SCDA-57 Michael A. Brodsky Law Offices of Michael A. Brodsky SCDA-60 Errata 201 Esplanade, Upper Suite Capitola, CA 95010 Telephone: (831) 469-3514 Facsimile: (831) 471-9705 Email: michael@brodskylaw.net 5 SBN 219073 6 Attorney for Protestants Save the California Delta Alliance, et al. 7 BEFORE THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD 8 PROTESTANT SAVE THE CALIFORNIA 9 IN RE CALIFORNIA WATERFIX DELTA ALLIANCE, ET Al.'s WRITTEN **CALIFORNIA DEPARTMENT OF** TESTIMONY OF MICHAEL BRODSKY 10 WATER RESOURCES AND U.S. REVISED AS PER THE SWRCB ORDER OF 11 **BUREAU OF RECLAMATION OCTOBER 7, 2016.** PETITION FOR CHANGES IN WATER RIGHTS, POINTS OF **DIVERSION/RE-DIVERSION** 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

I, Michael A. Brodsky do hereby declare¹:

I. INTRODUCTION.

I am familiar with the evolution of the Bay Delta Conservation Plan ("BDCP") into its current guise as the California Water Fix ("CWF"). It is important to understand that CWF is still the BDCP and all the statutory requirements applicable to the BDCP are applicable to CWF. I have followed the development of the BDCP since 2010, and have extensively reviewed the historical record of the BDCP back to its inception in 2006. I prepared and submitted extensive comments on the BDCP 2013 Draft EIR/S and the 2015 Revised Draft EIR/S. I also attended numerous BDCP public meetings and met separately in Discovery Bay with then Deputy Director of the California Natural Resources Agency Jerry Meral regarding the BDCP's impacts on Discovery Bay and potential mitigations. I prepared and submitted extensive comments on the CWF to the Army Corps of Engineers.

I am also familiar with the development and adoption of the Sacramento-San Joaquin Delta Reform Act of 2009 ("Delta Reform Act"). I prepared and submitted extensive comments on the development of the Delta Plan, pursuant to the Delta Reform Act, and attended numerous public meetings of the Delta Stewardship Council and Delta Independent Science Board focusing on the BDCP during and after preparation of the Delta Plan.

In 2013, I filed a Petition for Writ of Mandate seeking to set aside the Delta Plan for failure to comply with the Delta Reform Act. I have litigated that case for over three years and extensively engaged with materials expounding the relationship of the Delta Reform Act and other portions of the Water Code to the BDCP, including the relationship between the BDCP, the Delta Reform Act, and the respective roles and duties of the State Water Resources Control Board ("Board") and the Delta Stewardship Council with regard to the BDCP under the Delta Reform Act. Over the past six years, I would estimate that I have spent over 1,000 hours studying the BDCP and its relationship to the Delta and applicable California law.

¹ Testimony will be illustrated with slides from exhibits cited herein.

I have also spent extensive time boating and recreating throughout the Delta since I was 13 years old. I currently boat throughout the Delta and frequently spend time at my home in Discovery Bay. I am familiar with the Delta and Discovery Bay and understand the import of the proposed CWF with respect to the changes it will bring to the Delta and Discovery Bay.

In 2006, the BDCP may have started with noble intentions. However, the BDCP failed in the spring of 2015 when DWR abandoned its long-standing commitment to meet the "gold standard" of a Habitat Conservation Plan. The BDCP promised 90,000 or more acres of restored Delta habitat. That is gone. The BDCP had promised a "big gulp" and "little sip" approach to diversions—diverting significant amounts of water only at times of high flow and diverting very little water during the summer months. CWF has abandoned that approach and intends to accomplish its primary goal of exporting full contracts amounts of water by diverting more water during the dry summer months. It has turned big gulp / little sip on its head.

Based on my experience and familiarity with the issues surrounding CWF, and referencing the expert testimony establishing specific water quality impacts, it is my opinion that injury to legal users of water and human uses is unavoidable if CWF is approved in its proposed form.

Because it has admitted that it cannot correctly model the effects of CWF on the Delta, DWR has fallen back on a "trust us" approach. Because we have done a good job of complying with Delta standards in the past, we can be trusted not to misuse the enormous new diversion capacity of the tunnels—so goes the argument. In my opinion, however, DWR's behavior throughout the development of the BDCP and CWF indicates that they cannot be trusted. Their response to public input has uniformly been to deflect criticism rather than engage with stakeholders. Their response to data that indicates impacts has been to smooth, average, and dissemble the data so that impacts are hidden. (*Compare*, *e.g.*, DWR-5, p.59 with SCDA-18², showing DWR's mean monthly averaging hides salinity impacts; *see also* SCDA-35³) They have steadfastly refused to roll up their sleeves and begin the hard work of crafting a portfolio solution to accompany the new point of diversion

SCDA-18 is page 13 of SCDA-36, which is introduced in the testimony of Tom Burke (SCDA-35, p.4.).

³ SCDA-35 is the written testimony of Tom Burke

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and have instead dusted off the failed 1982 peripheral canal in subterranean guise and devoted their efforts to packaging and branding.

DWR has attempted repeatedly to give Water Contractors inappropriate roles and outsized influence over water allocation decisions. The 2013 version of the BDCP contained a complicated management structure that allowed water contractors to effectively veto any reduction in exports. (SCDA—6⁴ [Mount Report noting that "when examined in detail, the draft BDCP blurs the lines between implementation and regulation and grants the permittees [Contractors] unusual decision authority"].) Even after this scheme, buried in techno-jargon, was brought into the light of day DWR continued to push to allow those who benefit from exports to determine export amounts.

"Trust us" is not evidence. DWR has failed to carry its burden of demonstrating no injury to legal users of water.

CWF is a legislatively disfavored project. The legislature declared that the Delta and "California's water infrastructure are in crisis." (Water Code § 85001(a). The legislature set out in the Delta Reform Act standards that the BDCP (including CWF) should meet if it were to be legislatively favored as a part of resolving the crisis. (Water Code § 85320(b).) The legislature ordained that no state funds may be expended on any aspect of CWF if it fails to meet the statutory eriteria set out in the Delta Reform Act for resolving the Delta's crisis. (Water Code § 85320(b).5 CWF did fail to meet the criteria set out in Water Code section 85320. No state funds may be expended on CWF and it comes to this Board as a legislatively disfavored project.

The Board has ample legal grounds to deny the Petition. If the Board considers granting the Petition with conditions, those conditions should not be constrained by the limits of existing infrastructure. There is ample authority for the Board to impose conditions that would force either a reduction in exports south of Delta or would force DWR and Contractors to undertake a portfolio approach as a part of the CWF project description, including additional surface storage, additional groundwater recharge, integrated water management, and conservation, including increasing

The Delta Reform Act has been offered into evidence as DWR-108.

regional self-reliance. These measures are all cost effective, feasible, and necessary. (SWRCB-23-2 | 46⁶; SCDA-40–SCDA-47; SCDA-50–SCDA-<u>5556</u>.)⁷

II. OVERVIEW OF TESTIMONY.

In order to comply with the Delta Reform Act, CWF must demonstrate a quantifiable reduction in reliance on the Delta as a source of exported water supply. (Water Code § 85021.)

CWF must also demonstrate that it enhances and protects the quality of water supply from the Delta, including the water supply for in Delta diverters and in Delta human uses (Water Code § 85001(e).) At the same time, CWF must demonstrate that it contributes to providing a more reliable water supply for the state. (Water Code § 85001(e).) Appropriate Delta flow criteria are a subject for detailed consideration in Part 2 of these hearings. However, restoring Delta flows, enhancing and protecting the quality of water supply in the Delta, reducing reliance on the Delta as a source of exported water, and providing a more reliable water supply for the state are irrefragable parts that are all required of a whole CWF if it is to comply with the Delta Reform Act. They are also necessary if injury to legal users of water and human uses is to be avoided in the presence of massive new diversion capacity.

CWF fails on all counts.

SWRCB-46 is a true and correct copy of the Delta Plan.

SCDA-40 is a true and correct copy of Delta Alliance's October 30, 2015, comments on the BDCP and attachments hereto; SCDA-41 is a true and correct copy of Delta Alliance's July 29, 2014, comments on the BDCP and attachment hereto; SCDA-42 is a true and correct copy of DWR Bulletin 118 California Groundwater; SCDA-43 is a true and correct copy of Chapter 4, Conjunctive Management and Groundwater Storage, of the 2005 California Water Plan Update; SCDA-44 is a true and correct copy of Designing Successful Groundwater Banking Programs in the Central Valley (National Heritage Institute 2001); SCDA-45 is a true and correct copy of Estimating the Potential for in Lieu Conjunctive Water Management in the Central Valley of California (National Heritage Institute 2002); SCDA-46 is a rue and correct copy of Groundwater and Surface Water in Southern California A Guide to Conjunctive Use
Association of Ground Water Agencies 2000); SCDA-47 is a true and correct copy of Madera Irrigation District Water Supply Enhancement Project, Final Environmental Impact Statement (USBR 2011); SCDA-51 is a true and correct copy of Delta Alliance's November 16, 2011, comments on the BDCP First Amendment to the Memorandum of Agreement Regarding Collaboration on the Planning, Preliminary Design and Environmental Compliance for the BDCP; SCDA-52 is a true and correct copy of Feasibility Study of a Maximal Program of Groundwater Banking National Heritage Institute 1998); SCDA-53 is a true and correct copy of the Record of Decision for the Madera Irrigation District Water Supply Enhancement Project (USBR 2011); SCDA-54 is a true and correct copy of Faet Sheet Sacramento River Flood Control Project Weirs and Flood Relief Structures (DWR 2010); SCDA-55 is a true and correct copy of Sustainability from the Ground Up Groundwater Management in California — A Framework Association of California Water Agencies 2011).

"The WaterFix project does not propose additional flows in the Delta." (SCDA-34⁸, p.3.) In fact its design makes injury to in-Delta users all the more likely through increased water quality violations. Under Alternative 4A, "the flexibility that Reclamation and DWR have to operate the system to ensure that water quality criteria are met will be seriously diminished, and the two agencies will have little room for error in operating the system to protect beneficial uses and achieve the coequal goals." (SCDA-34, p.3.)

CWF demonstrates that it does not advance a quantifiable reduction in reliance on the Delta as a source of exported water. (DWR-5, pp. 34–40.) The only exception is a claimed reduction in combined deliveries to south of Delta SWP and CVP water service contractors. (DWR-5, p. 41.) However, this reduction occurs only at Boundary 2.

Under the current configuration of the CVP and SWP (without CWF), high quality Sacramento River water flows through the channels and sloughs of the Delta before reaching the existing diversion points in the south Delta. (DWR-1, p.8; SCDA-19; SCDA-36, p.2; SCDA-33, p.1.) With the new NDD, CWF proposes to divert for export south of the Delta significant quantities of water *before* that water flows through the Delta. The NDD may "enhance the quality of water supply from the Delta," as required by Water Code section 85001(e), for south of Delta export contractors, but it degrades the quality of water supply from the Delta for in-Delta diverters and in-Delta human uses. (SCDA-26⁹ [USEPA letter noting that while NDD "would improve the water quality for agricultural and municipal water agencies that receive water exported from the Delta, water quality could worsen for farmers and municipalities who divert water directly from the Delta"].)

CWF fails to provide a more reliable water supply for the state because it is a single-focus project without any of the portfolio elements that a consensus of the relevant scientific community agrees are indispensible for improving the reliability of California's water supply. (*See* SCDA-40, pp. 14–17 and attachments thereto; SCDA41–SCDA-46.) The failure to include portfolio elements,

SCDA-34 is a true and correct copy of comments of the USEPA on the Supplemental Draft Environmental Impact Statement Bay Delta Conservation Plan/California WaterFix (October 30, 2015).

⁹ SCDA-26 is a true and correct copy of comments of the USEPA on the Draft Environmental Impact Statement for the Bay Delta Conservation Plan (August 26, 2014).

the upstream location of the NDD, and the increasing likelihood of longer and more severe droughts due to climate change means that Temporary Urgency Change Petitions ("TUCPs") will be used to allow diversions to continue at the upstream NDD while the interior Delta is allowed to become salty and degraded. This structural change in the system constitutes injury to legal users of water within the Delta¹⁰, regardless of the Board's authority to suspend D-1641 standards through TUCPs. Neither meeting D-1641 standards nor the lawful suspension of those standards equates to noninjury to legal users of water and human uses. If water quality is degraded due to CWF to the extent that those users are injured-in-fact, that constitutes legal injury regardless of whether D-1641 is being met or has been lawfully suspended.

CWF fails to restore Delta flows to the injury of legal users of water and human uses within the Delta. Restoring Delta flows means more fresh water flowing through the Delta. (SCDA-26 [USEPA letter noting that "diminished seaward flows have played a significant role" in degrading Delta water quality].) CWF as proposed for most of its operating range does the opposite. CWF conflates some reductions in reverse Old and Middle River flows ("OMR") with restoring Delta flows. OMR reverse flows are a problem and CWF does take steps to address this problem. However, it reduces OMR flows by diverting less water at the existing points of diversion and shifting diversions upstream of most of the Delta. This strategy for reducing OMR flows *reduces* fresh water flow through the Delta. As far as restoring Delta flows, CWF takes ten steps backward and one step forward.

Capturing water at times of high flow and storing that water for use at times of scarcity is an essential element of any plan to divert water at an upstream location that could both make the water supply for the state more reliable and avoid injury to legal users of water in the Delta. Diverting water during wet conditions, storing it, and reducing diversions during dry periods takes pressure off the Delta. However, "[f]or the purposes of BDCP simulation modeling

¹⁰ In its ruling of August 24, 2016, the Board placed certain evidentiary limitations on Save the California Delta Alliance. However, the Board made clear that Delta Alliance "may argue based on any evidence that is admitted into evidence that the WaterFix petition will cause injury to legal users of water." (August 24 Ruling, p.2.)

SCDA-60 Errata

1	, south of Delta storage was limited to space within San Luis Reservoir. Operations during
2	wet and above average conditions are often constrained by available space to store water in this
3	facility. Expanding potential storage, particularly groundwater storage, would have created
4	considerably more flexibility in exports, particularly during wet years." (SCDA-6, p. 22.) Because it
5	lacks expanded storage, "BDCP therefore does not achieve the broader goal of reducing pressure
6	on the Delta during dry years by shifting exports to wet years," (SCDA-6, p.27, emphasis original.)
7	It is precisely during these dry years that water quality is degraded the most to the detriment of in-
8	Delta users. In order to make sense, the new points of diversion must be part of a "Better System:
9	Storing Floods to Ride Out Droughts (and Give the Delta a Break)." (SWRCB-2346 ¹¹ , p. ES-6.)
10	CWF has expressly rejected this strategy. (SCDA-27 ¹² , p. 2 [DWR publication "Your Questions
11	Answered," noting that "[w]"hile water storage is a critically important tool for managing
12	California water resources, developing new water supplies and including new storage is not part of
13	the BDCP [and] was eliminated from consideration" early in the process].)
14	The goal and design of CWF is to maximize exports:
15	[T]he models sought to meet the requirements of D-1641, the remanded BiOps, reservoir and diversion facility constraints, and south of Delta storage. The objective
16	function was then to maximize Delta exports within those constraints.
17	(SCDA-6, p. 24.) Given all existing constraints, including inadequate storage capacity and
18	regulatory constraints, how can we export more water, was the question CWF planners posed. Their

answer is currently before the Board.

The Board need not prescribe what sort of facilities must be built to allow for a big gulp little sip result that would allow for increased diversion capacity and at the same time avoid injury to legal users and human uses. However, the Board can impose performance conditions on approval of a new point of diversion that would act as "infrastructure forcing" standards, allowing DWR and Contractors to determine what portfolio elements are best to accompany the change in point of diversion for the benefit of water suppliers within and without the Delta. Performance conditions

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¹¹ Delta Alliance introduces the Delta Plan (SWRCB-4623) into evidence and I attest SWRCB is a true and correct

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might be moving toward the 2010 Flow Criteria Report or Alternative 8 flows (based on SWRCB staff suggestions) over time.¹³

III. DETAILED TESTIMONY

A. CWF FAILS TO REDUCE RELIANCE ON THE DELTA AS A SOURCE OF EXPORTED WATER AND FAILS TO ENHANCE THE QUALITY OF WATER SUPPLY FROM THE DELTA RESULTING IN INJURY TO LEGAL USERS OF WATER AND HUMAN USES.

Water Code section 85001(c) provides that:

By enacting this division, it is the intent of the Legislature to provide for the sustainable management of the Sacramento-San Joaquin Delta ecosystem, to provide for a more reliable water supply for the state, to protect and enhance the quality of water supply from the Delta, and to establish a governance structure that will direct efforts across state agencies to develop a legally enforceable Delta Plan.

The legislature's intent was to "enhance the quality of water supply from the Delta" for inDelta users and export Contractors alike. Although DWR reads this paragraph to apply only to the
quality of water exported from the Delta, there is no such limiting language and no evidence that the
legislature meant anything other than what it said. Likewise, a "more reliable water supply for the
state" includes those portions of the state that are within the Delta and rely on water diverted from
the Delta.

Water Code section 85021 provides that:

The policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency.

Water Code sections 85001 and 85021are binding on the Board and all other state agencies making decision that impact the Delta.

The trial court decision in The Delta Stewardship Council Cases is directed at the Contractors' contention that they may not be required to comply with sections 85001 and 85021. As such, the trial court's interpretation of the Delta Reform Act illuminates these proceedings before the Board insofar as it sheds light on the intent of the legislature in enacting the Delta

¹³ Delta Alliance will propose detailed conditions based on operating rules for CWF and demonstrate that those operating rules are feasible given the potential for infrastructure improvements that would make them cost-effective and feasible in its rebuttal testimony.

Reform Act with respect to rights to export water from the Delta. The trial court held:

2 3 The plain language of section 85021 requires all water supply needs beyond the date of its adoption to be balanced, and reduced reliance must be a part of this balancing. There is no indication that section 85021 only affects water uses above current

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(SCDA-19, p. 43: 12–15.) The trial went on to hold that the requirement of reduced reliance is not contravened by existing water rights or the savings clauses of the Delta Reform Act. With regard to

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"water right applications," the trial court held that the requirement of reduced reliance:

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... is merely a statutory enumeration of the principle of reasonable use and the public trust doctrine. Section 85023 provides '[t]he longstanding constitutional principle of reasonable use and the public trust doctrine shall be the foundation of state water management policy and are particularly important and applicable to the Delta.' Accordingly, the legislature affirmed its intent that these principles continue to apply to limit an owner's interest in water.

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(SCDA-19, p. 31: 9, 18-23.)

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The trial court's interpretation of the Delta Reform Act is consonant with There is a longstanding legislative intent to reduce exports from the Delta. (Water Code § 10013 [stating intent to "minimize the need to import water from other hydrologic regions;"] Water Code § 10620(f) [stating intent to "minimize the need to import water from other regions;"] Stats. 2001, c.320, § 1(c) (SCDA-30¹⁴) ["The legislature finds and declares" that the "well-being of the people of California will be best served ...[by limiting exports] in the foreseeable future to mov[ing] *surplus* supplies between regions," emphasis added].) Surplus supplies are those supplies available after all in-Delta needs are met.

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The Board was not a party to the Delta Stewardship Council cases and the decision is not directly binding on the Board. However, the trial court's interpretation of the Delta Reform Act would mean that the Act would require the Board to impose permit conditions achieving reduced reliance and enhanced water quality supply for in-Delta users, pursuant to Water Code sections 85001 and 85021. These issues are directly relevant to Part 1 of the hearings as they implicate the

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25 water rights of DWR and of in-Delta diverters.

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DWR essentially does not dispute that the quantity and quality of water available for in-

Delta diverters and human uses will be degraded. However, their two-pronged argument that degrading water quality and diminishing water quantity does not constitute injury is that 1) they will continue to meet the terms of D-1641 and meeting D-1641 equates to non-injury to in-Delta legal users and human uses; and 2) any reduction in quantity or quality of water for in-Delta diverters and human uses is the result of stored water not flowing through the Delta, and in-Delta users have no right to stored water.

CWF "may result in substantial changes in Delta flows compared to the expected flows under existing Delta Configuration" without CWF. (SWRCB-104¹⁵, p. 3-83.) "The new water dual conveyance facilities proposed as part of the CA WaterFix (WaterFix or CWF) project would create substantial changes in the aquatic environment of the lower San Joaquin and Sacramento Rivers, the Delta, and downstream estuarine areas." (SCDA-1¹⁶, p. 3.) "The Panel believes that the PA [CWF] will create more than an incremental change to the Bay Delta System. It will effect major changes in hydrodynamics and associated transport throughout the system downstream of the North Delta Diversions" with uncertain consequences. (SCDA-1, p. 15.) "Changing the primary point of diversion of water export of the Delta to three inlet facilities in the northern Delta along the Sacramento River rather than from the southern Delta will result in major change in the circulation patterns and associated transport of water and constituents throughout the entire Delta system." (SCDA-1, p.16.)

After CWF the Delta will be a different Delta. D-1641 compliance points were prescribed based on pre-CWF flow patterns. It is not reasonable to assume, as DWR does, that after CWF existing D-1641 compliance points will capture Delta water quality. And meeting a standard at a D-1641 compliance point does not mean that water quality at non-compliance points has not been significantly degraded. Meeting D-1641 does not equate to non-injury before CWF's changes to flow patterns and certainly does not equate to non-injury after CWF. (SCDA-10¹⁷ p.2; SCDA-29¹⁸,

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WaterFix Aquatic Science Peer Review.

17 SCDA-10 is a true and correct copy of Letter from Victoria A. Whitney, Division Chief, California State W.

^{**}SCDA-10 is a true and correct copy of Letter from Victoria A. Whitney, Division Chief, California State Water Resources Control Board Division of Water Rights to Chester Bowling, Operations Manager USBR; Carl Torgersen

p.3; SCDA-36, p.6.)

DWR's "reservoir theory" of non-injury will be fully tested on cross-examination of the water rights panel, which is yet to occur, and on testimony of rebuttal witnesses after cross-examination is completed. However, DWR is doing more than moving their water in a different way. They are making major changes in the hydrodynamics of the entire Delta system in a way that degrades the quality of water supply from the Delta for in-Delta users, in contravention of Water Code § 85001(c). Detailed consideration of appropriate Delta flow criteria are scheduled for part 2 of the hearings. However, appropriate Delta flow criteria are not limited to fish and wildlife purposes. Protecting the beneficial use of in-Delta users is also a part of appropriate Delta flow criteria. Water Code section 85086(b) provides that:

It is the intent of the legislature to establish an accelerated process to determine instream flow needs of the Delta for purposes of facilitating the planning decisions that are required to achieve the objectives of the Delta Plan.

The objectives of the Delta Plan are statutorily prescribed to include the provisions of Water Code sections 85021 and 85001(c). The instream flow needs of the Delta include the need to "enhance the quality of water supply from the Delta." (Water Code § 85001(c).)

The Board is one of a committee of agencies responsible for implementing the Delta Reform

Act. (Water Code § 85204) The Board should condition any approval of CWF on a reduction in reliance on the Delta as a source of exported water and enhancing the quality of water supply from the Delta for in-Delta users as well as exporters.

B. CWF WILL DEGRADE THE WATER QUALITY IN DISCOVERY BAY TO THE INJURY OF HUMAN USES.

Water quality in the Delta and in and around Discovery Bay will be degraded by CWF.

Under the current operating scenario, without CWF, high quality Sacramento River water must flow

Chief SWP Operations Control Office; and Gregory Gartrell, Assistant General Manager Contra Costa Water District (March 19, 2004).

**SCDA-29 is a true and correct copy of Letter from Victoria A. Whitney, Division Chief, California State Water Resources Control Board Division of Water Rights to Chester Bowling, Operations Manager, USBR and Carl A. Torgersen, Chief SWP Operations Control Office (July 28, 2004).

Bay.

through the Delta before reaching the export pumps. The concentration of nutrients in Sacramento River water in the vicinity of the proposed NDD is lower than the concentration of nutrients in the central and south Delta. When Sacramento River water flows through the Delta on the way to the export pumps it dilutes the nutrient load in the central and south Delta.

Agricultural return flow traveling in the San Joaquin River from Central Valley farms back into the Delta carries a very high nutrient load and combines with the higher nutrient load already present in the central and south Delta. The agricultural return flow from the Central Valley is also responsible for the salinity problem in the south Delta. It is the operation of the projects, carrying water to Central Valley farms and carrying polluted return flow back to the Delta, that is offset by being diluted with Sacramento River water traveling through the Delta on the way to the export pumps. (*See* testimony of Tom Burke and Erik Ringelberg SCDA-35 and SCDA-3233.)

If diversions are shifted to the proposed NDD, this dilution effect will be reduced or eliminated. This will result in a higher nutrient loads for waters in and around Discovery Bay. Higher nutrient loads lead to algal blooms which reduce dissolved oxygen and lead to eutrophication and hypoxia. Algal blooms include toxic blue-green algae, which is a severe threat to human health of the residents of Discovery, especially children who may enter the waters of Discovery Bay despite warnings to the contrary. (SCDA-22; SCDA-33) It is also a threat to pets. (SCDA-22, p.3). Livestock wade into and drink the water of Kellogg Creek so the algae is also a threat to the watering of livestock, which is injury to legal users of water. At a qualitative level of analysis, shifting diversions to the NDD would be expected to negatively impact water quality in and around Discovery Bay. DWR's reservoir theory does not account for the fact that they are responsible for a significant amount of the pollution that through-Delta conveyance serves somewhat to offset.

The health of the Discovery Bay community depends on many human uses of Delta waters, and impacting the water quality will injure these human uses. (*See* SCDA-22; SCDA-24; SCDA-25.)

CWF will also degrade water quality for farms (legal users) in the vicinity of Discovery

\mathbf{C} CWF WILL IMPAIR FLOOD CONTROL IN DISCOVERY BAY.

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In the winter of 2014, flooding occurred in Discovery Bay along Sand Point Road. This flooding was caused by an invasive species, the Asiatic Clam, infesting Discovery Bay's storm drains. The clams entered the storm drain system from the bays of Discovery Bay. Very cold water events kill Asiatic clams or reduce their populations. CWF will tend to reduce very cold water events in Discovery Bay, exacerbating the Asiatic clam problem. The effect of CWF on water temperatures in Discovery Bay will tend to maintain temperatures in a range hospitable to the Asiatic clam, making flooding events more likely. Higher nutrient levels caused by CWF will also encourage growth of Asiatic clam populations.

With expanding clam populations, it is likely that the clams will also colonize the siphon pipes that connect the bays of Discovery Bay with each other and serve as Discovery Bay's circulation system. This will increase hydraulic residence time with all the attendant water quality problems. Clogging the siphon pipes may also cause flooding in Discovery Bay.

D. THE LIKLIHOOD OF MORE SEVERE AND MORE FREQUENT DROUGHTS COMBINED WITH CWF'S LACK OF STORAGE AND OTHER PORTFOLIO ELEMENTS WILL CAUSE INJURY TO LEGAL USERS AND HUMAN USES IN THE DELTA.

DWR sought to portray severe water quality problems in the Delta during the most recent drought as an aberration and excluded periods when TUCPs suspended D-1641 from its calculations of water quality compliance rates.

However, more frequent and severe droughts are expected to be the norm going forward. (SWRCB-46, p. ES-7 [climate change will make drought "all the more severe;] SWRCB-46, p. 17 ["Summary of Anticipated Changes Affecting the Delta" include "[i]ncreased weather variability, including longer-term drought;"] SCDA-31¹⁹, p. ii ["Periodic droughts, projected to become more frequent and severe with climate change, present a significant planning challenge for California's water agencies;"] SCDA-31, p. 1 ["Droughts are a natural occurrence in California (Cal. Climate

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Action Team 2006; (California Department of Water Resources (DWR 2005), and climate change is predicted to increase their number and intensity (Hayhoe et al. 2004);"]). Even without climate change, droughts are a regular feature in California. (SWRCB-46, p. 66 ["The historical record shows that California has frequently experienced long multiyear droughts, as well as extremely wet years that coincide with substantial flooding and consequent risk to people and property (Hank et al. 2011)"].)

During the most recent drought DWR installed a drought barrier on False River so it could continue pumping without drawing saltwater into the pumps from the bay during periods of very low flow when water quality standards were not being met. Conditions that brought about this situation are likely to repeat themselves more often, more severely, and for more prolonged periods in the future. However, with the addition of the NDD, DWR will simply switch pumping to the NDD and allow salt water to intrude into the Delta with no concern. There is nothing in the CWF operating rules that will prevent pumping from NDD, with no pumping from south Delta points of diversion, during periods of severe drought and salinity intrusion deep into the Delta. Indeed, CWF operating rules are crafted with precisely this eventuality in mind.

More frequent droughts will occasion more frequent use of TUCPs and the CWF will severely degrade water quality to the injury of legal users and human uses within the Delta during these periods. The Board should condition any approval on CWF demonstrating that it will not result in more frequent or severe degraded water quality during drought periods assuming more frequent and more severe droughts in the future. Conditions should require that CWF reduce the impact of droughts on Delta water quality.

In order to avoid injury to legal users and human uses within the Delta and maintain new points of diversion upstream of the Delta with significant diversion capacity, CWF must be able to harvest much more water during wet and very wet periods so that it can avoid diverting water during dry periods and periods of low flow. It cannot accomplish this without including some element of storage, including groundwater storage. Additional storage is feasible, cost effective and proven, especially ground water storage. (See SCDA-40 and attachments; SCDA-41; SCDA-42; SCDA-43; SCDA-44; SCDA-45; SCDA-46.)

Conditions placed on CWF should include requirements to show reduced diversions during dry periods, which may be accomplished by CWF altering its operating rules to require replenishment of groundwater basins during wet periods. This strategy, so it is cost-effective and feasible. (SCDA-47.) The banked groundwater can then be withdrawn for beneficial use during dry periods in lieu of water that would otherwise be exported from the Delta. Over "21 million acre-feet of additional groundwater storage is available in Southern California groundwater basins... [t]his stored water could be used during times of drought or natural disaster when surface water supplies are not available." (SCDA-46, p.2.) It is cost-effective and feasible to avoid increased degradation of Delta water quality during droughts by employing this strategy.

E. THE INTRUSION OF SALT WATER INTO DISCOVERY BAY WILL HARM HUMAN USES.

Harm to human uses due to salinity increases in Discovery Bay and the Delta is summarized in the testimony of Janet McCleery and Frank Morgan. In addition many of the docks in Discovery Bay are constructed with metal frames. Metal frame docks are suitable for use in fresh water. However, salt water quickly corrodes metal docks. Many of the docks in Discovery Bay are used for commercial purposes. Salt water intrusions in Discovery Bay will cause millions of dollars of property damage to metal frame docks. I use my boat, which is kept at my metal frame dock, to visit clients in the Delta and to view Delta locations relevant to my law practice. My non-recreational human use will be injured by damage to my dock caused by CWF.

F. THE BURDEN IS ON CWF TO ESTABLISH NON-INJURY AND THE MODELING, WHICH CWF RELIES ON, DOES NOT ESTABLISH NON-INJURY

Through cross-examination, CWF's modeling has been shown to be un-useful for both absolute predictions and for comparison of scenarios. Our expert testimony further establishes that CWF modeling is not useful for comparison of scenarios. (SCDA-35.)

The modeling should be excluded from evidence and absent the modeling CWF has no evidence to establish that it does not injure human uses and legal users of water in the Delta.

Executed this 2nd day of September at Discovery Bay, California,

-	SCDA-57 SCDA-60 Errata
1	
2	Michael A. Brodsky
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4	As modified, Executed this 17th Day of October at Discovery Bay, California,
5	
6	s/Michael A. Brodsky
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8	Testimony and Footnotes stricken per Ruling Dated February 21, 2017, as shown in blue strike out text.
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Revised Testimony of Michael Brodsky

STATEMENT OF SERVICE

CALIFORNIA WATERFIX PETITION HEARING Department of Water Resources and U.S. Bureau of Reclamation (Petitioners)

I hereby certify that I have this day submitted to the State Water Resources Control Board and caused a true and correct copy of the following document(s):

PROTESTANT SAVE THE CALIFORNIA DELTA ALLIANCE, ET Al.'s WRITTEN TESTIMONY OF JANET McCLEERY REVISED AS PER THE SWRCB ORDER OF OCTOBER 7, 2016.

PROTESTANT SAVE THE CALIFORNIA DELTA ALLIANCE, ET Al.'s WRITTEN TESTIMONY OF MICHAEL BRODSKY REVISED AS PER THE SWRCB ORDER OF OCTOBER 7, 2016.

PROTESTANT SAVE THE CALIFORNIA DELTA ALLIANCE, ET Al.'s WRITTEN TESTIMONY OF FRANK MORGAN REVISED AS PER THE SWRCB ORDER OF OCTOBER 7, 2016.

PROTESTANT SAVE THE CALIFORNIA DELTA ALLIANCE, ET AL'S CASE IN CHIEF EXHIBIT INDEX REVISED

to be served **by Electronic Mail** (email) upon the parties listed in Table 1 of the **Current Service List** for the California WaterFix Petition Hearing, dated October 6, 2016, posted by the State Water Resources Control Board at

http://www.waterboards.ca.gov/waterrights/water issues/programs/bay delta/california waterfix/service list.shtml

I certify that the foregoing is true and correct and that this document was executed on October 17, 2016.

Signature:

Name: Michael A. Brodsky

Title: Attorney

Party/Affiliation:

Save the California Delta Alliance, et al.

Address:

Law Offices of Michael A. Brodsky 201 Esplanade, Upper Suite

Capitola, CA 95010