildlife resources are also likely to suffer harm as instream users of water in the Sacramento Valley as well as terrestrial habitat upon which fishery and wildlife resources depend. And the economic effects of the proposed Project are at best poorly understood through the EA/FONSI. To its credit, at least the Bureau studied the proposed project, while DWR has completely avoided CEQA, thereby enabling the agency to ignore these potential impacts outside a courtroom.

Taken together, the Bureau and DWR treat these serious issues carelessly in the EA/FONSI, the *Draft Technical Information for Water Transfers in 2013* and in DWR's specious avoidance of CEQA review. In so doing, the Agencies deprive decision makers and the public of their ability to evaluate the potential environmental effects of this Project and violate the full-disclosure purposes and methods of both the National Environmental Policy Act and the California Environmental Quality Act.

Sincerely,



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