

July 30, 2015

Glenn-Colusa Irrigation District Thaddeus Bettner, General Manager 344 East Laurel Street Willows, CA 95988

Re: Comments on the Draft Environmental Impact Report for the Glenn Colusa Irrigation District 10-Wells Project (Groundwater Supplemental Supply Project SCH# 2014092076)

Dear Mr. Bettner:

AquAlliance submits the following comments and questions on the Draft Environmental Impact Report ("DEIR") for the Glenn Colusa Irrigation District ("GCID") 10-Wells Project (Groundwater Supplemental Supply Project) ("Project"). These comments represent the comments of AquAlliance and its members. The Project proposes to install five new production wells and continue operating five additional production wells during dry and critically dry years for 8.5 months from approximately February 15-Marh 15 and April 1-November 15. The annual, maximum, cumulative total pumping is 28,500 acre-feet ("af") and is more water than the annual use of the Chico district of California Water Service Company that serves over 100,000 people.¹

Unfortunately, the Project description fails to disclose details that are necessary for the public to review and comment. Moreover, there are no alternatives presented to the public beyond the No Project Alternative. The repeated use of conclusory statements leads to an absence of impacts in the EIR that are not supported by evidence. The DEIR as written fails to make a technically persuasive case for the 10 wells, and therefore the proposed Project should be rejected until the lead agency/Project proponent, GCID, can more effectively present scientific principles and analysis instead of mere assertions of negligible impact to third-parties and the environment. The recirculation of a new Draft EIR will be required because of the extreme deficiencies in the DEIR currently out for public review. The deficiencies in the DEIR cannot and will not be evaded by responses to comments in a Final EIR.

We include by reference all other letters submitted in response to this DEIR and submit comments and attachments created for AquAlliance by Kit Custis, AquAlliance's comments and attachments to the 10-Year Water Transfer Program, and an electronic copy of the report *Hydrostratigraphy and Pump-test Analysis of the Lower Tuscan/Tehama Aquifer, Northern Sacramento Valley, CA* that was hand delivered to the GCID office on July 28, 2015.

¹ California Water Service Company 2010 Urban Water Management Plan Chico-Hamilton City District, p. 32.

I. Legal Requirements Under CEQA

Under CEQA, the project must include "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment..."² To comply with CEQA's standards for completeness, the project description must address "not only the immediate environmental consequences of going forward with the project, but also all 'reasonably foreseeable consequence[s] of the initial project'."³ As courts have recognized for decades, "an accurate, stable and finite project description" is "the sine qua non of an informative and legally sufficient EIR."⁴ Reliance on a "curtailed, enigmatic or unstable definition of the project" stands as the paradigm of legal error under CEQA, because it "draws a red herring across the path of public input."⁵ An "EIR may not define a purpose for a project and then remove from consideration those matters necessary to the assessment whether the purpose can be achieved."⁶ CEQA requires "interactive process of assessment of environmental impacts and responsive project modification which must be genuine."⁷

A lawful project description under CEQA helps the lead agency "develop a reasonable range of alternatives to evaluate in the EIR [that] will aid the decision-makers..."⁸ However, "a lead agency may not give a project's purpose an artificially narrow definition...."⁹ A "curtailed or distorted project description may stultify the objectives of the reporting process."¹⁰ In Inyo III, the court rejected the Los Angeles Department of Water and Power's attempt in its EIR to "narrow the city's obligation—and the scope of this lawsuit—down to the relatively small flow of underground water destined for in-valley use."¹¹ That narrow definition evaded the county's warning that EIR simply assumed the "filling of the second aqueduct," and the State Board's warning that the narrow definition diverted attention "from the impacts of the major project which is the importation of additional water to Los Angeles."¹² The "selection of a narrow project as the launching pad for a vastly wider proposal frustrated CEQA's public information aims The department's calculated selection of its truncated project concept was not an abstract violation of CEQA," but rather, a failure to proceed "in a manner required by law."¹³ The "impermissibly truncated" and inconsistent project definition in the EIR also unlawfully skewed the lead agency's assessment of the "no project" alternative and project alternatives.¹⁴

¹⁴ Id. at 200-206.

² 14 Cal. Code Regs., § 15368; see also Nelson v. County of Kern (2010) 190 Cal.App.4th 252, 271.

³ Communities for a Better Environment v. City of Richmond (2010) 184 Cal.App.4th 70, 82 (quoting Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova (2007) 40 Cal.4th 412, 428; Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 391, fn. 2 (Laurel Heights I).
⁴ County of Inyo v. City of Los Angeles (Inyo III) (1977) 71 Cal.App.3d 185, 199.

⁵ Id. at 199.

⁶ County of Inyo v. City of Los Angeles (Inyo V) (1981) 124 Cal.App.3d 1, 9.

⁷ County of Inyo v. City of Los Angeles (Inyo VI) (1984) 160 Cal.App.3d 1178, 1183; see Id. at 1186 (project cannot be defined to set up "a CEQA turkey shoot").

⁸ 14 Cal. Code Regs, §15124(b); see also In Re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings (In Re Bay-Delta) (2008) 43 Cal.4th 1143, 1166 (lead agency "may structure its EIR alternatives analysis around a reasonable definition of underlying purpose and need").
⁹ Id.

¹⁰ Inyo III, 71 Cal.App.3d 185, 192; see also Inyo VI, 160 Cal.App.3d at 1186.

¹¹ Inyo III, 71 Cal.App.3d at 196.

¹² Id. at 198.

¹³ Id. at 200 (quoting Pub. Res. Code, § 21168.5.

In Communities for a Better Environment, the court held that the City of Richmond's EIR for a refinery project "fails as an informational document," in part because the EIR's project description "is inconsistent and obscure as to whether the Project enables the Refinery to process heavier crude."¹⁵ The court noted that conflicting information in the EIR, and in 10-K statements filed with the Securities and Exchange Commission, contradicted the benign account provided in the EIR. The substantial evidence test was "not relevant" to assessment of violations of CEQA's information disclosure provisions. If the EIR does not "adequately apprise all interested parties of the true scope of the project for intelligent weighing of the environmental consequences, informed decision-making cannot occur under CEQA and the final EIR is inadequate as a matter of law.¹⁶

Project Definition in DEIR

Fundamental Purpose

The DEIR simply states that the Project "is proposing to install and operate five new groundwater production wells and operate five existing groundwater wells to augment District surface water supplies during dry and critically dry water years." (p. 2-1) The wells are proposed to operate "as needed during dry and critically dry years" until they reach a "maximum cumulative total annual pumping volume of 28,500 ac-ft." (Id.)

A complete and accurate description of the existing and affected environmental setting is critical for an adequate evaluation of impacts to it. *See e.g. San Joaquin Raptor/Wildlife Rescue Ctr. v. County of Stanislaus* (1994) 27 Cal.App.4th 713; *Galante Vineyards v. Monterey Peninsula Water Mgmt. Dist.* (1997) 60 Cal.App.4th 1109, 1122; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 955; *Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 94.

As discussed, below, and in the expert reports created by Kit Custis on behalf of AquAlliance, the DEIR fails to comport with these standards.

Relationship to Past Projects and Plans

The Project is part of larger GCID projects, plans, grants, and agreements to transfer water (aka conjunctive use) and is also integrally related to other inter-connected actions by GCID, the California Department of Water Resources ("DWR"), the U.S. Bureau of Reclamation ("Bureau"), and others in the Sacramento Valley, and has the potential to have significant and far-reaching environmental impacts. However, the DEIR fails to make these connections that illustrate GCID's pursuit of conjunctive use projects.

For example, the broader history of the existing wells and GCID's delay in analyzing their planned long-term use for transfers and non-overlying water projects is not revealed. First, GCID was sued in 2007 over the claim that installing the wells (7 at the time) was exempt from CEQA because they were planned just for "research," despite the fact that GCID and local partners engaged in the Stony Creek Fan Project ("SCFP"). The SCFP's aquifer performance testing was hardly research, but preparation to enter the emerging water market as described in the 2005 Lower Tuscan grant proposal: "…this [conjunctive water use] program would provide

¹⁵ 184 Cal.App.4th at 89.

¹⁶ Id. at 83 (citations omitted).

opportunities to benefit from water transfers through the state and federal water projects. Overall program recovery would occur through groundwater substitution from wells tapping the lower Tuscan Formation aquifer system. These wells could be operated in the Butte Basin in conjunction with the SWP [State Water Project – Oroville] or in eastern Glenn and Colusa County in conjunction with the CVP [Central Valley Project– Shasta]."¹⁷ The district's attempt to now evaluate impacts from these wells in this DEIR cannot be limited to this project's artificially limited project description, but rather, must evaluate the whole of the impacts of operating these wells. Similarly, and as discussed further below, the DEIR should not simply assume that the construction of new wells will not foreseeably result in environmental impacts greater than those contemplated by this project's artificially narrow project description.

Also omitted from the DEIR is the assurance in the Bureau's 2009 Environmental Assessment for the *Glenn-Colusa Irrigation District Stony Creek Fan Aquifer Performance Testing Plan* that use of the wells in any way beyond "research" required additional analysis. The Findings of No Significant Impact document for that project states, that: "The data and information compiled during implementation of this aquifer testing plan would be used as input prior to longer term use of the wells and would require future environmental review." (U.S. Bureau of Reclamation, p. 10) In addition, the Glenn-Colusa Irrigation District Stony Creek Fan Aquifer Performance Testing Plan ("APT") response to comments claimed: "The APT is a two-year program and the test production wells would not be used after conclusion of the program unless there is a subsequent decision to do so that is supported by the appropriate level of environmental review. This commitment is confirmed in the SCF APT itself, the notice of exemption issued by GCID in the related CEQA review process (See Appendix A), the EA (page 15), as well as briefs filed in the Superior Court litigation and the Court's ruling in that case." (p.7)

Despite the promises and legal commitments, GCID waited until 2015 to produce this DEIR while using the wells for multiple purposes: "GCID first pumped these wells in 2007, at 547 ac-ft for that year. In 2008 and 2012, the wells were pumped at less than 500 ac-ft; and in 2009, a dry year, GCID pumped 1,405 ac-ft. In 2010, no groundwater was pumped. GCID entered into two water transfer agreements, in 2011 and 2013, and pumped 6,300 and 5,000 ac-ft, respectively, in those years to supply the water transfer programs (GCID, 2013)." (DEIR p. 3-15). What is not disclosed in the DEIR is that GCID planned to sell 85,000 af to San Luis Delta Mendota Water Authority ("SLDMWA") in 2008 by fallowing no more than 20 percent of the district's irrigated acreage, crop shifting, and "[2],500 acre-feet that could be transferred would be made available by groundwater substitution attributable to pumping from two GCID-owned electric wells."¹⁸ The contribution the existing five and newly-proposed five wells would provide to these and similar projects cannot be circumscribed by an artificial label on the project description, but instead, must be considered in conjunction.

It is clearly a significant omission that the DEIR doesn't disclose what transpired in 2014 or what is planned for 2015. What is known by AquAlliance to date is:

¹⁷ Glenn Colusa Irrigation District and the Natural Heritage Institute, June, 2005. Proposition 50 planning grant proposal to create the Lower Tuscan IRWMP entitled: *Regional Integration of the Lower Tuscan Groundwater Formation into the Sacramento Valley Surface Water System Through Conjunctive Water Management*.

¹⁸ GCID 2008. Initial Study and Proposed Negative Declaration for Option Agreement Between Glenn-Colusa Irrigation District, San Luis & Delta-Mendota Water Authority and the United States Bureau of Reclamation for 2008 Operations, and Related Forbearance Program, pp. 2-3.

- After GCID's General Manager, Thad Better, assured the public at a 2014 Chico water forum that the GCID wells weren't being used, it turned out that GCID had the 5 wells running to help landowners flood their fields and pumped 459 af.¹⁹
- The 5 wells were also used to transfer 4,512 af to the Tehama Colusa Canal Authority in 2014.²⁰
- In 2015 GCID is selling water again to Tehama Colusa Canal Authority by allowing their members to use personal wells 15,269 acre-feet (af) of which 11,494 af will be made available by pumping groundwater.
- GCID also committed to sell 55,283 af of Sacramento River water to San Luis Delta Mendota Water Agency south of the Delta in 2015.
- On June 16, 2015 GCID turned on its existing five production wells while issuing a Notice of Exemption (NOE) based on an "emergency." To provide some history about these wells, they were installed eight years ago under a previous exemption that asserted that they were necessary for "research." The 2015 NOE claims that because of the 25% cutback to their river water that was made clear in April, and new requirements to withhold additional water to attempt to save the 2015 winter-run salmon, they are facing emergency conditions. However, the most recent conditions could be foreseen by GCID, a water district that is in constant contact with the regulatory agencies and was fully aware of the serious hydrologic conditions and obliteration of the winter, fall, and spring salmon runs in 2014. There is no limit in time or volume in the NOE for the 5 wells.

GCID's failure to disclose its commitment to implement the SVWMA and its participation in repeated transfers, even when it claims in-district emergencies, proves that a shell game is operating. More of this will be discussed below.

Project Goals and Objectives

The fundamental purpose of the 10-Wells Project gives rise to more specific project objectives on page 1-5:

- Increase system reliability and flexibility
- Offset reductions in GCID Settlement Contract allotments during the irrigation season in drought years
- Periodically reduce Sacramento River diversions to benefit migrating fish
- Protect and maintain agricultural production in times of water shortage to minimize economic disruption

Below are specific comments and questions about the objectives presented.

1) "Increase system reliability and flexibility"

What "system" will receive "reliability and flexibility" from the 10-Wells Project? The vagueness of the objective leaves the reader unsure of the need for the Project. The Project is depicted as a "Supplemental Supply Project," however GCID is simultaneously selling river water to buyers north and south of the Delta in 2015.²¹ The 10-Wells Project claims shortages yet in practice

¹⁹ Bettner, Thad e-mail to Barbara Vlamis June 2, 2014.

²⁰ Bettner, Thad letter to Jim Brobeck June 30, 2014.

²¹ Bureau of Reclamation, 2015. 2015 Transfer Proposals as of May 19, 2015 obtained by AquAlliance through the Freedom of Information Act.

GCID has enough to sell water. It is in this way that groundwater is actually connected to water transfers, even if the Project's stated use is for district needs.

2) "Offset reductions in GCID Settlement Contract allotments during the irrigation season in drought years" The DEIR fails to address how GCID has specifically managed reductions in the past and that recent dam operations, or dam mismanagement is more likely, are part of the shell game to push CVP districts toward groundwater.²² This objective directs the reader to the Alternatives that were considered and rejected, two of which make for shared sacrifice during extremely rare CVP reductions. The DEIR can't have it both ways – either reductions are rare or they are regularly expected and, therefore, the additional stress of the 10-Wells Project to the hydrologic system is against the best interests of even GCID and certainly its neighbors. If CVP reductions are planned to be much more regular, this must be disclosed and analyzed in the DEIR.

3) "Periodically reduce Sacramento River diversions to benefit migrating fish"

How will fish benefit from the extraction of 28,500 af of groundwater that has not been historically needed when it is well documented that groundwater loss comes at the expense of stream flow? "Groundwater pumping can alter how water moves between an aquifer and a stream, lake, or wetland by either intercepting groundwater flow that discharges into the surface-water body under natural conditions, or by increasing the rate of water movement from the surface-water body into an aquifer."²³

4) "Protect and maintain agricultural production in times of water shortage to minimize economic disruption"

This is another laudatory goal that fails the sniff test. GCID's 2008 Negative Declaration for a project to transfer 85,000 af to San Luis Delta Mendota Water Authority by fallowing no more than 20 percent of the district's irrigated acreage determined that it would have "no impact" on "human beings, either directly or indirectly." The ability to absorb an 85,000 af loss of water during a Critical water year was GCID's legal position in the 2008 CEQA document, so why would the district possibly need 28,500 af from the existing and proposed wells to minimize economic disruption now and into the future? ²⁴ In addition, the district regularly supports crop

temporary urgency changes reasonably promptly given natural conditions of drought in California and the Central Valley watershed of the Delta, the Board's authority to evaluate the temporary urgency change petition, and the petitioners' exercise of due diligence with respect to the substance of the petition, does not end with natural conditions. Instead, the California Constitution, Article X, Section 2, and the Public Trust Doctrine, as well as California Water Code sections 850546, 850217, and 850238 require the Board to consider whether the petitioners have also exercised due diligence in reasonably using and diverting water, as well as protecting public trust resources." (p. 5.) ²³ U.S. Geological Survey web site regarding groundwater depletion: http://ga.water.usgs.gov/edu/gwdepletion.html

²² Restore the Delta Protest Petition to the State Water Resources Control Board, July 22, 2015. "While we concede that DWR and the Bureau have in the near term diligently petitioned for

²⁵ U.S. Geological Survey web site regarding groundwater depletion: <u>http://ga.water.usgs.gov/edu/gwdepletion.html</u>
²⁴ GCID 2008. *Initial Study and Proposed Negative Declaration for Option Agreement Between Glenn-Colusa Irrigation District, San Luis & Delta-Mendota Water Authority and the United States Bureau of Reclamation for 2008 Operations, and Related Forbearance Program.* "No Impact. The negative declaration assesses the potential impacts of the proposed Project. There would be no construction activities associated with the proposed Project. Typical farming practices with the idling of land in GCID would comply with applicable health and safety requirements. The potential increase in farmed acreage within the SLDMW A service area is within annual variability and could provide a minor beneficial effect on human economic activity. Therefore, the proposed Project would not cause substantial adverse effects on human beings, either directly or indirectly."

idling water transfers during dry and critical years, which the DEIR admits thwarts agricultural production. The district's on-again off-again support of this goal is arbitrary. Moreover, the project itself supports crop idling transfers by providing alternative water sources for the district in dry and critical years.

In 2010, a Below Normal water year, the *Glenn-Colusa Irrigation District 2010 Water Transfer to San Luis & Delta-Mendota Water Authority Draft Initial Study and Negative Declaration* had GCID planning to sell 20,000 af using groundwater substitution and didn't even *mention* impacts to the economy or humans. This pattern was repeated again in 2013, a Dry water year, when the water transfer CEQA document failed to mention, let alone consider, impacts to the economy or humans.²⁵ Clearly, GCID has through time demonstrated a lack of concern for impacts to the economy and humans, yet minimizing "economic disruption" has been elevated to an objective in the DEIR. The use of this goal obscures the district's historic behavior in feathering its own cap at the expense of the region's water and economy, which misleads the public.

In short, science and law should now converge to prevent GCID from framing the 10-Wells Project in a manner that forecloses meaningful alternatives and consigns the Sacramento Valley's future to fairy tales. As presented in the DEIR, the approach to project definition includes significant errors and omissions.

Key Problems with the GCID Project

GCID May Not Avoid Consideration of the Significant Environmental Impacts By Improperly Segmenting the Proposed Activities

The Project is part of GCID's multi-decade involvement in planning and implementing a much larger project, the Sacramento Valley Water Management Agreement ("SVWMA"), which still requires programmatic CEQA review. The SVWMA is not disclosed in the DEIR and has been gradually implemented by GCID and other parties absent the programmatic CEQA document (see Cumulative Impacts). The DEIR further fails to describe the numerous other programs of which this Project is a small component part. The review in the DEIR violates CEQA's prohibition against segmenting a project to evade proper environmental review (*Laurel Heights Improvement Association v. Regents of the University of California*, 1988, 47 Cal.3d 376).

The Project is a direct link to implementing the SVWMA and other subsequent plans and programs. Please consider the following:

• The SVWMA was signed in 2002 and the need for a programmatic EIS/EIR was clear and initiated, but never completed.²⁶ GCID is a signatory.

²⁵ Notice Of Preparation Initial Study And Proposed Negative Declaration Glenn-Colusa Irrigation District 2013 Water Transfer To San Luis & Delta-Mendota Water Authority.

²⁶ 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

- Sacramento Valley Integrated Regional Water Management Plan (2006). GCID serves on the Joint Powers Authority and has been implementing the SVWMA through state grants and federal appropriations and agreements. (see more in Cumulative Impact section below).
- The Sacramento Valley Water Management Plan prepared by the Sacramento River Settlement Contractors in cooperation with the Bureau. (2006). GCID is a Settlement Contractor. "[t]o examine the potential for groundwater production and recharge within a gravely strata located in Glenn County, the Stony Creek Fan. GCID's Conjunctive Use Program is being developed in conjunction with the Stony Creek Fan Program and build upon data contain [sic] though this investigation and the Sacramento Valley Water Management Program." (p. 2-56).
- The Stony Creek Fan Partnership Orland Project Regulating Reservoir Feasibility Investigation. GCID is one of the partners. (Id.)
- 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 shall define three hypothetical water delivery systems from the State Water Project (Oroville), the Central Valley Project (Shasta) and the Orland Project reservoirs sufficient to provide full and reliable surface water delivery to parties now pumping from the Lower Tuscan Formation. The purpose of this activity is to describe and compare the performance of three alternative ways of furnishing a substitute surface water supply to the current Lower Tuscan Formation groundwater users to eliminate the risks to them of more aggressive pumping from the Formation and to optimize conjunctive management of the Sacramento Valley water resources."²⁷
- GCID's water transfers in 2008 and in 2010.
- GCID's participation in the California Drought Water Bank for 2009. "In 2009, GCID transferred 6,585acre-feet to the California Department of Water Resources (DWR), as part of the 2009 Drought Water Bank. GCID made the transfer water available through crop idling."²⁸
- The Bureaus 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). GCID was prepared to participate by selling 40,000 af of which 20,000 would have been available from groundwater substitution. (Final EA at p. 2-4)
- "One-year GCID transfer of surplus Base Water Supply and US Bureau of reclamation Project Water during calendar year 2011 to 8,200 acres of Colusa Drain Mutual Water Company, comprised of previously cultivated, agricultural land outside, but contiguous to

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").

²⁷ U.S. Bureau of Reclamation Assistance Agreement, 2006.

²⁸ Glenn-Colusa Irrigation District 2010 Water Transfer to San Luis & Delta-Mendota Water Authority Initial Study and Negative Declaration p. 1-2.

existing GCID boundaries, or otherwise, conveniently served with water from the Colusa Basin Drain when water is available within the Basin." ²⁹ 6,300 af was transferred using groundwater substitution from GCID's wells for the first time. ³⁰

- In 2012 GCID's Critical Year Groundwater Well Program would pump 12,000 af. The Bureau planned water transfers of 76,000 af of CVP water all through ground water substitution.³¹
- In 2014 GCID planned to sell water north and south of the Delta.
 - Buyer Tehama Colusa Canal Authority sought 7,852 af with 4,154 af from groundwater substitution.
 - SLDMWA sought15,951 af.
- The 10-Year Water Transfers Program allows GCID to sell up to 91,000 af per year, including through groundwater substitution, from 2015-2024, to the San Luis Delta Mendota Water Agency.

The proposed project would facilitate additional water transfers that must be analyzed as part of the whole of the project. (See, Citizens Association for Sensible Development of Bishop Area v. Com& of Invo (1985) 171 Cal.App.3d 151, 165-166; McQueen v. Board of Directors of the Midpeninsula Regional Open Space District (1988) 202 Cal.App.3d 1136, 1144; Laurel Heights Improvement Ass'n v. Regents of the University of California, supra, 47 Cal.3d at pp.395-396.) The DEIR explains that GCID is a participant in the Long Term Water Transfer program ("LTWT") coordinated by and between the Bureau of Reclamation and the SLDMWA. (DEIR 3-76.) The DEIR notes that while the LTWT EIR originally evaluated GCID groundwater substitution transfers as part of the LTWT program, GCID now voluntarily seeks to convert all of its transfers under that program to cropland idling, while eliminating groundwater substitution, "originally shown at 25,000 ac-ft." (DEIR 3-76.) The DEIR explains that, "GCID elected to reduce the quantities from what was originally presented in the LTWT EIS/EIR in order to reduce potential conflicts between the proposed project and the LTWT." (DEIR 3-76.) In other words, to support and further the LTWT, GCID now proposes to pump a roughly equivalent amount of groundwater on its own, while still utilizing crop idling transfers as proposed under the LTWT. Moreover, nothing will prevent GCID from utilizing the existing or new wells to support groundwater substitutions under the LTWT. For each of these reasons, the direct, indirect, and cumulative impacts of GCID's participation in the LTWT should be considered here. See, AquAlliance, comments on the Long Term Water Transfer EIS/EIR, December 1, 2014.

Thus, while the DEIR provides no express explanation of why the proposed maximum groundwater pumping capacity of the project would be 28,500 ac-ft per year, the DEIR clearly explains that this project will be used to provide groundwater to the district in amounts almost identical to that which the district has voluntarily foregone in groundwater substitution under the LTWT. Nothing, however, under the LTWT nor under the proposed project affirmatively binds

²⁹ <u>http://www.ceqanet.ca.gov/DocDescription.asp?DocPK=651108</u>

³⁰ Glenn Colusa Irrigation District Draft EIR Groundwater Supplemental Supply Project2015, p. 3-15.

³¹ U.S. Bureau of Reclamation Memorandum to U.S. Fish and Wildlife Service January 24, 2012. Section 7 Endangered Species Act Consultation with U.S. Fish and Wildlife Service (USFWS) for 2012 "North-to-South" Water Transfers.

the district to these proposed amounts. Accordingly, and in order to avoid this shell game of simply taking the same groundwater under the pretense of a separate project under another name, these two projects must be evaluated together.

Indeed, GCID's participation in the LTWT itself belies the fundamental purposes of this proposed project, to provide additional water to the district in times of supposed shortages. In fact, the district proposes to sell off water rights under the LTWT during dry and critically dry years, and now proposes to pump an equivalent amount to offset the "shortage" it creates voluntarily by selling its water to south of delta users. As the DEIR states, these two projects are inextricably linked, and subject to the broad discretion of the GCID board to allocate water between the two on an annual basis.

The DEIR must evaluate higher rates of groundwater extraction than proposed by the DEIR.

The DEIR incompletely describes the project in the following, limited, terms:

GCID is proposing to install and operate five new groundwater production wells and operate five existing groundwater wells to augment District surface water supplies during dry and critically dry water years (see Figure 2-1). The proposed project wells would be operated as needed during dry and critically dry water years to achieve a maximum cumulative total annual pumping volume of 28,500 ac-ft. Total capacity per well would be approximately 2,500 gallons per minute.

(DEIR 2-1.) The DEIR, however, provides no justification for limiting its analysis of the whole of the project to additional pumping of 28,500 ac-ft per year during dry and critically dry years. Nothing in the DEIR explains how or why groundwater extraction from these wells will be so limited.

What is the basis for the 28,500 ac-ft target? How, specifically, does this target amount of water satisfy each of the project objectives? What legal constraints, if any, are in place to ensure that no greater amounts could be withdrawn from these pumps? As the DEIR discloses in Table 3-4, the pumping capacities of the existing wells are far greater than the projected 2,500 gpm rate planned in the Project. (p. 3-15.)

Once constructed, additional operations of these pumps is entirely foreseeable. According to the DEIR at least, no further regulatory approvals would be needed to utilize the new and existing pumps in non-dry and critically dry years, and in amounts greater than 28,500 ac-ft per year (only construction approvals are referenced in the DEIR). The DEIR states that the pumps will be operated 24 hours a day and 7 days a week, but for only 8.5 months a year. Should the pumps be operated for the entire year, production increases to 40,300 ac-ft per year. Should the pumps be operated during any normal or wet year, the groundwater recovery anticipated by the DEIR would not be realized.

The DEIR states that "[a]ny future uses of groundwater facilities other than for supplementing GCID's water supply sources (for example, a water transfer) would require a separate evaluation and approval, at the time any such specific action is proposed, in compliance with NEPA and/or CEQA, as appropriate." (DEIR 2-3.) But this is simply not the case. As discussed above, five of

the wells included in the present project were constructed, and have been operated on numerous occasions for numerous reasons, without CEQA review. Similarly, the DEIR itself notes that "GCID can augment its surface water supply with a maximum of 5,000 ac-ft of groundwater available annually from existing District-owned wells." (DEIR 1-2.) Though the basis for the 28,500 af cap is not provided, it is evident that GCID intends to use its own wells to pump groundwater as needed and at any capacity.

The Supreme Court in *Laurel Heights I* held that an EIR must analyze future effects of a project where such effects are (1) reasonably foreseeable, and (2) significantly greater in scope or degree. 47 Cal.3d 376, 393-399. For example, in Communities for a Better Environment v. City of *Richmond*, 184 Cal.App.4th 70 (2010), the Court set aside an EIR for its failure to analyze Chevron's ability to process lower grade crude oil as a result of equipment upgrades, even where the proposed air district permit for the project could have prevented the throughput of lower grade and more polluting crude oil. As here, the project purpose stated in the CBE EIR was "to allow more flexibility in refining future crude supplies." But, as here, the "flexibility" Chevron achieved through its equipment upgrades allowed for more and different impacts than those put forth in the artificially limited project description. With no actual restrictions on the new infrastructure, the Court held the EIR to be inadequate, stating, "[f]ar from being an informative document, the EIR's conclusions call for blind faith in vague subjective characterizations." Such is the case with the project description at hand, which claims a maximum groundwater extraction of 28,500 ac-ft per year in dry and critically dry years only, while providing no binding requirements or even practical limitations that would so limit future groundwater extraction from these new wells, once constructed, to the proposed project amounts.

Nor may GCID simply rely on the DEIR's proposed mitigation measures to truncate review of the project's impacts. The Court in *Stanislaus Natural Heritage Project v. County of Stanislaus*, 48 Cal.App.4th 182 (1996), overturned an EIR where the lead agency failed to fully analyze future water supply impacts based on a mitigation measure designed to avoid such future impacts. The court rejected this as insufficient under CEQA, holding that the whole of the project must be evaluated, and only then may the efficacy of mitigation measures be considered. (205-206.)

In contrast, in *Kings County Farm Bureau v. City of Hanford*, 221 Cal. App. 3d 692, the Court of Appeal upheld an EIR that considered only a 20 year lifespan for a project, where the facility at issue obtained only a 20 year contract and permit to operate. <u>Any</u> future decision to extend the plant operation would <u>require</u> a new permit approval, and therefore, subsequent CEQA review. (739.) Here, in contrast, no future, binding, limitations, such as an expiring contract or regulatory permit, might limit GCID's future uses of the newly constructed pumps to the stated project timing and amount.

In sum, the DEIR is premised on an improperly "curtailed" and "distorted" project description. (*County of Inyo* v. *City of Los Angeles* (1977) 71 Cal. App.3d 185, 192.) Since "[a]n accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR" (*id.* at p. 193), even were the FEIR deemed to be adequate in all other respects, the selection and use of a "truncated project concept" violated CEQA and mandates the conclusion that the County did not proceed "in a manner required by law." (*Id.* at p. 200)

Any need for additional groundwater pumping can only be the result of either increased demand, decreased supplies, or a combination of the two. However, the DEIR fails to provide any quantitative information on these project drivers. Based on historic climatic variation, the DEIR simply projects forward that "it is anticipated that GCID could operate the proposed project approximately 16 times in a 40-year period." (DEIR 2-3.) But the DEIR fails to provide any substantial evidence to support this future baseline projection. Over the prior 40 year period used to project the scope of the project going forward, haven't demands increased while supplies have simultaneously diminished? Indeed, the DEIR itself cites to decreasing supplies as a project driver, effectively rendering the past 40 years of pumping rates totally inapplicable to the 40 future years of project operations that the DEIR analyzes. The DEIR fails to make any adjustments to its projections, which rely on historic data, to account for present and future changes in demand and supply. As just one example, demands within Glenn County alone have increased significantly from 2000-2013 as agriculture is expanded or converted to tree crops.³² Meanwhile, supplies are decreasing statewide, regionally, and locally, as a result of increasing average temperatures, and decreasing precipitation. See, AquAlliance, Comments on Long Term Water Transfer EIS/EIR, December 1, 2014, pp. 41-44. The EIR must make some good faith attempt to evaluate these and similar factors when projecting the scope of operation of the proposed project.

II. The DEIR Does Not Establish that GCID has Any Legal Right to Pump this Additional Groundwater.

The DEIR fails to meaningfully address whether GCID has a legal right to increase groundwater pumping, whether in its existing wells, or within the newly proposed wells, for distribution of this pumped groundwater throughout the district. In contrast to GCID's appropriative surface water rights, which it may allocate to a non-overlying use, any overlying right to pump groundwater is limited to the beneficial use of said groundwater upon the property of the overlying landowner within the same basin or watershed. (*California Water Service Co. v. Edward Sidebotham & Son* (1964) 224 Cal. App.2d 715, 725; see also, *City of Barstow v. Mojave Water Agency* (2000) 23 Cal.4th 1224.) The DEIR does not demonstrate that GCID would, in fact, solely limit its use of extracted groundwater to lands it owns throughout the same basin or watershed. GCID was put on notice that construction of its five existing wells did not provide this right, and is reminded of that again here.

III. Hydrology

Groundwater Conditions

A complete and accurate description of the existing and affected environmental setting is critical for an adequate evaluation of impacts to it. *See e.g. San Joaquin Raptor/Wildlife Rescue Ctr. v. County of Stanislaus* (1994) 27 Cal.App.4th 713; *Galante Vineyards v. Monterey Peninsula Water Mgmt. Dist.* (1997) 60 Cal.App.4th 1109, 1122; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 955; *Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 94.

³² AquAlliance 2015. Summary of Agriculture Reports 2000-2013. Based on actual reports found at: <u>http://www.countyofglenn.net/govt/departments/ag/crop_reports.aspx</u>

The 3.1.1 Environmental Setting section is deficient with its general description of the region's climate based on the work of Bertoldi in 1991. Even if the region experiences "typical years" in the future, it certainly has experienced shifting patterns since 2000. More current annual data and trends must be presented that reflects these changing conditions and specifically for Glenn County, where the wells are proposed for use and its surrounding counties.

The DEIR similarly provides limited groundwater elevation data of the Sacramento Valley groundwater basin in the subsection Groundwater Conditions. (pp. 3-7 to 3-10.) Table 3-2 provides groundwater level changes from the summer of 2004-2014. (DEIR p. 3-8.) DWR provides a number of additional groundwater level and depth to groundwater maps that the DEIR should use to help complete its description of the affected environment.³³

AquAlliance's tables below illustrate maximum and average groundwater elevation decreases for Butte, Colusa, Glenn, and Tehama counties, all the counties believed to overly the Tuscan Aquifer, at three aquifer levels in the Sacramento Valley between the fall of 2004 and 2014.³⁴

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

| County Fall '04 - '14 | Intermediate Wells (Max decrease gwe) | Intermediate Wells (Avg. decrease gwe) |
|--------------------------|--|---|
| Butte | -21.8 | -6.5 |
| Colusa | -39.1 | -16.0 |
| Glenn | -40.2 | -14.5 |
| Tehama | -20.1 | -7.9 |

| County | Shallow Wells (Max | Shallow Wells (Avg. |
|----------------|--------------------|---------------------|
| Fall '04 - '14 | decrease gwe) | decrease gwe) |
| Butte | -13.3 | -3.2 |
| Colusa | -20.9 | -3.8 |
| Glenn | -44.4 | -8.1 |
| Tehama | -15.7 | -6.6 |

³³<u>http://www.water.ca.gov/groundwater/data_and_monitoring/northern_region/GroundwaterLevel/gw_level_monitoring.cfm#Well%20Depth%20Summary%20Maps</u>
³⁴ Id

| Below are the results from DWR's spring monitoring for Sacramento Va | alley groundwater b | pasin |
|--|---------------------|-------|
| from 2004 to 2014. | | |

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

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

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

The additional DWR data in multiple counties that depend on the Tuscan Aquifer clearly present a more comprehensive picture of the conditions of the Sacramento Valley groundwater basin over time than what is provided in the DEIR. It also highlights significant data that is intentionally omitted from the DEIR. For Glenn County alone (all that is provided in the DEIR), the fall measurements indicate much more dramatic declines from summer measurements in the deep wells and all the spring levels punctuate the serious lack of groundwater recovery. Obfuscating basic and foundational material regarding existing conditions leaves the public and policy makers with a lack of confidence in the 10-Wells Project, the DEIR, and the lead agency, GCID. Therefore, the DEIR will need to be revised, once these data are obtained, and recirculated as a Draft EIR in order to ensure the public and relevant decision makers receive full disclosure of the existing conditions and trends that are used for analysis and the development of conclusions for the 10-Wells Project.

Groundwater Properties

The DEIR fails to discuss the pressurized condition of the down-gradient portion of the Tuscan formation, which underlies the Project area. Dudley finds significant importance in the pressurized state of the lower Tuscan aquifer located in the Butte Basin. "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.³⁵ The artesian pressure indicates recharge is occurring in the up-gradient portions of the aquifer located along the eastern margin of the Sacramento Valley several miles east of the project.

The DEIR fails to provide recharge data for the aquifers although GCID was provided this information seven years ago. 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."³⁶ 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."³⁷ "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."³⁸ The DEIR must account for this feature in its description of existing conditions, and its projections of recharge rates.

Groundwater Depletion

The DEIR illegally defers formulation and evaluation of mitigation measure WR-1. (*See, e.g., POET, LLC v. State Air Resources Board* (2013) 218 Cal.App.4th 681; *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260; *Sacramento Old City Association v. City Council* (1991) 229 Cal.App.3d 1011; CEQA Guidelines § 15126.4(a)(1)(B); *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1275.) In relying on WR-1, the DEIR goes so far as to defer the environmental impact analysis that should be provided now, as part of the DEIR itself. Moreover, WR-1 fails to include clear performance standards, criteria, thresholds of significant, evaluation of feasibility, analysis of likelihood of success, and even facially permits significant impacts to occur. And importantly, WR-1 does not, in fact, reduce potentially significant impacts to less-than-significant levels, but rather, attempts to monitor for when significant effects occur.

WR-1 requires GCID "implement a groundwater monitoring program," but a monitoring program itself cannot prevent significant impacts from occurring. "The monitoring program will rely on DWR's CASGEM program and the District's monitoring network. The monitoring program will include semiannual measurements of groundwater levels at a network of wells throughout the Sacramento Valley. Many of the established observation wells (including multi-completion well clusters) are instrumented with data-logging pressure transducers to provide continuous

³⁵ Dudley, Toccoy 2005. Seeking an Understanding of the Groundwater Aquifer Systems in the Northern Sacramento Valley: An Update.

³⁶ Hoover, Karin A. 2008. Concerns Regarding the Plan for Aquifer Performance Testing of Geologic Formations Underlying Glenn-Colusa Irrigation District, Orland Artois Water District, and Orland Unit Water Users Association Service Areas, Glenn County, California. White Paper. California State University, Chico.

³⁷ Dudley, Toccoy 2005. Id.

³⁸ Hoover, Karin A. 2008. Id.

groundwater level data." (EIR 3-40.) Although monitoring does not disclose or analyze impacts for CEQA purposes, the DEIR still fails to provide any of the most foundational information about its proposed "groundwater monitoring program," such as how many wells will be monitored, what is a sufficient number of wells, how many will be monitored semiannually, how many will be monitored continuously, where are the monitoring wells located, what strata are the wells monitoring, who will manage and report on the data, and how will the public have access to the data and reports?

To elaborate on the timing of monitoring, it is absolutely crucial. Common sense suggests that significant groundwater pumping could occur in less than six months – one of the periods planned for monitoring. And monitoring after transfer-related pumping can only show whether significant impacts have occurred; it cannot prevent them. Yet this is exactly what the EIR proposes: "A subset of the well network will be selected for groundwater level monitoring prior to (monthly), during (weekly), and after (weekly for 1 month and monthly thereafter) groundwater pumping for the proposed project. The monitoring network will incorporate a sufficient number of monitoring wells and adequate spatial distribution to evaluate groundwater levels prior to, during, and after project operations." (EIR 3-40.) Hence, WR-1 only requires elements of the mitigation plan to kick in after monitoring shows significant impacts are occurring, which are extremely likely to occur given the fact that monitoring alone amounts to no mitigation or avoidance measures. Additionally, the DEIR fails to provide any guidance on what constitutes "a sufficient number of monitoring wells." (Id.)

Compounding WR-1's inadequacy as a mitigation measure, the DEIR asserts that, "As part of the monitoring program, GCID will use data from DWR's existing monitoring programs to establish longer-term antecedent trends in groundwater levels within the basin." (p. 3-40). But this is exactly the kind of information that must be provided to the public in the DEIR. When would GCID finally establish these trends, how would they be disclosed to the public, and what would they possibly alter with the Project?

Even still, the proposed mitigation measure WR-1 doesn't mitigate significant impacts. The mitigation proposal includes the following requirements: 1) "Reduce or relocate pumping until natural recharge corrects the issue." This, of course, could take years³⁹ and really amounts to no mitigation of the significant impact at all. (See also, AquAlliance, comments on the Long Term Water Transfer EIS/EIR, pp. 19-22, 36, 47, 59-61, 66.) 2) How GCID would feasibly and legally "relocate" pumping is not explained. 3) "Reimburse third parties for significant increases in pumping costs due to an increase in lift." In what amount, at what time, as decided by whom? Monetary compensation is not always sufficient to cover damages to business operations. (*See* CEQA Guidelines § 15370; *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1122.) 4) "Lower the pump in third-party wells affected by the proposed project," may help an injured third-

³⁹ Custis, Kit 2015. "Although the DEIR doesn't provide an estimate of the stream depletion rate as a percentage of the stream flow, it appears from the maximum values listed in Table 3-6 that the depletion rates for the listed streams and rivers are less than 48% of the average stream flow. This would suggest that the time it takes until the aquifers pumped by the GCID well are 95% recharged by stream depletion may take decades. In fact, a report on the impacts from the 2009 groundwater substitution transfers simulating from 1976 to 2003 using the SACFEM groundwater model showed aquifer recovery following a single 1976 pumping event was only 60% after 30 years (Figure 4d in CH2MHill, 2010). This suggests that the impacts from a single year of GCID's groundwater extraction project and the impacts from reoccurring pumping events will continue for many years."

party, but like monetary damages may not sufficiently cover damages or be done in a timely manner with well companies months behind due to the existing dry conditions. Finally, "[o]ther actions as appropriate" is so vague as to be meaningless. (EIR 3-40.)

Mitigation measure WR-2 is similarly flawed with its reliance on monitoring and deferred analysis of impacts of the present project. WR-2 also assumes that subsidence impacts will take place quickly allowing GCID to determine exclusive culpability or deflect it to "regional conditions." (DEIR p. 3-41/42.) This simplistic view is not founded in science – more likely wishful thinking. The DEIR instead should disclose how long-term physical responses result from repeated lowering of groundwater. The following evidence demonstrates that the Project's subsidence impacts may be significant and it was first provided to GCID in 2008.⁴⁰

Dr. Kyran Mish, former Presidential Professor, School of Civil Engineering and Environmental Science at the University of Oklahoma related: "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)."⁴¹ 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).

However, the DEIR asserts that, "If groundwater levels do not recover above historical lows within 6 months following cessation of project operation and project operations will not resume the next year, GCID will assume groundwater level drawdown is due to regional conditions and land subsidence monitoring may be stopped." (pp. 3-41 and 3-42.) This conclusory assertion falsely assumes that 1) Any water level above the *historic lows* avoids or offsets damage from non-reversible subsidence. 2) If groundwater recovers above historic lows, subsidence isn't occurring and therefore can't be attributed to the 10-Wells Project and 3) If groundwater levels don't recover above historical lows, when there is a planned one-year lapse in GCID's pumping, there are no impacts from GCID's pumping. However, the DEIR contains conclusions reached by the U.S. Geological Survey ("USGS") that affirm the long-term and gradual nature of subsidence that accrues from continuous groundwater depletion,: "These small changes accumulate over time and can lead to impacts such as changes in stream, canal, or levee elevations and slopes; damage to infrastructure such as roads, bridges, and utilities; damage to building foundations; and collapse of well casings (USGS, 2015b)." (p. 3-13.)

USGS also confirms that, "In many aquifers, ground water is pumped from pore spaces between grains of sand and gravel. If an aquifer has beds of clay or silt within or next to it (figure 2), the lowered water pressure in the sand and gravel causes slow drainage of water from the clay and silt beds. The reduced water pressure is a loss of support for the clay and silt beds. Because these beds

⁴⁰ Mish, Kyran 2008. *Commentary on Ken Loy GCID Memorandum*. White Paper. University of Oklahoma. ⁴¹ Id.

are compressible, they compact (become thinner), and the effects are seen as a lowering of the land surface. The lowering of land surface elevation from this process is permanent. For example, *if lowered ground-water levels caused land subsidence, recharging the aquifer until ground water returned to the original levels would not result in an appreciable recovery of the land-surface elevation.*^{*42} (emphasis added) It is quite clear that WR-2 is a completely inadequate mitigation measure for subsidence impacts.

The DEIR's evaluation of subsidence suffers from the same flaws as that of the Long Term Water Transfer Final EIS/EIR, and AquAlliance's April 8, 2015 comments on these deficiencies (pp. 2-5) are incorporated here.

Groundwater Quality

The DEIR fails to disclose the existence or extent of all the hazardous waste plumes in the Tuscan groundwater basin where GCID's wells are and will be located or in the Tehama formation that intermingles with the Tuscan in Glenn County. (See e.g. San Joaquin Raptor/Wildlife Rescue Ctr. v. County of Stanislaus (1994) 27 Cal.App.4th 713.) For example, the Orland dry cleaners plume is certainly within the incremental drawdown forecast in Figure 3-6. There is also no discussion of whether the increased groundwater extraction proposed by the Project may mobilize some of the PCE and TCE plumes under Chico since the pressurized condition of the down-gradient portion of the Tuscan formation, which underlies the 10-Wells Project area, benefits from recharge waters in the foothills and mountains to the east and north of Chico.⁴³ Toccoy Dudley et al support this finding of a pressurized lower Tuscan aquifer across the Sacramento River from GCID. "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." ⁴⁴ The artesian pressure indicates recharge is occurring in the upgradient portions of the aquifer located along the eastern margin of the Sacramento Valley many miles into Butte County. This indicates that flow moves through the Chico plume areas toward the down-gradient portion of the Tuscan Aquifer where the existing GCID wells are located and new wells are proposed.

In addition, the DEIR fails to describe a significant saline portion of the aquifer stratigraphy of the project area. 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 the various freshwater strata. The approximate contact between fresh and saline groundwater occurs at a depth ranging from 1,500 to 3,000 feet.⁴⁵

⁴⁵ Id.

⁴² U.S. Geological Survey (USGS). 2015a. "Land Subsidence from Ground-Water Pumping." Available at <u>http://geochange.er.usgs.gov/sw/changes/anthropogenic/subside</u>/. Retrieved July 24, 2015.

⁴³ DWR, 2009. Glenn-Colusa Irrigation District Test-Production Well Installation and Aquifer Testing, pp. 25-26.

⁴⁴ Dudley, Toccoy 2005. Seeking an Understanding of the Groundwater Aquifer Systems in the Northern Sacramento Valley: An Update.

More recent research has documented threats of contamination. "The BFW [base of fresh water] boundary occurs primarily in late Tertiary to Quaternary unconsolidated sediments at depths near land surface to more than 3,500 feet below ground surface. The BFW is an uneven boundary that in some places reflects the major geologic structures underlying the Sacramento Valley, and in other areas, transgresses underlying geologic structures. In some areas, the BFW boundary is well above the base of post-Eocene marine strata. This is most likely caused by high artesian pressures and upward vertical gradients in deep aquifers in the Sacramento Valley, which have been documented in DWR monitoring wells. This suggests that migration of poor quality water into continental sediments that previously contained freshwater has occurred over geologic time. This finding has implications for brackish and saline water upconing beneath areas of prolonged groundwater pumping in the Sacramento Valley."⁴⁶

Certainly the public has no idea of or ability to comment on the important water quality conditions not presented in the DEIR, which fails the full-disclosure mandate in CEQA. The 10-Wells Project must either be withdrawn or full disclosure must be presented in a recirculated DEIR. (See, e.g., *Laurel Heights Improvement Ass 'n v Regents of Univ. of Cal.* (1993) 6 Cal.4th 1112; 14 Cal Code Regs., § 15088.5(a); 40 C.F.R. § 1502.9(c); *California v. Block* (9th Cir. 1982) 690 F.2d 753, 770.)

IV. Species Impacts

Aquatic Species

It is useful that the DEIR acknowledges the demise of four anadromous fish runs in Stony Creek (spring, fall, late-fall, and winter salmon). (pp. 3-43 - 3-44). The acknowledgement serves to illustrate the existing strains on the hydrologic system, both surface and ground, once supported these runs of salmon. We select one tributary mentioned as an example to elucidate many points. Stony Creek is simulated with the 10-Wells Project to have an average depletion of 1.8 cfs and a maximum of 11.6 cfs. The text that follows these figures in the 3.1 Water Resources section, states, "As shown in Table 3-6, the majority of the maximum streamflow depletions occur during or shortly following the drought of water years 1987–1992. During critically dry year types, it is expected that many of the surface streams within the drawdown area would naturally have minimal or no flow (for example, Stony Creek, Little Chico Creek, and Walker Creek). Furthermore, these streams do not substantially contribute supply to the CVP, SWP, or non-project water users." (p. 3-39).

The text is troubling for many reasons.

1) The conclusion that "many of the surface streams within the drawdown area would naturally have minimal or no flow," during critically dry years and therefore the impacts would be "less than significant" avoids serious consideration of the importance of underflow. "The DEIR's evaluation of impacts from stream depletion is also inadequate because it assumes that once a streambed becomes dry continued pumping of groundwater has no effect on surface flow. This

⁴⁶ Springhorn, Steven T., el al, May 2013. *Base of Fresh Groundwater in the Sacramento Valley, California*, Geological Society of America Abstracts with Programs. Vol. 45, No. 6, p.51. https://gsa.confex.com/gsa/2013CD/webprogram/Paper219191.html

assumption ignores the role that stream underflow plays on maintaining pools and riparian habitats. The assumption also ignores the fact that the depth to saturated ground water beneath a streambed will impact the volume and duration of flow needed to re-wet the channel at the beginning of the next rainy season. The deeper the depth of ground water, the more aquifer voids there are that need to be re-filled in order for the stream to sustain constant flow. In other words, a greater volume of water for a longer period of time is needed at the beginning of the rainy season to sustain surface flows."⁴⁷ (p. 11.)

2) "Furthermore, these streams do not substantially contribute supply to the CVP, SWP, or nonproject water users." On what basis is this conclusion made? The DEIR does not say. How much water in the streams is backfilling over used groundwater? How does contributing, substantially or otherwise, "to the CVP, SWP, or non-project water users" constitute the only value from a stream?

3) If the simulations are correct and the "majority of the maximum streamflow depletions occur during or shortly following the drought of water years 1987–1992," how is that not a significant impact when streams may already have minimal or no flows even according to the DEIR? Dewatering streams, be they ephemeral or annual, no matter how low the flow can be essential for fish species. For example, 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. The Recovery Plan For The Evolutionarily Significant Units Of Sacramento River Winter-Run Chinook Salmon And Central Valley Spring-Run Chinook Salmon And The Distinct Population Segment Of California Central Valley Steelhead confirms this importance of small areas of refugia for out-migrating salmon in tributaries to the Sacramento River: "Non-natal rearing tributaries to the Sacramento River include freshwater rearing habitat. Some non-natal rearing areas potentially have a high value because they provide critical and improved growing conditions, particularly during high winter flow events on the Sacramento River."⁴⁸*

4) The 10-Wells Project will further deplete the hydrology in Glenn County and may also affect the hydrology in surrounding counties, streams, and the Sacramento River. Dewatering of salmon bearing streams that interface with the targeted Lower Tuscan Formation Aquifer would result in physical changes to these streams that may result in significant adverse impacts to biological resources. This 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." This is a river that historically supported a large fall run of Chinook Salmon.⁴⁹ 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

⁴⁷ Custis, Kit, 2015. Comments and Recommendations on Draft Environmental Impact Report for Glenn Colusa Irrigation District's Groundwater Supplemental Supply Project, June 2015 for AquAlliance.

⁴⁸ National Marine Fishery Service, 2014.

⁴⁹ Fleckenstein, Jan; Anderson, Michael; Fogg, Graham; and Mount, Jeffrey 2004. *Managing Surface Water-Groundwater to Restore Fall Flows in the Cosumnes River*, Journal of Water Resources Planning and management.

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...." (Id.) 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 DEIR fails to consider such broader ecological and hydrological impacts stemming from increased groundwater extraction during already dry and critical years.

5) Lower Stony Creek is designated as critical habitat for spring-run salmon and Central Valley steelhead (p. 3-44), yet the DEIR concludes that because Stony Creek is already impaired, "[p]otential drawdown effects on surface waters of lower Stony Creek are anticipated to have less-than-significant impacts on anadromous salmonids." (p. 3-53) The DEIR's empty conclusion, without any supporting data or analysis, is taken by GCID as a release from even offering a mitigation measure for struggling Stony Creek that is suffering death by a thousand cuts. However, the federal register for critical habitat provides a different view of the needs and potential of Stony Creek.

"The CHART [Critical Habitat Analytical Review Teams] has evaluated the available information, particularly with regard to Stony Creek (HSA 550410), and concluded that this stream is occupied by both spring run Chinook and steelhead. Juvenile spring run Chinook have been consistently documented using Stony Creek as rearing habitat since 2001 (Corwin and Grant, 2004), as well as in previous years (Maslin and McKinney, 1994). Similarly, juvenile steelhead have been periodically documented rearing in Stony Creek (Corwin and Grant, 2004; Maslin and McKinney, 1994). The CHART also concluded that Stony Creek has PCEs that support both species. Water temperature monitoring from 2001 through 2004 has shown that temperatures in Stony Creek under current operations are generally suitable for adult and juvenile salmonids (below 65 °F) from mid-October through late May. Water temperatures have been found to be suitable for salmonid spawning and incubation (below 56 °F) from mid-November through early May (Corwin and Grant, 2004). Though successful steelhead spawning has not been documented recently in Stony Creek, habitat conditions under current operations are considered marginally suitable to support steelhead reproduction. Because of ongoing restoration actions and ESA section 7 consultations, progress is being made toward improving these habitat conditions, and we expect conditions to continue to improve into the future."50

We must be clear: <u>any</u> additional impairment by the 10-Wells Project is adverse modification of critical habitat, yet that is not addressed in the DEIR. Added to this significant lapse is the failure

⁵⁰ National Marine Fisheries Service, 2005. *Federal Register /Vol. 70, No. 170 / Friday, September 2, 2005 /Rules and Regulations, Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California.*

of the DEIR to disclose many relevant recovery recommendations⁵¹ for Stony Creek that the 10-Wells Project clearly undermines. Examples include, but are not limited to:

- Improve water temperature conditions in Stony Creek by identifying and implementing projects that would increase stream flows and increase shaded riverine habitat.
- Implement projects to increase floodplain habitat availability in Stony Creek to improve juvenile rearing habitat.
- Monitor and evaluate sportfishing impacts in Stony Creek to ensure that the fishery allows for the recovery of steelhead; modify regulations as necessary. (Id.)

The DEIR assumes an average depletion of 0.5 cfs in Little Chico Creek and a maximum of 3 cfs. (p. 3-53) The DEIR assumes an average depletion of 0.3 cfs in Big Chico Creek and a maximum of 11.6 cfs. (Id.)

Big Chico and Little Chico Creeks are also listed as critical habitat for Central Valley steelhead (Oncorhynchus mykiss) and Central Valley Spring Run Chinook Salmon (Oncorhynchus tshawytscha), although the DEIR fails to point out the salmon critical habitat designation for Little Chico Creek. (pp. 3-48 to 3-49). Again, <u>any</u> additional impairment by the 10-Wells Project is adverse modification of critical habitat, yet that is not addressed in the DEIR. Recovery actions for Big Chico Creek that are undermined by additional strains on streamflow include, but are not limited to:

- Implement projects to increase Big Chico Creek floodplain habitat availability to improve habitat conditions for juvenile rearing
- Increase monitoring and enforcement in Big Chico Creek to ensure that the water quality criteria established in the Central Valley Water Quality Control Plan (Basin Plan) are met for all potential pollutants (SWRCB 2007).

Giant Garter Snake

Section 2-4 presents permits and approvals that are required for the 10-Wells Project. Noticeably absent are requirements for a permit from the California Department of Fish and Wildlife and from the U.S. Fish and Wildlife Service for impacts to the giant garter snake ("GGS"). However, the DEIR acknowledges the potential for construction impacts: "Additionally, the proposed well sites are located within 200 feet of rice fields and canals, both of which provide suitable habitat for giant garter snake (GGS). Though the construction sites do not directly provide suitable habitat for GGS, nor do the sites contain suitable winter hibernacula for the species, it is possible that, due to their close proximity to suitable habitat at all well locations, GGS could be present within the project construction areas during construction. Though the likelihood of impacts on GGS are low, any impact on GGS would be significant. Implementation of avoidance measures listed in MM BIO-4 would eliminate impacts to GGS." (DEIR p. 3-52)

⁵¹ National Marine Fisheries Service, 2014. *Recovery Plan For The Evolutionarily Significant Units Of Sacramento River Winter-Run Chinook Salmon And Central Valley Spring-Run Chinook Salmon And The Distinct Population Segment Of California Central Valley Steelhead.*

It may be a good first step to prepare for "avoidance measures," but that does not eliminate the requirements under the California and federal Endangered Species Acts. The presence of wetlands in the Project area will require a permit from the U.S. Army Corps of Engineers (DEIR p. 3-50) that will lead to consultation with the U.S. Fish and Wildlife Service. GCID must also apply to the California Department of Fish and Wildlife for an incidental take permit.

Substantively regarding GGS, there is developing research that GGS may spend a great deal of time underground during the active season. "As for the probability of being in a terrestrial environment, much individual variation existed in the probability of being underground (logit-normal SD for individual-specific random intercept = 1.85 [1.63-2.12]). Predicting whether a given individual will be on the surface or underground is therefore fraught with uncertainty, despite high posterior precision of estimates of the behavior of an average Giant Gartersnake (Figs. 4 and 5)."⁵²

This significant research must be considered if the 10-Wells Project moves forward. The DEIR also fails to acknowledge that there may be operational impacts to GGS. This must be developed and, if the Project goes forward, recirculated in a revised DEIR.

Additional Comments

The reader is referred to Figures 3.3 and 3.6 to view the potential drawdown effects on Stony Creek (DEIR p. 3-53) with Tehama-Colusa Canal mentioned as a reference point, however, it is not on either Figure.

As mentioned previously, the two-year and six-year scenarios leave out serious periods of drought or dry conditions, such as 2007-2010 and 2012-2015, a four-year drought that has been declared an emergency by Governor Brown multiple times. This is a serious omission undermining the description of baseline environmental conditions, analysis of supplies and demands associated with foreseeable project production, and exacerbated impacts of the project itself, that must be corrected in a recirculated DEIR.

Tables 3.1 and 3.6 are incapable of presenting data with which to simulate streamflow depletion because, as stated in the DEIR, there are "limitations of the available gaging data." (pp. 3-6 and 3-39). In an effort to locate existing data, AquAlliance checked the Big Chico Creek Near Chico (BIC) gage on July 24, 2015 and there is insufficient flow to even register a reading at this time.⁵³ In addition, the USGS no longer maintains a gage on Big Chico Creek.⁵⁴ Regarding Little Chico Creek estimated flows, Table 3-1 indicates that the period of record for DWR gage A04270 Taffee Road near Chico, CA was 1991-2002 and that gage A04280 Near Chico, CA was from 1975-1996 and that, "Data for this gage were downloaded in 2011; the data are no longer available from

⁵² Halstead, Brian J., Shannon M. Skalos, Glenn D. Wylie, and Michael L. Casazza. 2015. Terrestrial ecology of semiaquatic giant gartersnakes (Thamnophis gigas). Herpetological Conservation and Biology. In Press, PP. 10-11.

⁵³ California Department of Water Resources, California Data Exchange Center. <u>http://cdec.water.ca.gov/cgi-progs/queryF?BIC&d=24-Jul-2015+13:37</u>. "BRT" signifies discharge at stage below available rating table.

⁵⁴ <u>https://water.usgs.gov/nsip/</u>

original data source: DWR, 2015a," (footnote "e" p. 3-6). Stony Creek's flows are also based on distant years and 1955 -1990 and 1941-1973 (p. 3-6). It is impossible for the public to have any confidence in modeling results that are using such antiquated input data. The DEIR relies on only modeling to consider impacts from the Project when it must compile and present results from actual monitoring and reporting prior to recirculating a revised DEIR.

Shallow Groundwater Monitoring Framework

A comprehensive monitoring program was proposed in the mid-2000s and is still absolutely necessary. The Sacramento Valley Integrated Water Management Plan lead to a draft Framework for Sacramento Valley regional water resource monitoring that would also benefit shallow domestic-well owners. Starting on page five, it reads: "Habitat Monitoring; The long-term health of riparian vegetation, wetland species, and a number of other native habitat are commonly associated with maintaining a minimum range of groundwater levels and an appropriate level of interaction between surface water and groundwater resources. 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."55 The Framework has many other valuable suggestions that were protective of the region's residents and environment. Unfortunately, the Framework was shelved, and the shallow monitoring network never got off the ground.

This Framework could have been operation for over seven years and it should definitely be in place prior to the 10-Wells Project and continue in perpetuity. It should also be presented in a recirculated Draft EIR as a viable mitigation measure, or project alternative

V. Climate Change

Once SB 97 was approved in California in 2007, analysis of greenhouse gas emissions became a part of the CEQA process⁵⁶ and that is reflected in the DEIR from an air quality and air pollution perspective. Unfortunately, the DEIR fails to discuss Climate Change, the result of greenhouse gas emissions and its impacts on the hydrology of the region or the Sacramento River watershed upon which GCID's river and stream water claims depend. This obvious omission is at the heart of the 10-Wells Project that claims the need for more water in a district with an exorbitant claim to water - 825,000 af per year.

The gross omission of any climate change analysis in the DEIR fails to accurately describe the existing climatological conditions into which the project may be approved, fails to accurately describe the diminution of water and natural resources over recent and future years as a result of

⁵⁵ McManus, Dan et al, 2007. Sacramento Valley Water Resource Monitoring, Data Collection and Evaluation Framework

⁵⁶ http://opr.ca.gov/docs/SB_97_bill_20070824_chaptered.pdf

climate change, fails to integrate these changing circumstances into any future baseline or cumulative conditions, and fails to completely analyze or support the DEIR conclusions regarding the project's potentially significant impacts. See, AquAlliance, comments on LTWT EIS/EIR, pp. 30, 40-45.

Both climate change and the 10-Wells Project have the potential to degrade the hydrology of the counties within GCID's district, surrounding counties, and flows in the Sacramento River. This must be remedied in a recirculated DEIR

VI. The EIR fails to analyze a reasonable range of alternatives.

As discussed in Sections I and II above, the DEIR fails to explain what is driving the suggested demand for more water, which leads to a failure to produce viable alternatives. The 10-Wells Project is being sold as an essential need for GCID without providing the context of the Sacramento Valley Water Management Agreement, climate change, demand from outside the Sacramento Valley, and GCID's regular participation in the water market. Additionally, there is no discussion of the Water Fix's premise (formerly the Bay Delta Conservation Plan) that Delta exports through the Twin Tunnels will not only increase in the wetter years, but they will also rise in drier years from water transfers.

The "no project alternative" itself does not constitutes a reasonable range of alternatives.

CEQA requires public agencies to identify in an EIR feasible alternatives that could avoid or substantially lessen a project's significant environmental effects. (Pub. Res. Code §§ 21002, 21002.1(a), 21100(b)(4), 21150.) CEQA's procedures require that an EIR must present a "reasonable range" of alternatives to the project that "foster meaningful public participation and informed decisionmaking." (Guidelines, § 15126.6(f), Guidelines, § 15126.6(a) citing *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553 (*Goleta Valley II*), and *Laurel Heights I, supra*, 47 Cal.3d 376.)

However, this does not mean that the "rule of reason" allows the lead agency to concoct an arbitrary assemblage of "alternatives" selected to make the agency's preferred project a foregone conclusion. The "rule of reason" requires that the action alternatives selected for substantive discussion in an EIR must satisfy specific, objective criteria that would allow the decision makers a reasoned choice. For example, each alternative must be capable of "feasibly attain[ing] most of the basic objectives of the Project." (Guidelines, § 15126.6(a), (f).) The Guidelines provide that,

The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should <u>also</u> identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination.

(Guidelines, § 15126.6(c) [emphasis added.) Hence, alternatives rejected as infeasible are not considered to be among the reasonable range of alternatives required to be considered. Nor can it

be said that the no project alternative can be among the reasonable range of alternatives considered, as it is required to be evaluated regardless of whether it feasibly meets most of the project objectives, which it normally won't. Accordingly, an EIR that limits its substantive discussion to alternatives that the agency has already has determined are not feasible or will not attain the basic objectives of the project, fails to present a "reasonable range" of alternatives that fosters meaningful public participation or informed decisionmaking. (*Id.*)

Here, the DEIR has failed to satisfy CEQA's legal requirement to analyze a reasonable range of alternatives that would reduce or avoid the Project's significant impacts. Rather than evaluate the environmental benefits of any alternatives at all, the DEIR instead rejects out of hand a proper evaluation of any alternative mentioned in the EIR, discussing the environmental impacts of only the no project alternative and the proposed project alternative.

In addition, the DEIR eliminates from discussion alternatives that would not yield 28,500 ac-ft of water per year, but nothing in the project objectives indicates whether or why 28,500 ac-ft per year is a necessary project component. (DEIR 5-3.) Alternatives should only be eliminated if infeasible or do not meet most project objectives.

The DEIR fails to meaningfully evaluate the no project alternative.

The DEIR's discussion of the no project alternative is internally contradictory. On one hand, the DEIR states that, under the no project alternative, "[t]he five existing wells would be used as needed under GCID's discretion," such that "[a]s water shortages occur, GCID anticipates that groundwater pumping would increase both within the District's service area and in adjacent areas to meet future water demands." (DEIR 5-1.) On the other, the DEIR states that "[u]nder the No Project Alternative, GCID would <u>not</u> use its existing wells as part of a coordinated pumping program . . . to supplement water supplies to offset critical water year reductions." (DEIR 5-2.) In conjunction, this description renders the no project evaluation impossible to discern.

More troubling, the DEIR states that, under the no project alternative, the same project would still be built: "Under the No Project Alternative it is assumed that GCID would construct new wells on an as-needed basis for specific District use and that the existing wells included as part of the proposed project would be fully used as needed during years of shortages, once appropriate environmental analysis has been conducted." (DEIR 5-1.) Again, the DEIR's assessment that, under the no project alternative, the district's existing and proposed wells both would, and would not, be used, fails to support CEQA's fundamental purpose of informed environmental decision-making. The DEIR must evaluate the environmental consequences "as what would be reasonably expected to occur in the foreseeable future if the project were not approved." (Guidelines, § 15126.6(e)(2).) While the Guidelines do provide that, "If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed," here, the DEIR does not suggest that substantially the same project would be proposed "by others," as the Guidelines allow for, but rather, the DEIR simply suggests that GCID itself would go forward with the same project. This does not comply with CEQA.

In fact, through the no project alternative, the district could defend existing water rights in a way that would satisfy all of the project objectives. Recently past and current water management and

allocation decisions by state and federal water project operators and managers have reverberated through the past four year's dire supply conditions.⁵⁷ These decisions are not just artifacts of current natural conditions. Not only could the CVP and SWP been managed better in the recent past, but the sellers, like GCID, who are also the holders of very senior water claims, could have fought for themselves, their regions, and the environment in which they live, do business, and recreate. How could they do this, one might ask, and how would it apply to the 10-Wells Project?

This could meet three of the Project's objectives. If the objective is to increase reliability and flexibility for GCID and not, as we wonder in Section I above, the system that facilitates the expansion of the water market, protecting the senior claims to water would meet this objective. It would also provide more flexibility to, "Periodically reduce Sacramento River diversions to benefit migrating fish," and "Protect and maintain agricultural production in times of water shortage to minimize economic disruption." By virtue of its senior water claims, in 2015 alone GCID has proposed to sell 55,283 af to SLDMWA south of the Delta and 15,269 af to TCCA north of the Delta.

While it wouldn't "Offset reductions in GCID Settlement Contract allotments during the irrigation season in drought years," the DEIR acknowledges that this has been extremely rare.

In addition, the DEIR's discussion of biological impacts under the no project alternative contains no explanation of how impacts would be reduced at all, simply stating, in its entirety: "Under the No Project Alternative, GCID would continue to implement its current water management program. Resulting effects on biological resources would be similar to what is presently occurring within GCID's service area." (DEIR 5-2.) This fails to provide any "compar[ison of] the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved," as CEQA requires. (Guidelines, § 15126.6(e)(3)(B).)

The EIR should evaluate an alternative that reduces or eliminates water transfers.

As discussed above, GCID admits it desires to forego groundwater substitution water transfers as part of the LTWT Program, instead selling water through crop idling under the LTWT, and pumping a roughly equivalent amount of groundwater through this project as it originally proposed to use for groundwater substitution under the LTWT. Further, this DEIR proposes that groundwater pumping for this project will only occur during dry and critical years to help offset diminished supplies during those times. And, the LTWT similarly asserts that transfers will only occur during dry and critical years, to help offset diminished supplies during those times; where GCID plans to act as a willing seller of water claims, via crop idling, under the LTWT.

Considering these inextricably interconnected programs in tandem, then, a reasonable alternative to the proposed project would be to not participate in cropland idling and water transfers during

⁵⁷ California Sportfishing Protection Alliance, February 2014. Presentation to the State Water Resources Control Board. "In water year 2011, the Department of Interior used only 348.8 TAF of the 800 TAF of CVPI § 3406(b)(2) water. 'Interior decided to not bank the unused (b)(2) water from water year 2011.' In water year 2013, DWR exported more than 826,000 acre-feet of water beyond what it had informed its contractors it could deliver."

dry and critical years. Indeed, the DEIR itself provides strong reasoning for why this should be considered to be a potentially feasible alternative that would reduce or avoid significant environmental impacts. The DEIR, for example, rejects a potential alternative to *increase* crop idling as infeasible, stating that,

Idling would counter the goals and objectives of the proposed project. Cropland idling would neither increase system reliability nor protect agriculture, and it has the potential to result in significant adverse impacts on land use, water quality, air quality, and wildlife.

(DEIR 5-4.) Because cropland idling is assuredly <u>contrary</u> to the proposed project's goals and objectives, and results in greater environmental impacts, an alternative to <u>not</u> voluntarily participate in the LTWT cropland idling program is, logically, wholly consistent with the proposed project's goals and objectives, and would lessen significant environmental impacts.

Accepting Shortages

When GCID experienced water cutbacks in the past, the entire State of California was also impacted by the multiple year dry conditions. This couldn't be more true in the current drought of 2012-2015. In the past, GCID and other districts in the Sacramento Valley lived within the means of less than 100% supply when times were hard. After all, fallowed fields can be replanted and shared sacrifice by hydrologic region benefits the whole.

VII. Growth Inducing Impacts

This Project has the potential to cause numerous growth-inducing impacts. Section 21100(b)(5) of CEQA requires that an EIR discuss the growth-inducing impacts of a proposed project. A project could have a growth inducing impact if it could:

- Foster economic or population growth, or construction of additional housing;
- Remove obstacles to population growth, for example, developing service areas in previously unserved areas, extending transportation routes into previously undeveloped areas, and establishing major new employment opportunities;
- Encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

The CEQA Guidelines, for example, provide an illustration of how a major expansion of a wastewater treatment plant that might remove wastewater treatment capacity as a constraint on growth in its service area. (CEQA Guidelines, § 15126.2(d).) The DEIR argues, contrary to the CEQA Guidelines, that "Except where supply limitations have been specifically identified as an impediment to development approvals, water supply reliability alone is not the determinative factor inducing growth in any region of California." (DEIR 4-1.) Nothing, however, in the Guidelines or statute suggest that a growth inducing impact is limited to "<u>the determinative factor</u> inducing growth," as if such a factor could ever even be objectively isolated. On the contrary, the removal of any growth limiting factor should be seen as inducing growth.

The DEIR concludes its analysis of growth inducing impacts by stating, "it is not expected that new agricultural opportunities would be of a significant magnitude to drive economic growth resulting in the demand for new housing above that anticipated by Glenn County's or Colusa County's general plans. Therefore, growth inducement is not expected as a result implementing the proposed project." (DEIR 4-1.) Not only does the DEIR not explain what "new agricultural opportunities" would occur, or what would actually constitute a "significant magnitude," but the DEIR also again relies on a false standard of significance by claiming that any such growth would not be meaningful if it was less than that contemplated by the Counties' general plans. (See, Federation of Hillside & Canyon Ass'ns v. City of Los Angeles (2000) 83 Cal.App.4th 1252, 1265 (growth inducement must be discussed even where consistent with general plan.) CEQA nonetheless requires this EIR to incorporate the discussion from any general plan and/or general plan EIR that describes the growth this project would induce. (Friends of the Eel River v. Sonoma County Water Agency (2003) 108 Cal.App4th 859, 877; Sierra Club v. West Side Irrig. Dist. (2005) 128 Cal.App4th 690. It is unlikely these wells or their water supply capacity were evaluated by the respective general plan EIRs. Moreover, and perhaps most importantly, the DEIR only seems to contemplate here the arbitrary pumping levels proposed in the project description, not the actual capacity of these pumps on an annual basis. It is precisely this development of additional capacity, not analyzed by this DEIR, that serves to induce growth.

The Bureau, DWR, the SWRCB, and the Settlement Contractors have all participated in the creation and implementation of the SVWMA that extracts water from areas of origin north of the Delta for export. This opening up of supply on a finite water supply, has only fueled additional demand, which again fuels pursuit of more supply. This is the essence of the dog chasing its tail. As demonstrated above and below, installing wells has been a pivotal piece of the SVWMA and the SVIRWM. This is the essence of growth inducement: creating more capacity. The 10-Wells Project is producing the amount of water needed by a city of over 100,000 people.

Added to this is what we discussed previously: Table 3-4 illustrates that the pumping capacities of the existing wells are far greater than the projected 2,500 gpm rate planned in the Project. (DEIR p. 3-15.) Additionally, the DEIR uses loose language to define the capacities of the new wells: "Each well would have a target pumping capacity of 2,500 gallons per minute and would require a 100- to 250-horsepower pump motor." (p. 2-3.) Having existing infrastructure with greater capacity than proposed in the Project, installing new infrastructure with higher capacity than the proposed Project, and retaining the ability to use that infrastructure for longer periods of time, from the proposed 8.5 months to 12 months, provides GCID with pre-approved and pre-installed infrastructure for future demand.

VIII. Cumulative Impacts

CEQA requires evaluation of a project's incremental effects "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (CEQA Guidelines 15065(a)(3).) "[A] cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts." (CEQA Guidelines 15065(a)(3).)

An EIR must also discuss significant cumulative impacts. CEQA Guidelines §15130(a). Cumulative impacts are defined as two or more individual effects which, when considered

together, are considerable or which compound or increase other environmental impacts. CEQA Guidelines § 15355(a). "[I]ndividual effects may be changes resulting from a single project or a number of separate projects. CEQA Guidelines § 15355(a). A legally adequate cumulative impacts analysis views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable future projects whose impacts might compound or interrelate with those of the project at hand. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. CEQA Guidelines § 15355(b). The cumulative impacts concept recognizes that "[t]he full environmental impact of a proposed . . . action cannot be gauged in a vacuum." *Whitman v. Board of Supervisors* (1979) 88 Cal. App. 3d 397, 408 (internal quotation omitted).

Following these standards, the DEIR must evaluate the cumulative impacts to water resources caused by the project in conjunction with the closely-related projects, below.

The Sacramento Valley Water Management Agreement

The DEIR omits discussion of the SVWMA. The close connection of the 10-Wells Project to the SVWMA is laid bare through documents associated with the [Sacramento Valley] Integrated Regional Water Management Program ("SVIRWMP"), which is discussed briefly. (DEIR p. 3-76.) The DEIR's Section 3.8.2.3 highlights the following districts that benefitted from funds garnered through the SVIRWMP: Browns Valley Irrigation District, Anderson-Cottonwood Irrigation District, Feather Water District, GCID, Natomas Central Mutual Water Company, Sutter Mutual Water Company, Meridian Farms Mutual Water Company, Pelger Mutual Water Company, Reclamation District 108, River Garden Farms Company, and Butte Water District. Moreover, the DEIR discloses that public money through Proposition 50 has been used for 11 implementation projects in the Sacramento Valley. However, the details of the projects are not disclosed. Instead, the DEIR asserts that, "Although several of the projects funded by this grant are generally similar in nature, each project has independent utility, and is implemented by each grantee as needed to supplement their current surface water supplies in various water-year types." Nevertheless, the SVWMA and the Sacramento Valley Regional Water Management Plan's documents unveil a very different picture.

In 2003, the Bureau published an NOI/NOP for a "Short-term Sacramento Valley Water Management Program EIS/EIR." (68 Federal Register 46218 (Aug 5, 2003).) As summarized on the Bureau's current website:

The Short-term phase of the SVWM Program resolves water quality and water rights issues arising from the need to meet the flow-related water quality objectives of the 1995 Bay-Delta Water Quality Control Plan and the State Water Resources Control Board's Phase 8 Water Rights Hearing process, and would promote better water management in the Sacramento Valley and develop additional water supplies through a cooperative water management partnership. Program participants include Reclamation, DWR, Northern California Water Association, San Luis & Delta-Mendota Water Authority, some Sacramento Valley water users, and Central Valley Project and State Water Project contractors. SVWM Program actions would be locally-proposed projects and actions that include the development of groundwater to substitute for surface water supplies, conjunctive use of groundwater and surface water, refurbish existing groundwater

extraction wells, install groundwater monitoring stations, install new groundwater extraction wells, reservoir re-operation, system improvements such as canal lining, tailwater recovery, and improved operations, or surface and groundwater planning studies. These short-term projects and actions would be implemented for a period of 10 years in areas of Shasta, Butte, Sutter, Glenn, Tehama, Colusa, Sacramento, Placer, and Yolo counties.⁵⁸

The resounding parallels between the SVWMA NOI/NOP and the presently proposed project are not merely coincidence: they are a piece of the same program, and are closely-related activities that will result in similar effects upon the same environmental resources.

Page 2 of the SVIRWMP's *Proposal for Implementation Grant, Step 2 Attachment 5, Work Plan⁵⁹* presents the centerpiece project, the Conjunctive Water Management Project. "A successful Conjunctive Water Management Project within the Sacramento Valley requires three critical activities that must proceed in unison. These include (1) groundwater production, (2) groundwater recharge, and (3) monitoring and assessment." What follows are the participating districts with the number of productions wells they sought:

- Anderson Cottonwood Irrigation District Groundwater Production Element 4 wells
- Browns Valley Irrigation District Water Groundwater Production Element 1 well
- Feather Water District Water Management Groundwater Production Element 1 well
- Glenn-Colusa Irrigation District Groundwater Production Element 8 wells
- Lewis Ranch Groundwater Production Element 1 well
- River Garden Farms Groundwater Production Element 2 wells
- Meridian Farms Groundwater Production Element 1 well
- Pelger Mutual Water Company Groundwater Production Element 1 well
- RD 108 Groundwater Production Element 5 wells

How are these districts' projects, including the Lead Agency GCID's, viewed as "generally similar in nature," but with "independent utility" when they are pursuing the specific goals of the SVWMA and the SVIRWMP? And let us be clear, those goals are *not* just for "supplemental supply" within their districts as suggested. The SVIRWMP elucidates that, "These elements were strategically formulated under the adopted Sacramento Valley Water Management Agreement (SVWMA, Phase 8, included in Attachment 4), which was executed in December 2002 by more than 40 Sacramento Valley water users, the Department of Water Resources, the Department of Fish and Game, the Bureau of Reclamation, the Fish and Wildlife Service, and various water users throughout the state. Fifty percent of the Conjunctive Water Management Project capacity will be dedicated to meeting water quality standards in the Bay-Delta while the remaining 50 percent will be used to improve local and regional water supply reliability or to help meet other water needs in the state." [emphasis added]⁶⁰

The DEIR also fails to disclose how many of the SVWMA districts and/or the SVIRWMP Participating Entities have installed wells that have been used in water transfers and how many are

⁵⁸ <u>http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=788</u>

⁵⁹ Northern California Joint Exercises of Powers, June 2006.

⁶⁰ Id. p.2.

committed to participate in the 10-Year Water Transfer Program (aka Long-term Water Transfers)⁶¹ or continuing transfers outside it.⁶² In addition, where is the disclosure that the production wells above, added to others installed by SVWMA districts and SVIRWMP Participating Entities, have been used to facilitate the goals from the SVIRWMP quote immediately above?

The 10-Wells Project that is presented as a seemingly innocuous attempt to "augment District surface water supplies during dry and critically dry water years" (DEIR p. 2-1) is part of a much larger agreement and multiple planning efforts. GCID's past and current actions make it abundantly clear that the stated 10-Wells Project is just another attempt to obfuscate its involvement in implementing the SVWMA through massive public funds from SVIRWM grants and federal appropriations (see Section I).

The 10-Year Water Transfer Program (aka Long-Term Water Transfers)

The DEIR mentions the 10-Year Water Transfer Program ("10-Year Program") in section 3.8.2.1. It does <u>not</u> reveal that the 10-Year Program contains significant numeric figures that should be incorporated into the cumulative impact analysis, such as:

- 1. The EIS/EIR analyzed transferring up to 600,000 af per year from the selling districts. No matter what figure the Bureau transfers year-to-year, this program has the ability to transfer up to 600,000 af each year.
- 2. GCID may have provided internal direction to itself, subject to change, that counter numbers in the 10-Year Program's EIS/EIR (DEIR p. 3-76), but the 10-Year Program's Final EIS/EIR retained the original number and will allow the sale of up to 91,000 af per year from GCID in any given year. (p. ES-6 and p. 2-14.) A vote by the GCID Board of Directors is all it would take to reverse the internal commitment, a non-binding statement, and begin selling water at the 91,000 af per year threshold.

Annual Transfers

The DEIR fails to delineate the numerous transfers that have occurred in the recent past and those that are proposed outside the 10-Year Water Transfer Program. What should the public conclude from this glaring omission? GCID's failure to disclose their own repeated transfers and those from the region and Sacramento Valley is arbitrary and capricious.

The DEIR should disclose what level of monitoring has occurred during the past annual transfers. If monitoring transpired, was there comprehensive coordination of methods, data collection, and data analysis for both individual and all Sacramento Valley water transfers and are the products available to the public? This might shed light on the results of cumulative actions by numerous water sellers in the Sacramento Valley, including the lead agency, GCID. This material is not presented here nor is it in the public realm, to our knowledge.

⁶¹ U.S. Bureau of Reclamation and San Luis Delta Mendota Water Authority, 2015. Final EIS/EIR 10-Year Water Transfer Program (aka Long Term Water Transfers) p. ES-12.

http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=18361

⁶² Id. p. 4-5.

As discussed above, the cumulative installation of well infrastructure, the repeated annual water transfers, participation in the 10-Year Water Transfer Program, and the increasing escalation of groundwater use by Sacramento Valley water districts involved in water sales do not exist in a vacuum. Instead, they are actually integrated, important parts of a broader program to develop regional surface and ground water resources into a conjunctive use system. GCID has planned for multiple decades to exploit groundwater, to "… integrate the Lower Tuscan Formation into the Central Valley water supply system…" and bank "…SWP and CVP contractual entitlements in the Lower Tuscan Formation…"⁶³

The Project is also only one of several proposed and existing projects that affect the regional aquifers and surface waters. The existence of these numerous related projects makes an adequate analysis of cumulative impacts especially important.

IX. Additional Comments and Questions

Modeling

SacFEM has serious flaws yet is relied on exclusively for projections and impact analysis. Material produced for AquAlliance's comments on the 10-Year Water Transfer Program's EIS/EIR are equally relevant for the 10-Wells Project and is presented here. "One example of incorrect modeling assertions in the EIR/EIS is the characterization¹ of SacFEM2013 and its parent code MicroFEM as 'three-dimensional' and 'high-resolution'. In fact, the SacFEM2013 model provides only a linked set of two-dimensional analyses², and would more charitably be described as "two-and-a-half dimensional" instead of possessing a fully-3D modeling capability. This limitation is not an unimportant detail, as a general-purpose 3D groundwater model could be used to predict many important physical responses, e.g., the location of the phreatic surface within an unconfined aquifer. For the SacFEM2013 model, this prediction is part of the data instead of part of the computed solution, and hence SacFEM2013 apparently has no predictive capability for this all-important aquifer response."⁶⁴

The relevant content from the *SACFEM2013: Sacramento Valley Finite Element Groundwater Flow Model User's Manual*⁶⁵ on this topic illustrates that the model is indeed being touted as having the capacity "[t]o generate a 3D surface defining the elevation of the base of fresh groundwater." (p. 3-5.) In addition, the DEIR states that, "SACFEM2013 was developed using the MicroFEM modeling code (MicroFEM, 2015), which is capable of simulating three-dimensional, transient, single-density groundwater flow in layered systems." (p. A-1.) Sadly, it is clear that the DEIR is relying on the very limited predictive capability of SacFEM for many of the most crucial conclusions for disclosing the significance of impacts from the 10-Wells Project.

This thin veneer is no substitute for actual, on the ground data from GCID's groundwater substitution transfers using the five existing wells. For example, "GCID pumped groundwater from July to September 2013 to make water available for transfer to the San Luis & Delta

⁶⁴ Mish, Kyran D., 2014. Comments for AquAlliance on Long-Term Water Transfers Draft EIR/EIS, p. 3.

⁶³ U.S. Bureau of Reclamation Assistance Agreement, 2006, p. 5.

⁶⁵ "A complete description of the construction and calibration of SACFEM2013 is provided in SACFEM2013:

Sacramento Valley Finite Element Groundwater Flow Model User's Manual (CH2M HILL and MBK Engineers, Inc., 2015)." (DEIR p. A-1.)

Mendota Water Authority (SLDMWA). Groundwater was pumped in lieu of diverting surface water under its pre-1914 water right and its Settlement Contract No. 14-06-200-855A-R-1 with the United States Bureau of Reclamation (USBR)."⁶⁶ The results of the groundwater substitution transfer are poorly discussed in the report, regularly using vague numeric approximations such as "recovered to within a few feet" and "generally recovered." However the exhibits highlight the serious effects from pumping 5,000 af in 2013. When Figure D-7 is contrasted with Figure D-8, it is clear that impacts were occurring as far as 3-4 miles away across the Sacramento River in Butte County were still drawing water to the cone of depression six months later. The hydrograph figures illustrate some conditions that are not in the text and contradict some of the report, such as:

- Figure C- 2. Production well GCID 2 experienced a precipitous collapse of 240 feet at the end of the transfer period, but appears to have almost recovered in March 2014.
- Figure C-10 Monitoring well 21N02W04G002M dropped over 50 feet at the end of the transfer period and in March 2014 was still approximately 13 feet below the March 2013 starting measurement.
- Figure C-13. Monitoring well 22N02W01N001M dropped over 90 feet at the end of the transfer period and in March 2014 was still approximately 10 feet below the March 2013 starting measurement.
- Figure C-14. Monitoring well 22N02W15C002M dropped over 50 feet at the end of the transfer period and in March 2014 was still approximately15 feet below the March 2013 starting measurement.

Actual data with additional, unbiased professional analysis would have better informed the public than what is provided with the DIEIR's reliance on modeling. "MicroFEM is a poor choice for such large-scale modeling. It is an old code that apparently utilizes only the simplest (and least accurate) techniques for finite-element modeling of aquifer mechanics, and MicroFEM (and hence SacFEM2013) embed serious limitations into the model that compromise the accuracy of the computed results." ⁶⁷

Maps must be provided to illustrate all wells in an expanded radius of the Project's wells

There is a profound gap in understanding regarding the potential areas of impact from GCID's existing and proposed 10 wells. (See CEQA Guidelines § 15124(a).) There also are no maps in the DEIR that indicate the number of domestic and production wells even in the area of impact assumed by SacFEM. We argue that maps with this information must be provided in a recirculated Draft EIR and that the radius of potential impact must be expanded. Drawing from the scientific analysis completed by professors Todd Greene and Karin Hoover,⁶⁸ we find that, "The importance of this new information on the hydrostratigraphy around the GCID wells is that the generally symmetrical pattern of drawdown that resulted from the SACFEM2013 modeling effort may not reflect the predominance of coarser-grained, water-rich zones on the east side of the wells. The results of the SACFEM2013 model show that the total area of the pumping impacts and the outer distance to the no-impact boundary is greater to the west in Glenn County, than east in Butte

⁶⁶ West Yost Associates, 2014. 2013 Final Water Transfer Report for Glenn Colusa Irrigation District, p. 1.

⁶⁷ Mish, Kyran D., 2014. Comments for AquAlliance on Long-Term Water Transfers Draft EIR/EIS, p. 4.

⁶⁸ Greene, Todd J. and Karin Hoover, 2015. *Hydrostratigraphy and Pump-test Analysis of the Lower Tuscan/Tehama Aquifer, Northern Sacramento Valley, CA.*

County. In fact, no wells in Butte or Tehama counties are proposed for monitoring in mitigation measures WR-1 and WR-2, and obviously are not included in the Glenn County BMO monitoring program. This lack of monitoring in Butte County, when that area may be a major source of the water pumped by GCID's wells, may allow for impacts that are inadequately recognized and thus improperly mitigated."⁶⁹

Seismicity

The DEIR fails to discuss in any way the possible seismic risks from the 10-Wells Project. Not only does the construction of five new wells suggest a potential for seismic impacts, but there is also potential for seismic shaking because of subsidence from Project operations that in turn may cause additional stress to existing structures. Lack of disclosure in the DEIR necessarily leads to an absence of analysis of the potential effects from the Projects' construction and excessive groundwater pumping on the numerous known earthquake faults running through and about Northern California. As recently detailed in a paper published by a well-respected British scientific journal, "[u]plift and seismicity driven by groundwater depletion in central California," excessive pumping of groundwater from the Central Valley might be affecting the frequency of earthquakes along the San Andreas Fault, and raising the elevation of local mountain belts. The research posits that removal of groundwater lessens the weight and pressure on the Earth's upper crust, which allows the crust to move upward, releasing pressure on faults, and rendering them closure to failure. The 10-Wells Project and the cumulative water transfer projects impact the volume of groundwater extracted as farmers are able to pump and then forego surface water in exchange for money. The drought has exacerbated the demands from the water transfer market that is the major goal of the SVWMA, which is being implemented through the SVIRWMP and the 10-Year Water Transfer Program and has also depleted the natural regeneration of groundwater supply due to the scarcity of precipitation.

Detailed analyses of this seismicity and focal mechanisms indicate that active geologic structures include blind thrust and reverse faults and associated folds (e.g., Dunnigan Hills) within the Coast Ranges-Sierran Block ("CRSB") boundary zone on the western margin of the Sacramento Valley, the Willows and Corning faults in the valley interior, and reactivated portions of the Foothill fault system. Other possibly seismogenic faults include the Chico monocline fault in the Sierran foothills and the Paskenta, Elder Creek and Cold Fork faults on the northwestern margin of the Sacramento Valley.⁷⁰

This deficiency must be corrected and included in a recirculated Draft EIR.

X. Conclusion

GCID's examination of the proposed Project fails to comply with the most essential review and disclosure requirements of CEQA, thereby depriving decision makers and the public of the ability to consider the relevant environmental issues in any meaningful way (details above). Rather,

⁶⁹ Custis, Kit, 2015. Comments and Recommendations on Draft Environmental Impact Report for Glenn Colusa Irrigation District's Groundwater Supplemental Supply Project, June 2015 for AquAlliance, p. 5. ⁷⁰ http://archives.datapages.com/data/pacific/data/088/088001/5_ps0880005.htm (Custis, Exhibit A 10-Year Water

Transfer Program)

GCID has neglected to disclose significant information regarding the 10-Wells Project and cumulative impacts in violation of CEQA in what appears to be an ongoing effort to avoid disclosure of GCID's commitments to the SVWMA and implementation through the SVIRWM and the 10-Year Water Transfer Program. AquAlliance has demonstrated in 2010,⁷¹ 2012,⁷² 2013,⁷³ 2014,⁷⁴ and in 2015 that key questions have not been addressed, significant data gaps exist and the possible and very probable impacts are not disclosed, but summarily rejected without data and a scientific basis for the conclusions.

For the majority of the twentieth century, northern California supported family farming, healthy salmon runs, rich hydrologic watersheds, and a diverse environmental heritage. GCID members share in this heritage. We hope that GCID will not only recall the heritage of which it is a part, but actively participate in efforts to defend and restore the health of this region and its water legacy for future generations. That legacy continues to be in the crosshairs of water policies that have repeatedly failed in the San Fernando, Owens, and San Joaquin valleys of California. For all of the above-mentioned reasons, the 10-Wells Project should either be withdrawn or the DEIR should be withdrawn, revised, and recirculated after the release of the long-missing SVWMA programmatic EIR.

AquAlliance respectfully requests notification of any meetings that address this proposed GCID Project or any other GCID project that requires any consideration of CEQA. Please send AquAlliance any additional documents that pertain to this project, including a possible notice of determination through the U.S. Postal Service and e-mail.

Sincerely,

B. Vlanna

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⁷¹ AquAlliance comments on the 2010/2011 Water Transfer Program's EA/FONSI

⁷² AquAlliance's comments on water transfers by Western Canal WD and Butte Water District, 2012.

⁷³ AquAlliance's scoping comments on the Bureau and SLDMWA's North-to-South Water Transfer Program, 2013.

⁷⁴ AquAlliance comments on the 2014 Bureau and SLDMWA's North-to-South Water Transfer Program and the SLDMWA's 10-Year Water Transfer Program EIS/EIR.