

1 Michael A. Brodsky  
2 Law Offices of Michael A. Brodsky  
3 201 Esplanade, Upper Suite  
4 Capitola, CA 95010  
5 Telephone: (831) 469-3514  
6 Facsimile: (831) 471-9705  
7 Email: michael@brodskylaw.net  
8 SBN 219073

9 Attorney for Protestants Save the California Delta Alliance, et al.

10 **BEFORE THE DELTA STEWARDSHIP COUNCIL**

11 **IN RE APPEAL NO. C20185-A2**  
12 **APPEAL OF CALIFORNIA**  
13 **DEPARTMENT OF WATER**  
14 **RESOURCES CERTIFICATION OF**  
15 **CONSISTENCY OF CALIFORNIA**  
16 **WATERFIX/BDCP ALTERNATIVE**  
17 **4A**

**APPELLANT SAVE THE CALIFORNIA**  
**DELTA ALLIANCE'S RESPONSE TO**  
**DEPARTMENT'S NOVEMBER 19**  
**SUPPLEMENT TO COMMENTS ON STAFF**  
**DETERMINATION FOR DECEMBER**  
**HEARINGS**

**Hearing Date: DEC. 20-21**

1 Appellant Save the California Delta Alliance ("Delta Alliance" or "SCDA") respectfully  
2 submits the following response to statements contained in the Department's November 19, 2018,  
3 Supplement to California Department of Water Resources Written Comments on Staff  
4 Determination Regarding Appeals of the Certification of Consistency for California WaterFix  
5 ("Department's November 19 Supplement to Comments"). This response is submitted in advance of  
6 the December 20–21 hearings and before the December 14 deadline for submission of comments.  
7 Delta Alliance will submit additional comments directed at any revised findings issued by the  
8 Council when those revised findings become available.

9 **I. The Department's November 19 Supplement to Comments.**

10 **A. The Department Fails To Show Reduced Delta Reliance, Even If An**  
11 **Alternative Means Of Compliance With WR P1 Were Allowed:**  
12 **pp. 5–9**

13 The Department continues to argue that it may demonstrate reduced reliance on the Delta by  
14 means alternative to those specified in the core compliance requirements of WR P1(c)(1)(A), (B) &  
15 (C). As the staff has already determined, the Department's arguments for substantial or alternative  
16 compliance, without meeting the letter of WR P1, are mis-statements of the plain intent of the  
17 regulation.

18 However, even if some form of substantial compliance were allowed, the Department has  
19 failed to put forth substantial evidence, in any form, to demonstrate substantial compliance with the  
20 reduced reliance on the Delta requirement.

21 DWR argues that:

22 DWR has produced substantial evidence derived from the UWMPs of the SWP  
23 contractor agencies that will receive the water supply reliability benefits of WaterFix  
24 have included in their 2015 UWMPs projects that will reduce reliance through  
25 improved regional self-reliance along with a quantitative demonstration of their  
26 reduced reliance.

27 Because UWMPs and AWMPs are developed to comply with the urban or  
28 agricultural water management planning acts, they do not include the specific  
29 quantification data described in WR P1(c)(1)-(3). However, the UWMPs and  
30 AWMPs do provide substantial evidence regarding how water suppliers are  
31 contributing to regional self-reliance and statewide reduced reliance.

(Department's November 19 Supplement to Comments, p.7: 19–26.)

1 The Department continues to use the term "reduced reliance" inconsistently. It conflates  
2 increased water use efficiency and improved regional self-reliance, which are forms of "statewide  
3 reduced reliance," with the required reduced reliance *on the Delta*. The Department also puts forth  
4 compliance with statewide water conservation laws as equivalent to reduced Delta reliance.

5 For its Agricultural Water Suppliers, the Department provides only a checklist of water  
6 conservation measures undertaken and statewide conservation laws complied with and argues that  
7 "Reduced Reliance for Agricultural Water Suppliers Can Be Demonstrated Through the Efficient  
8 Water Management Practices Included in Agricultural Water Management Plans." (Department  
9 Certification WR P1, p. 3-44–3-45; 3-47, x.5.000016.) Staff has already concluded that this  
10 approach cannot demonstrate compliance with WR P1. Delta Alliance below provides additional  
11 support for this staff conclusion by providing the administrative history of WR P1, which shows  
12 that this very approach was considered and rejected by the Council during development of WR P1.

13 For its urban water suppliers, the Department attempts a demonstration of reduced Delta  
14 reliance through Table WR P1-1 (Department Certification WR P1, p. 3-39–3-40, x.5.000016.)  
15 However, the methodology used to construct Table WR P1-1 considered SWP water deliveries for  
16 modeled "normal and average years," which are a modeled smoothing of all water year types and do  
17 not consider the particular circumstances of dry, below normal water years. (Department  
18 Certification WR P1, Attachment 1, Quantification of Consistency with WR P1, p. 3, n. 30.) In  
19 addition to the deficiencies already identified by staff in the Department's approach through Table  
20 WR P1-1, it appears that the smoothing of water deliveries through modeled average years does not  
21 consider dry year transfers from CVP Contractors and upstream users delivered through the Delta as  
22 Delta usage. These transfers appear to be an increasing source of supply in dry years for Met,  
23 increasing its reliance on the Delta as Colorado River supplies become unavailable.

24 The Department argues that it would be difficult for some downstream retail water suppliers  
25 to analyze how much Delta water they receive. However, there is no reason why SWP wholesale  
26 suppliers, including Met, would have any difficulty complying with WR P1(c)(1)(C). The Delta  
27 Plan Regulations define "water supplier," as used in WR P1, to include both wholesale and retail  
28 water suppliers. (23 CCR § 5001(hh).)

1 Met's 2015 UWMP includes a Summary of Compliance Table at pages xix–xviii.  
2 (Attachment 13 to Delta Alliance Opening Brief.) The lengthy table does not include Water Code  
3 section 85021 or WR P1. Met explains that its compliance table was derived from the Department's  
4 guidebook: "In 2010, DWR provided a guidebook to aid water suppliers in developing their urban  
5 water management plans. ... In March 2016 [three years after WR P1 was published in the  
6 California Code of Regulations] DWR issued the final 2015 UWMP Guidebook for Urban Water  
7 Suppliers. The 2015 Guidebook has been updated from the 2010 version to reflect new legislation  
8 and to group the Water Code requirements by topic." (Met 2015 UWMP, p. 1-5.)

9 Black's Law Dictionary entry for "substantial compliance" refers the reader to the entry for  
10 "substantial performance doctrine," which provides: "The rule that if a good-faith attempt to  
11 perform does not precisely meet the terms of an agreement or statutory requirements, the  
12 performance will still be considered complete if the essential purpose is accomplished ... ." (Black's  
13 Law Dictionary, Eight Ed. 2004.) The Department failed to include compliance with WR P1 or  
14 Water Code section 85021 in its 2015 Guidebook. The Department failed to follow through on its  
15 promise, made during Delta Plan development, that "DWR Plans to work with its contractors and  
16 other water suppliers to meet the policy [WR P1]." (June 20, 2012, Department Comments on Final  
17 Staff Draft Delta Plan, pp. 3–4, K7495–96, attached to Delta Alliance's Comments on Staff  
18 Determination)

19 The Department has not offered substantial evidence of a good faith effort to comply with  
20 WR P1, especially with regard to SWP wholesale urban water suppliers, who can and must include  
21 reduced Delta reliance in their UWMPs, and with regard to its wholesale Agricultural Water  
22 Suppliers, for whom it has provided no reduced Delta reliance data.

23 **1. The Department's Argument That Decreased Delta Reliance Can Be**  
24 **Shown By Increased Water Use Efficiency And Compliance With Water**  
25 **Conservation Laws Was Considered And Rejected During Development**  
**Of WR P1.**

26 In the development phase of the Delta Plan, the Council specifically rejected the approach  
27 now taken by the Department: that compliance with Water Code section 85021 and its  
28 implementing regulation, WR P1, may be shown by water supplier compliance with general water

1 conservation laws, including the Water Management Planning Act--without regard to specifically  
2 showing that conservation measures accrue to reduced Delta reliance.

3 Policy WR P1, as it was drafted in the Fifth Staff Draft Delta Plan, did not include a specific  
4 requirement for a showing of reduced Delta reliance. Rather, the Fifth Staff Draft version of WR P1  
5 required water suppliers to show that they were in compliance with statewide water conservation  
6 statutes, including Water Code sections 10608, 10610, and 10800. Pages K004329–4331 are  
7 attached containing the text of Fifth Staff Draft WR P1, dated August 2, 2011.<sup>1</sup>

8 On February 2, 2012, Delta Alliance provided comments on the Fifth Staff Draft, objecting  
9 in particular to Policy WR P1 because WR P1 did not provide a specific requirement for showing  
10 reduced Delta reliance. After quoting Water Code section 85021, Delta Alliance commented that:

11 Despite this special requirement for regions that import water from the Delta, the  
12 Delta Plan does nothing more than rehearse existing water conservation law and  
13 congratulate Californian's for their progress with respect to improved efficiency:  
14 "The Delta Plan does not establish targets for additional water conservation beyond  
15 existing state law and the 2020 deadline." Delta Plan at 7. ... The Council is not at  
16 liberty to ignore section 85021. The Legislature specifically commanded a reduction  
17 in use of Delta water by regions that depend on the Delta.

18 (D002779.) Delta Alliance went on to suggest that an additional requirement for reduced Delta  
19 reliance should be included in the next version of WR P1 "in both absolute terms and as a  
20 percentage of total water used" from the Delta. ( D002783.)

21 The next version of WR P1, in the Final Staff Draft, dated May 14, 2012, included the  
22 requirement that water suppliers not "have failed to reduce their reliance on the Delta" and provided  
23 that "reducing reliance on the Delta and adequately contributing to improved regional self-reliance  
24 means a significant reduction in net water use, or in the percentage of water used, from the Delta  
25 watershed ... ." (K006094.)

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26 <sup>1</sup> All Attachments are bookmarked by title. Delta Alliance requests official notice of the attached  
27 excerpts of the Fifth Staff Draft Delta Plan, the attached excerpts from Delta Alliance's comments  
28 on the Fifth Staff Draft Delta Plan, the attached excerpt from the Final Staff Draft Delta Plan, and  
attached excerpt from the Final Draft Delta Plan. These documents are among the official records of  
the Council, as well as the court in JCCP 4785. They provide the administrative history of the  
development of the Delta Plan, are beyond dispute as to their authenticity, and are appropriate for  
official notice.

1 Subsequent drafts of WR P1 refined the regulation until its final form, in which the reduced  
2 Delta reliance element remains a central feature, and may be shown by a reduction in "the amount  
3 of water used, or in the percentage of water used, from the Delta watershed." (23 CCR  
4 5003(c)(1)(C). The Final Draft Delta Plan version of WR P1 is attached here as page K007907.

5 The Department attempts to show substantial compliance with WR P1 by showing an  
6 overall compliance with water conservation laws, increased regional self-reliance, and an increase  
7 in water use efficiency, without a specific showing of reduced Delta reliance. If allowed, this  
8 approach would repeal the important and deliberate inclusion of the reduced Delta reliance  
9 requirement in the regulation as demonstrated by the administrative history of the regulation.

10 Even if some means alternative to the letter of WR P1 were acceptable to demonstrate  
11 reduced Delta reliance, a showing of general water conservation and efficiency could not suffice.  
12 This is all that the Department has put forth for all of its agricultural water suppliers and therefore  
13 its effort must fail. Postulating that general water use efficiency translates to reduced Delta reliance  
14 also appears to play a significant role in the Department's calculations for its urban water suppliers,  
15 and must fail in that regard as well.

16 **2. The Department Has Apparently Not Included Increased Reliance On**  
17 **The Delta By Met Through Dry Year Water Transfers In Its**  
18 **Calculations.**

19 The Department explains that the analysis in Table WR P1-1 " identifies the forecasted  
20 supplies from the SWP and other sources in normal or average years, commencing in 2015 and  
21 continuing through 2040 in five-year increments as reported in the UWMPs." (Department  
22 Certification WR P1, Attachment 1, Quantification of Consistency with WR P1, p. 2.)

23 A footnote on the following page explains the meaning of "normal or average years" as  
24 used: "Generally the normal or average-year results shown in an UWMP reflect the average of all  
25 modeled hydrologic outcomes. Actual conditions in any given year are highly influenced by the  
26 specific hydrologic conditions in that year, as well as additional factors such as the implementation  
27 of statewide conservation regulations." (Department Certification WR P1, Attachment 1,  
28 Quantification of Consistency with WR P1, p. 3, n. 30.)

1 This methodology appears not to account for increased deliveries of Delta water obtained by  
2 Met through transfers from upstream users in dry years to offset loss of Colorado River supplies.

3 "In dry, below-normal conditions, Metropolitan has increased the supplies received from the  
4 California Aqueduct by developing flexible Central Valley/SWP storage and transfer programs."  
5 (Metropolitan 2015 UWMP, p. ES-4, Attachment 13 to Delta Alliance Opening Brief.) Met's  
6 UWMP provides an example of a transfer through the Delta in a dry year to make up for Colorado  
7 River shortfalls:

8 In 2003, Metropolitan secured options to purchase approximately 145 TAF of water  
9 from willing sellers in the Sacramento Valley during the irrigation season. These  
10 options protected against potential shortages of up to 650 TAF within Metropolitan's  
11 service area that might have arisen from a decrease in Colorado River supply or as a  
12 result of drier-than-expected hydrologic conditions. Using these options,  
13 Metropolitan purchased approximately 125 TAF of water for delivery to the  
14 California Aqueduct.

15 (Metropolitan 2015 UWMP, p. 3-27.) Pages 3-27–3-28 of Met's UWMP provide further details of  
16 transfers of Delta water that may not be captured in the Department's reduced reliance calculations  
17 in Table WR P1-1, and which seem likely to increase going forward. A reduced Delta reliance  
18 computation within Met's UWMP, upon remand, should address this issue and the issue provides  
19 further support for the staff determination that reduce Delta reliance must be addressed expressly in  
20 the UWMPs.

21 **B. The Department Continues To Ignore The Fact That Its Change To The E/I  
22 Ratio Eliminates A Constraint On Exports; ER P1, pp. 9–10.**

23 The Department assumes that the only function of the E/I ratio is with regard to south Delta  
24 entrainment. In fact, the E/I ratio restrains exports. During 2011 to 2016, the E/I ratio was the  
25 controlling parameter restraining exports 2% of the time. During 2013, the E/I ratio controlled  
26 maximum export amounts 7 % of the time. (Bay Delta Science Conference: Checking assertions  
27 with data: Untangling factors that constrain water exports from the San Francisco Bay estuary,  
28 November 7, 2018, available at <https://mavensnotebook.com/2018/11/07/bay-delta-science->

1 conference-checking-assertions-with-data-untangling-factors-that-constrain-water-exports-from-  
2 the-san-francisco-bay-estuary/.) (PDF page 7 on Attachment hereto)<sup>2</sup>

3 The Department fails to explain how excluding the NDD from the Export term of the E/I  
4 ratio does not allow for increased exports. The Department fails to explain why moving the point  
5 for measuring inflow would offset the change brought by excluding the NDD from the export term.  
6 (See Department's November 19 Supplement to Comments, p. 9: 10–12.) Currently, all SWP/CVP  
7 exports "count" in the export term. If the NDD are diverting at capacity (9,000 cfs) and the river  
8 flow is 16,000 cfs above the intakes and 7,000 cfs below the intakes (after diversion) that still  
9 counts as 0 exports regardless of where inflow is measured. Changing the location of the inflow  
10 measurement to below the NDD, still results in a 0 for the export term. Currently this example  
11 would be an E/I ratio of 53%, which would exceed the 35% D-1641 cap. Under DWR's new rules  
12 the E/I would be 0, allowing the diversion to take place.

13 This is a change that does not comply with ER P1.

14 **C. Unacceptable Impacts Are Due To Siting Decisions Not In Compliance With DP**  
15 **P2 And The Department's Finding Of Infeasibility for Alternative Siting**  
16 **Locations Under CEQA Is Inadequate To Establish Infeasibility Under The**  
**Delta Reform Act And Delta Plan.**

17 The Department argues that "DWR has demonstrated that it considered 18 project  
18 alternatives and the No Action Alternative, and determined, based on substantial evidence, that the  
19 other alternatives are infeasible." (Department's November 19 Supplement, p. 10: 19–20.) The  
20 Department relies on the WaterFix Findings of Fact and Statement of Overriding Considerations to  
21

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22  
23 <sup>2</sup> Delta Alliance requests official notice of this report on a scientific presentation. Official  
24 notice is appropriate for materials that provide background and context, even though they were not  
25 before the agency at the time of its decision. "Extra record evidence is admissible to provide  
26 background information." *Porterville Citizens for Responsible Hillside Development v. City of*  
27 *Porterville*, 157 Cal. App. 4th 885, 896 (2007) (citing *Western States*, 9 Cal. 4th at 579). Extra-  
28 record evidence "may be admissible to provide background information regarding the quasi-  
legislative agency decision, to establish whether the agency fulfilled its duties in making the  
decision, or to assist the trial court in understanding the agency's decision." *Outfitter Properties,*  
*LLC v. Wildlife Conservation Bd.*, 207 Cal. App. 4th 237, 251 (2012) (citing *Western States*, 9 Cal.  
4th at 578–579).

1 support its finding of infeasibility for all alternatives except 4A. In explaining why it did not select  
2 alternative intake locations with less impact on the legacy communities of Clarksburg and Hood,  
3 "DWR explained why it approved Alternative 4A (California WaterFix) and determined that other  
4 alternatives are infeasible in its California WaterFix CEQA Findings of Fact and Statement of  
5 Overriding Considerations." (Department's Written Statement, p. 79.) However, the Department's  
6 finding of infeasibility in the Findings of Fact and Statement of Overriding Considerations under  
7 CEQA does not establish infeasibility for purposes of the Delta Reform Act or Delta Plan.

8         The Council's regulations define "Feasible" as follows: "'Feasible' means capable of being  
9 accomplished in a successful manner within a reasonable period of time, taking into account  
10 economic, environmental, legal, social, and technological factors." (23 CCR § 5001(p).) However,  
11 the Department rejected alternatives as infeasible that meet the Council's definition of feasible  
12 because "a decisionmaker may conclude that an alternative being 'undesirable' from a policy  
13 standpoint is infeasible within the meaning of CEQA." (WaterFix CEQA Findings of Fact and  
14 Statement of Overriding Considerations, p. 59.) "Under these principles, a decision maker may  
15 reject an alternative as infeasible even if the alternative would avoid or substantially lessen one or  
16 more of the unavoidable significant environmental effects of a proposed project as mitigated."  
17 (WaterFix Findings of Fact and Statement of Overriding Considerations, p. 59.) These statements  
18 derive from the CEQA Guidelines:

19             (a) CEQA requires the decision-making agency to balance, as applicable, the  
20 economic, legal, social, technological, or other benefits, including region-wide or  
21 statewide environmental benefits, of a proposed project against its unavoidable  
22 environmental risks when determining whether to approve the project. If the specific  
23 economic, legal, social, technological, or other benefits, including region-wide or  
24 statewide environmental benefits, of a proposal project outweigh the unavoidable  
25 adverse environmental effects, the adverse environmental effects may be considered  
26 "acceptable."

27 (14 CCR § 15093(a).)

28             It is on the basis of the analysis in section 15093 that an agency may, and the Department  
did, adopt a statement of overriding considerations allowing it to proceed with a project where  
significant adverse environmental impacts could be avoided through selection of a different

1 alternative but that the agency considers that less damaging alternative "undesirable" from a policy  
2 perspective.

3         The Department ignores the fact that analysis and requirements under CEQA for feasibility  
4 are not the same as analysis and requirements under the Delta Plan and Delta Reform Act for  
5 feasibility. The Delta Reform Act and Delta Plan do not allow for conflict with a Delta Plan Policy  
6 through a statement of overriding considerations founded in policy preferences outside of the  
7 coequal goals. Under CEQA, policy preferences outside the coequal goals can include undefined  
8 "other" benefits and can include cost--even where an alternative is economically feasible within the  
9 meaning of 23 CCR § 5001(p). Under the Delta Plan, the covered action must be consistent with  
10 each applicable Delta Plan Policy, or consistent with the Delta Plan on the whole if consistency with  
11 a particular Policy is infeasible (infeasible as defined in the Delta Plan Regulations, not CEQA). (23  
12 CCR § 5002(b)(1).) CEQA does not require this Delta Reform Act / Delta Plan compliance or  
13 analysis. The Department's proffer of infeasibility as found in the Statement of Overriding  
14 Considerations does not satisfy Policy DP P2 or a 23 CCR § 5002(b)(1) finding of infeasibility.

15         The Council's original question to the Department, "If the Department's certification of  
16 consistency with DP P2 relies on substantial evidence in the record besides the Final EIR/EIS,  
17 please identify, with specificity, that substantial evidence" (Department's Written Statement,  
18 quoting Council question, p.75) remains largely unanswered. As the Council has noted, the  
19 Department has acknowledged that "the Final EIR/EIS does not include a specific impact analysis  
20 addressing the project's consistency with DP P2." (Department's Written Statement, quoting Council  
21 question, p.75.) Because WaterFix poses significant conflicts with Policy DP P2, the Department,  
22 on remand, must either remedy those conflicts through project changes or perform an analysis  
23 specific to Policy DP P2 and the Delta Plan-- not relying on the CEQA finding of infeasibility to  
24 eliminate alternative siting locations for the intakes and alternative tunnel routes.

25         Delta Alliance has provided evidence that an eastern tunnel alignment would avoid most  
26 impacts on Delta Recreation. The CEQA Findings of Fact reject eastern alignment alternatives 1B,  
27 2B, and 6B because they consist of unlined surface canals instead of tunnels. "These alternatives  
28 [eastern alignment alternatives 1B, 2B, and 6B] would create more environmental impacts by

1 utilizing canal ways, while the Project will avoid some of these impacts by using underground  
2 tunnels." (CEQA Finding of Facts and Statement of Overriding Considerations, p. 61.) The eastern  
3 alignment right of way is feasible. However, the Department did not analyze an eastern alignment  
4 tunnel(s). (See CEQA Findings of Fact, pp. 59–78.) The longer eastern route would mean more cost  
5 for tunneling than the through-Delta tunnel route of Alternative 4A. The Department may find that  
6 higher cost infeasible under CEQA. However, Delta Alliance believes that, considering all costs,  
7 including negative externalities, and considering DP P2, an eastern alignment tunnel(s) is superior  
8 to a through-Delta tunnel(s) and a feasible alternative that would avoid many of the conflicts with  
9 Policy DP P2.

10 For example, FEIR Table ES-18 shows only one barge landing for eastern alternative  
11 alignments 1B, 2B, and 6B and nil barge trips whereas 7 barge landings and 11,800 barge trips are  
12 shown for Alternative 4A.<sup>3</sup> FEIR Mapbook Figure M15-2, sheets 1–7, show muck dumps, spoil and  
13 borrow areas, fuel stations, batch plants, and other construction features located almost entirely  
14 outside of the Delta and away from Delta recreation areas. (Compare Mapbook Figure M15-2,  
15 sheets 1-7 [eastern alignment] with Mapbook Figure M15-4, sheets 1–8 [alternative 4A alignment  
16 with muck dumps, *inter alia*, at Meadows Slough anchorage and Potato Slough Bedrooms  
17 Anchorage]; see also SCDA-305 [map of construction impacts avoided by eastern alignment].)

18 Delta Alliance has provided evidence that siting intakes next to the legacy communities of  
19 Clarksburg and Hood was a poor siting decision not in compliance with DP P2. FEIR Appendix 3F  
20 Intake Location Analysis, shows that intake sites were limited to seven potential locations for  
21 analysis in the FEIR. (FEIR, p. 3F-15.) Appendix 3F references impacts on adjacent land uses, but  
22 does not appear to give any serious consideration to the impacts of siting intake 3 next to Hood. For  
23 example, the geotechnical trenching that rips through homes and businesses in Hood is not  
24 mentioned in Appendix 3F. (See SCDA-70 [attached to x.4.000015] and Mapbook M15-4, sheet 1  
25 of 8 for location of Hood geotechnical trench.) Nor are pile driving noise impacts on Hood and  
26 Clarksburg mentioned in Appendix 3F. The location of the large construction yard touching Hood

27  
28  

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<sup>3</sup> The 11,800 figure is in error. There are 18,800 one-way barge trips. Please see section E(2) below.

1 also appears to be an incident of siting intake 3 just north of Hood and intake 5 just south of Hood.  
2 (*See* SCDA-70.) An appropriate analysis conducted pursuant to Delta Plan Policy DP P2 and 23  
3 CCR § 5002(b)(1), rather than a CEQA 14 CCR § 15093(a) infeasibility analysis, should be  
4 conducted on remand to determine intake locations consistent with Policy DP P2 and the Delta Plan  
5 as a whole.

6 **D. The Proffered Boilerplate Noise Mitigations Have No Application To Pile**  
7 **Driving Noise.**

8 The Department again repeats empty noise mitigations AMM-31, NOI-1b, NOI-1a, and  
9 NOI-2, which have no possible use in mitigating noise from impact pile-driving. (Department  
10 November 19 Supplement, p. 11.) As acoustical engineer Charles Salter noted:

11 No Evidence is Provided to Support the Efficacy of Mitigation Measure NOI-  
12 1a. Mitigation measure NOI-1a is offered in the EIR to address predicted significant  
13 construction noise impacts. However, the EIR only lists certain "best practices."  
14 However, the FEIR/S provides no information to demonstrate that the proposed  
measures would in fact reduce long-term construction noise to a less-than-significant  
level.

15 In particular, the FEIR/S should describe how mitigating noise barriers can  
16 feasibly be constructed in situations where the noise sources are rather tall (e.g. pile  
17 drivers) or located on the water front and the receptors are located along the opposite  
18 side of the river. An appropriate noise impact analysis would delve into this issue,  
19 which is reasonable to study, rather than only relying on future noise complaints to  
20 trigger [mitigation measure NOI-1b is a complaint tracking program] the  
implementation of appropriate noise mitigation measures. If complaints occur,  
construction noise is found to be excessive, and mitigation measures are found to be  
infeasible, the noise sensitive community including residences and recreational  
facilities, would have very few options available to redress the objectionable noise.

21  
22 (July 12, 2017, Charles Salter and Associates FEIR comment letter, p.4 [attached to x.4.000015].)

23 The Department quotes AMM-31 to "Reduce impacts by limiting pile driving to daytime  
24 hours (no evening or nighttime pile driving)." (Department November 19 Supplement, p. 11: 6.)  
25 However daytime, for WaterFix construction noise, is defined as "7:00 a.m. to 10:00 p.m." (FEIR,  
26 p.23-4:12.) Loud pile driving up until 10:00 p.m. will be an extreme hardship on residents of  
27 Clarksburg and Hood, regardless of whether the Department refers to 10:00 p.m. as "daytime."  
28

1 Finally, mitigation NOI-2 deals with vibration and not noise. (Department November 19  
2 Supplement, p.11:24–27.)

3 There simply is no feasible way to mitigate 6,210,000 impact strikes at 115 dBA per strike,  
4 where the pile driving is over water and conducted by tall pile driving rigs mounted on barges.<sup>4</sup> The  
5 only feasible option for intake support foundations is to use non-impact methods, such as drilled  
6 piers or CFA piles instead of impact pile driving. (*See* SCDA-125, testimony of structural engineer  
7 Dr. Rune Storesund with attached bid and technical information for non-impact piles from Malcolm  
8 Drilling, x.4.000025.) The Department has steadfastly refused to agree to non-impact methods  
9 despite all of Delta Alliance's extensive efforts to provide a workable solution.

10 The Department's promises to commit to further exploring non-impact methods have no  
11 relevance to the project currently in front of the Council.

12  
13 **E. Number of Project Piles and Project Barge Trips.**

14 **1. There Are A Total of 24,443 piles with 11,096,175 pile strikes.**

15 The Department purports to correct information presented by the undersigned at the  
16 November 19, 2018, workshop. (Department November 19 Supplement, pp. 12–13.) The  
17 Department states that instead of 23,900 project wide piles as stated by Delta Alliance at the  
18 workshop there are only 10,590 piles. Delta Alliance presented its slide number 5 at the October 25  
19 Council hearing. Delta Alliance slide number 5 states that "Construction of WaterFix includes  
20 driving 23,900 piles at twelve construction areas spread across the Delta." The Department states  
21 that "As stated in Table 1.4 of the California WaterFix Incidental Take Permit, 10,590 piles not  
22 23,900 piles would be placed." (Department November 19 Supplement, p. 12.) However Table 1.4  
23 counts only piles at the intake foundations--which are 10,590 in number. There are an additional  
24 13,853 piles at nine locations other than the intakes (7 barge docks: 749 piles; Clifton Court  
25

26 \_\_\_\_\_  
27 <sup>4</sup> There are 10,590 piles requiring 6,210,00 impact strikes for the foundation and cofferdam  
28 structures at the intakes alone. (SCDA-82, Table 3.E-2 Pile Driving Details, which is an excerpt  
from the August 2, 2016, WaterFix Biological Assessment, Exhibit SWRCB-104.) There are 24,443  
total project piles with a total of 11,096,175 project total pile strikes. (*Id.*)

1 Forebay: 12,454 piles; HOR Gate: 650 piles). The intakes have 10,590 piles with 6,210,000 pile  
2 strikes. The other nine locations have 13,853 piles with 4,886,175 pike strikes. Project totals are  
3 24,443 piles with 11,096,175 pile strikes. The California WaterFix August 2, 2016, Biological  
4 Assessment table 3.E-2 (SCDA-82) which contains complete pile information for all locations is  
5 attached hereto for the convenience of the reader. The full Biological Assessment is available at  
6 Exhibit SWRCB-104. Delta Alliance previously slightly understated the total number of piles and  
7 pile strikes and here corrects that oversight.

8 **2. There Are 18, 800 One-Way Barge Trips.**

9 The Department states "As stated in the Testimony of John Bednarski, the amount of barge  
10 trips is 9,400 not 18,800." (Department November 19 Supplement, p. 12.) At the November 15,  
11 2018, Council workshop, Delta Alliance presented its slide number 14, which shows a picture  
12 typical of WaterFix Barge and Tugboat rigs with the following text: "18,800 *one-way* barge trips on  
13 Delta Sloughs over 5.5 to 6 years (NMFS BiOp, p.157.)" (emphasis added.) There are in fact 18,800  
14 one-way barge trips (as correctly stated by Delta Alliance) which is equivalent to 9,400 roundtrips.

15 The NMFS June 16, 2017, California WaterFix Biological Opinion analyzes barge trips at  
16 section 2.5.1.1.1.2. All parties have relied on this assessment of barge traffic. Section 2.5.1.1.1.2 is  
17 attached hereto for the convenience of the reader. The full NMFS BiOp is found at exhibit SWRCB-  
18 106. At page 157, the BiOp states "Exposure to anthropogenically produced sounds will occur  
19 during each passage of a tugboat and barge and has been estimated to be approximately 18,800  
20 cumulative individual trips over the course of 5.5 to 6 years of construction (see table 2-16)." A  
21 perusal of Tables 2-33, 2-34 and the text at pages 151–155, although a bit laborious, confirms that  
22 there are 9400 round trips or 18,800 one-way trips.

23  
24 Respectfully submitted,

25   
26 Michael A. Brodsky

27 Attorney for Appellant Save the California Delta Alliance

28 Dated: December 5, 2018

1 planning and implementing plans and projects that will improve California’s water supply reliability and  
2 reduce reliance on the Delta is a significant impediment to achieving the coequal goals.

### 3 **Policies**

4 WR P1 A covered action to export water from, transfer water through, or use water in the Delta is  
5 inconsistent with the Delta Plan if the covered action negatively impacts one or more of the  
6 coequal goals and one or more of the water suppliers<sup>21</sup> that receive water from the Delta  
7 significantly causes the need for the covered action by failing to comply with one or more of  
8 the following:

- 9 ♦ Compliance with State law
  - 10 • Urban water suppliers<sup>22</sup>
    - 11 – Adopt and implement an Urban Water Management Plan and all required elements
    - 12 and measures, meeting the standards and timelines established in Water Code
    - 13 section 10610 et seq.
    - 14 – Adopt and implement a plan to achieve 20 percent reduction in statewide urban per
    - 15 capita water use by December 31, 2020, meeting the standards and timelines
    - 16 established in Water Code section 10608 et seq.
  - 17 ♦ Agricultural water suppliers<sup>23</sup>
    - 18 • Adopt and implement Agricultural Efficient Water Management Practices including
    - 19 measurement of the volume of water delivered to customers, adoption of a pricing
    - 20 structure based in part on the quantity delivered, and implementation of specific
    - 21 conservation measures that are locally cost effective and technically feasible, meeting
    - 22 the standards and timelines established in Water Code section 10608 et. seq.
    - 23 • Adopt and implement an Agricultural Water Management Plan and all required
    - 24 elements, meeting the standards and timelines established in Water Code
    - 25 section 10800 et seq.
  - 26 ♦ Water Supply Reliability Element
    - 27 • To promote accountability throughout the state in achieving the coequal goals, water
    - 28 suppliers shall, no later than December 31, 2015, expand an existing or add a new
    - 29 Water Reliability Element in their Urban Water Management Plan and/or Agricultural
    - 30 Water Management Plan. Water suppliers may also meet this requirement by including

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<sup>21</sup> Water suppliers, as used in this Delta Plan, refer to both “Urban water supplier” and “Agricultural water supplier” as defined in footnotes 20 and 21.

<sup>22</sup> “Urban water supplier” as used in this Delta Plan refers to both “urban retail water suppliers” and “urban wholesale water suppliers” under the Water Code. An “urban retail water supplier” means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annual at retail for municipal purposes (Water Code section 10608.12(p)). An “urban wholesale water supplier” means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of potable water annually at wholesale for municipal purposes (Water Code section 10608.12(r)).

<sup>23</sup> “Agricultural water supplier” as used in this Delta Plan refers to both “agricultural retail water suppliers” and “agricultural wholesale water suppliers” under the Water Code. An “agricultural water supplier” means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. An “agricultural water supplier” includes a supplier or contractor for water, regardless of the basis of right that distributes or sells water for ultimate resale to customers. “Agricultural water supplier” does not include DWR (Water Code section 10608.12(a)). Any agricultural water supplier that provides water to less than 25,000 irrigated acres is not required to comply with SBX7 7 requirements unless sufficient funding is provided to the supplier to implement these provisions (Water Code section 10853).

- 1 a Water Reliability Element in an approved Integrated Regional Water Management  
2 Plan or other water plan that provides equivalent information.
- 3 • The Water Reliability Element shall detail how water suppliers are sustaining and  
4 improving regional self-reliance and reducing reliance on the Delta through  
5 investments in local and regional programs and projects, and shall document actual or  
6 projected reduction in reliance on Delta exports. At a minimum, the Water Reliability  
7 Element shall include:
- 8 – **A plan for possible interruption of Delta water supply due to catastrophic**  
9 **events:** Identify how reliable water service will be provided or shortages managed  
10 for minimum periods of 6 months, 18 months, and 36 months in the event that  
11 diversions or exports from the Delta are interrupted during an average water year,  
12 dry water year, and following three dry water years.
- 13 – **Implementation of planned investments in water conservation, water**  
14 **efficiency, and water supply development:** Identify specific programs and  
15 projects that will be implemented over a 20-year planning period and how they are  
16 consistent with the coequal goals and will contribute to improved regional  
17 self-reliance and reduced reliance on the Delta, including, but not limited to, the  
18 following strategies<sup>24</sup>:
- 19     ▪ Water conservation  
20     ▪ Water use efficiency  
21     ▪ Local groundwater and surface storage  
22     ▪ Conjunctive use programs  
23     ▪ Water transfers  
24     ▪ Water recycling  
25     ▪ Treatment and use of currently non-potable groundwater  
26     ▪ Stormwater capture and recharge  
27     ▪ Saline water and brackish water desalination
- 28 • **Evaluation of regional water balance:** Provide an assessment of the long-term  
29 sustainability of the water supplies available to meet projected demands within the  
30 supplier's hydrologic region, as defined by California Water Plan 2009 Update, over  
31 the 20-year planning period.<sup>25</sup> If the region's demand exceeds available supplies,  
32 identify the steps being taken through one or more of the Integrated Regional Water  
33 Management Plans to bring the region into long-term balance. If the region's demands  
34 exceed available supplies and it does not have an Integrated Regional Water  
35 Management Plan or the Plan does not address the steps being taken to bring the region  
36 into balance, then describe how the supplier's programs and projects are helping to  
37 bring the region into long-term balance.
- 38 • **Conservation-oriented water rate structure:** Evaluate the degree to which the  
39 supplier's current rate structure sustainably encourages and supports water  
40 conservation.

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<sup>24</sup> The Department of Water Resources has identified 27 "resource management strategies" that water suppliers should consider as investments in water conservation, water efficiency, and water supply development. (DWR 2009)

<sup>25</sup> The purpose of a water balance is to provide an accounting of all water that enters and leaves a specific hydrologic region, how it is used, and how it is exchanged between regions. A water balance can be used to compare how water supplies and uses in a region can vary among wet, average, and dry hydrologic conditions and how each region's water balance compares with other regions and with the State's water balance. This is important to all water planning activities and provides a basis for evaluating unsustainable water management practices and making appropriate improvements (DWR 2009).

- 1           ♦ Conservation-oriented Rate Structure
- 2           • Water suppliers shall, by December 31, 2020, develop and implement a conservation-
- 3           oriented rate structure, which may include consideration of a water-budget-based rate
- 4           structure that sustainably encourages and supports more efficient water use without
- 5           causing a shortfall in system revenues.<sup>26</sup>

## 6 **Recommendations**

- 7 WR R1 The Department of Water Resources, in consultation with the Delta Stewardship Council, the  
8 State Water Resources Control Board, and others, should develop and approve, by  
9 December 31, 2012, guidelines for the preparation of a Water Reliability Element that satisfies  
10 the criteria contained in WR P1.
- 11 WR R2 The Department of Water Resources, in consultation with the Delta Stewardship Council, the  
12 State Water Resources Control Board, and others, should develop and include in the future  
13 California Water Plan updates the information needed to track the water supply reliability  
14 performance measures identified in the Delta Plan and assess improvements in regional  
15 self-reliance, reduced reliance on the Delta, and statewide water supply reliability.
- 16 WR R3 The Department of Water Resources, the State Water Resources Control Board, the Department  
17 of Public Health, and other agencies, in consultation with the Delta Stewardship Council,  
18 should revise State grant and loan ranking criteria by December 31, 2012, to provide a priority  
19 for water suppliers that include a Water Reliability Element in their adopted Urban Water  
20 Management Plans, Agricultural Water Management Plans, and/or Integrated Regional Water  
21 Management Plans that satisfies the requirements of WR P1. The Delta Stewardship Council  
22 will also work with these agencies to identify additional funding and other incentives to  
23 catalyze implementation of local and regional water conservation, water use efficiency,  
24 conjunctive management, and other projects that will improve regional self-reliance and reduce  
25 reliance on the Delta.
- 26 WR R4 All state agencies should take a leadership role in designing new and retrofitted state owned  
27 and leased facilities, including buildings and Caltrans facilities, to increase water efficiency,  
28 use recycled water, incorporate stormwater runoff capture and low impact development  
29 strategies, and reduce reliance on the Delta. The Delta Stewardship Council will work with  
30 these agencies to identify regulations and other policies that will support the improved water  
31 efficiencies and new water supply strategies, such as completion of uniform recycling criteria  
32 for potable reuse for groundwater recharge, consistent with SB 918 (Water Code section 13521  
33 et seq.).
- 34 WR R5 The State Water Resources Control Board and/or the Department of Water Resources should  
35 require that proponents requesting a new point of diversion, place of use, or purpose of use that  
36 results in new or increased use of water from the Delta watershed should demonstrate that the  
37 project proponents have evaluated and implemented all other feasible water supply alternatives.

## 38 **Update Delta Flow Requirements**

39 California law grants the SWRCB considerable authority in the areas of water rights, water quality  
40 protection, and the setting of water flow criteria. The SWRCB also has the authority to enforce the Public

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<sup>26</sup> A sustainable conservation-oriented rate structure has the following characteristics: encourages more efficient water use without causing a shortfall in system revenue; provides for the identification of waste, rewards efficient use, and penalizes excessive use; produces revenues from penalty rates that are used to fund conservation programs; is supported by a water bill that clearly communicates the cost of wasted water to the responsible person; and is supported by a person or staff who can respond to customers' calls for help in reducing usage (CUWCC 1997).

# Delta Alliance Comments on 5th Staff Draft

## OR111 STDCA

201 ESPLANADE,  
UPPER SUITE  
CANTONIA, CA 95010

Law Offices Of  
Michael A. Brodsky

PHONE 531-469-3574  
FAX 831-471-9795  
MICHAEL@BRODSKYLAW.NET

**Response to comment OR111-1**

Comment noted.

**Response to comment OR111-2**

Comment noted.

February 2, 2012

VIA EMAIL

Delta Stewardship Council  
980 Ninth Street  
Suite 1500  
Sacramento, CA 95814

Re: Comments of Fifth Staff Draft Delta Plan and PEIR

Dear Chairman Isenberg and members of the Council:

These comments are submitted on behalf of the Save the California Delta Alliance ("STCDA"). STCDA is headquartered in Discovery Bay, California. STCDA represents the interests of individuals who live and work in the Delta, including those with waterfront homes located in Discovery Bay, Delta related businesses, and many who engage in all kinds of water-related recreation in the Delta. STCDA regularly turns out several hundred enthusiastic members at its town hall style meetings held in Discovery Bay.

Thank you for the opportunity to submit comments on the above-captioned matters. We are in awe of the enormity of the task facing the Council and understand that much hard work has been put into conducting public outreach and drafting. We also understand the selfless commitment to public service by members of the Council. Although much work has been done, we believe there is a long way to go in making the Delta Plan and PEIR serve the function that we are sure members of the Council would like them to serve: making real, positive changes, in management of the Delta.

Our comments are frank and direct. We hope the Council will take them in the spirit in which they are offered, to point out major flaws that we believe might not otherwise come to the Council's attention and to allow the Council to consider major revisions in the documents to address these flaws.

We thank you in advance for considering our views.

**I.  
ORGANIZATION OF COMMENTS**

We provide comments that address both the Fifth Staff Draft Delta Plan ("Delta Plan" or "Plan") itself and the Draft Delta Plan Program Environmental Impact Report ("Draft PEIR" or "PEIR"). Although there is some necessary overlap between our comments on the Plan and our comments

Delta Plan Comments 2/2/2012 page 1 of 20

OR111-1

OR111-2

D002772

on the PEIR, different legal standards apply to the Delta Stewardship Council's ("Council") authority and responsibilities with respect to the two documents. The scope and focus of our comments, while treating similar subject matter, are therefore different when addressing the Plan and PEIR respectively.

OR111-2

Our comments on the Delta Plan are organized as follows:

- 1) **Plan Inconsistencies.** Comments addressing areas where we believe the Plan is inconsistent with the Legislature's statutory mandate to the Council. The Council does not have authority to enlarge or impair the scope or contents of the Delta Plan but may only prepare the Plan in accordance with the Sacramento-San Joaquin Delta Reform Act of 2009, Stats. 2009-2010, 7th Ex. Sess., c.5 (S.B.1.), codified at Div. 35 Cal. Water Code & Div. 19.5 Cal. Pub. Res. Code ("Delta Reform Act" or "Act"). Comments pointing out Plan Inconsistencies address areas where we believe the Plan *must* be revised in order to be legally sufficient. They also address areas where we believe the Council does not exercise any discretionary authority and its pronouncement are not due any deference. *See, e.g., San Francisco Fire Fighters Local 798 v. City and County of San Francisco*, 38 Cal.4th 653, 668 (2006) (holding that "[a]dministrative regulations that alter or amend the statute or enlarge or impair its scope are void and courts not only may, but it is their obligation to strike down such regulations"); *Samantha C. v. State Dept. of Developmental Services*, 185 Cal.App.4th 1462, 1482 (2nd Dist., 2010) (holding that "[i]n deciding whether the regulation conflicts with its legislative mandate, the court does not defer to the agency's interpretation of the law under which the regulation issued, but rather exercises its own independent judgment") (internal quotation marks and citation omitted); *Agricultural Labor Relations Bd. v. Superior Court*, 48 Cal.App.4th 1489, 1510 (5th Dist. 1996) (holding that "[a]dministrative regulations that violate acts of the Legislature are void and no protestations that they are merely an exercise of administrative discretion can sanctify them. They must conform to the legislative will if we are to preserve an orderly system of government") (internal quotation marks and citation omitted).
- 2) **Unreasonable Policy Choices.** Comments addressing areas where we believe that, although the Council may have broad discretion to make policy choices, it has exceeded the bounds of its discretionary authority because the choice made is not reasonably designed to aid a statutory objective of the Delta Reform Act. Comments pointing out Unreasonable Policy Choices address areas where we believe the Plan *must* be revised in order to be legally sufficient. Although courts will grant substantial deference to the Council with respect to its policy choices, that deference is not unlimited and choices that are arbitrary or capricious, or which are not reasonably supported by the evidence upon which the Council has relied cannot be sustained. *See Samantha C. v. State Dept. of Developmental Services*, 185 Cal. App. 4th 1462, 1483 (2nd Dist., 2010) (noting that "the court will defer to the agency's expertise and will not superimpose its own policy judgment upon the agency in the absence of an arbitrary and capricious decision" but that a court will strike down regulations that are not "reasonably designed to aid a statutory objective") (internal quotation marks and citation omitted); *Credit Ins. Gen. Agents Assn. v. Payne*, 16 Cal.3d 651, 657 (1976) (holding that the court will "ascertain whether the agency reasonably interpreted its power in deciding that the regulation was necessary to accomplish the purpose of the statute"); *Id.* (holding that if "the evidence relied on . . .

OR111-3

## Response to comment OR111-3

This is a comment on the project, not on the EIR.

does not reasonably support the regulation in light of the purpose of the statute” the regulation must fall).

Some items are analyzed as both Plan Inconsistencies and Unreasonable Policy Choices.

OR111-3

- 3) **Suggestions For Improvement.** Comments addressing areas where we believe the Plan is legally sufficient but the Council may wish to consider suggestions for improvement of alternative means of accomplishing its goals.

## II. COMMENTS ON THE DELTA PLAN

### A. Delta Plan Chapter 3 Governance: Implementation of the Delta Plan.

#### PLAN INCONSISTENCIES:

##### I. **Delta Plan Governance Provisions Are Too Vague and Ill-Defined To Assure Implementation Of The Goals And Sub-Goals Of The Delta Reform Act.**

Water Code Section 85210(i) provides that the Council has a responsibility to “adopt regulations or guidelines as needed to carry out the powers and duties identified in this division [Div. 35].” The Council has established that its proposed policies (including Policy G PI, which is the only policy proposed to implement Council governance) will have the force of law and are subject to the normal administrative rulemaking process, including review by the California Office of Administrative law. The Council is, therefore, proposing regulations pursuant to its authority under Cal. Water Code § 85210(i). California Government Code Section 11342.600 provides in pertinent part that a regulation is designed to “implement, interpret, or make specific the law enforced or administered.”

The law that the Council is statutorily charged with implementing and administering is the Delta Reform Act and specifically achieving the Legislature’s coequal goals for the Delta, which are “providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem.” Cal. Pub. Res. Code § 29702. The Legislature further defined the Council’s duties by making explicit eight objectives that are inherent in achieving the coequal goals:

OR111-4

- (a) Manage the Delta’s water and environmental resources and the water resources of the state over the long term.
- (b) Protect and enhance the unique cultural, recreational, and agricultural values of the California Delta as an evolving place.
- (c) Restore the Delta ecosystem, including its fisheries and wildlife, as the heart of a healthy estuary and wetland ecosystem.
- (d) Promote statewide water conservation, water use efficiency, and sustainable water use.

## **Response to comment OR111-4**

This is a comment on the project, not on the EIR.

## Response to comment OR111-5

This is a comment on the project, not on the EIR.

(e) Improve water quality to protect human health and the environment consistent with achieving water quality objectives in the Delta.

(f) Improve the water conveyance system and expand statewide water storage.

(g) Reduce risks to people, property, and state interests in the Delta by effective emergency preparedness, appropriate land uses, and investments in flood protection.

(h) Establish a new governance structure with the authority, responsibility, accountability, scientific support and adequate and secure funding to achieve these objectives.

Cal. Water Code § 85020.

In order to fulfill its statutory mandate, the Council must adopt regulations that are concrete and specific enough so that foreseeable and quantifiable implementation of each of the above sub-goals can confidently be predicted as a result of implementation of the regulations. The Council has acknowledged that so far no such result can be expected. The PEIR acknowledges that the Delta Plan is so vague that what, if any, effect it will have is unclear: "The Delta Plan's likelihood of nudging already considered projects forward, and the Delta Plan's degree of influence on future undefined projects, is unclear." PEIR at 2B-2. "How much influence the Council will have is unclear." *Id.* These statements are entirely inconsistent with legislative intent. It was the intent of the Legislature that the Council adopt regulations definite enough "to achieve these objectives." Cal. Water Code § 85020(h). The Council is supposed to be "a governance structure." *Id.* The Delta Plan should include "quantified or otherwise measurable targets." Cal. Water Code § 85308. The Legislature's directive to the Council is for an active and imperative management of the Delta. The verbs "manage," "protect," "restore," and "establish" indicate that the Council's function is governmental and mandatory rather than merely hortatory. However, the Council has described its function as constrained to seeking to "influence" other agencies "through limited policy regulation or through recommendations." PEIR at 16-1. The PEIR goes so far as to relegate the Council's role in the critical area of water conveyance to "the authority to opine generally about improving Delta conveyance as it may relate to the rest of the Delta Plan and the coequal goals." PEIR at 23-5.

This approach is inconsistent with the Legislature's finding that the "Sacramento-San Joaquin Delta watershed and California's water infrastructure are in crises and existing Delta policies are not sustainable." Cal. Water Code § 85001(a). The Legislature did not intend to create a passive and tepid agency; rather it intended 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 [and to] establish a governance structure that will direct efforts across state agencies." Cal. Water Code § 85001(c). In short, the Legislature's command was "make it happen now," and the Council's response thus far has been "we wish it will happen some day."

### **2. Delta Plan Governance Is So Amorphous That It Is Void For Vagueness Where It Regulates Private Conduct.**

Because the plan regulates land use in the Delta it regulates private conduct and is therefore constitutionally suspect because it is so vague that private parties will not be able to

Delta Plan Comments 2/2/2012 page 4 of 20

determine what conduct is allowed and what it prohibited. The Plan reiterates numerous times that it only regulates actions of other public agencies and not the private sector. This is incorrect. A private developer proposing a project in the Delta must conform the project to the Delta Plan. So must a farmer undertaking projects on her own land. The fact that it is the decision of the local land use authority to approve the project that would be appealed to the Council makes no difference because it is the private proponent who is the real party in interest. Saying that the Delta Plan only applies to public agencies would be like saying that a city council hearing an appeal of a decision of its planning commission to approve a shopping mall was only regulating the planning commission and not the private developer.

OR111-5

The Council will be well informed as to the issue of vagueness by the number of comments it receives complaining that the regulation of land use in the Delta (and the Plan on the whole) is so ill-defined as to be subject to the vagaries of ad hoc decision making. From what we have heard from other reviewers we suspect there will be many comments addressing the vagueness of the Plan. It "is an established principle of due process that an enactment is void for vagueness if its provisions and requirements are not clearly defined." *California Coastal Com'n v. Alves*, 222 Cal.Rprt. 572, 586 (1st Dist. 1986). "All are entitled to be informed as to what the state commands or forbids." *Id.* A regulation "which either requires the doing of an act in terms so vague that men of common intelligence must necessarily guess as to its meaning and differ as to its application violates the first essential of due process of law." *Id.*

OR111-6

Policy G P1 provides that some covered actions may not be consistent in all respects with the Delta Plan. It requires a proponent to explain why consistency in all respects is not feasible and explain how "on the whole" the action would be consistent. It then provides that the Council "may" determine that the covered action is consistent. Delta Plan at 60. However, the Plan provides no standards for determining when a partially consistent action will be approved. Without more definite standards this policy is an invitation to ad hoc and arbitrary decision making. For example, what does "feasible" mean? Does it mean that compliance would render the project economically unviable? Does it mean that it would increase the cost by a given factor, say 20%? Does it mean that it is physically impossible? What does consistent on the whole mean? Does it mean for an environmental project that the ecosystem benefits substantially outweigh any negative impacts? Given the mandate of the Delta Reform Act to balance water supply with ecosystem restoration with economic development with maintaining the Delta's sense of place it is unlikely that any covered action will be 100% consistent with all aspects of the co-equal legislative goals and eight sub-goals. For example, how will the Council square the goals of recreational and economic development of the Delta as an evolving place with environmental concerns? The point of regulations is to provide standards and guidance on how these questions will be handled before the first appeal comes before the Council so that parties have reasonable expectations as to what is and is not permissible. So far, it is anyone's guess how the first case appealed to the Council will play out with respect to these and host of other issues.

OR111-7

**3. The Plan Contains Numerous Provisions That Have No Effect Because They Parrot Existing Well-Settled Law That Is Already Fully Enforced In The Guise Of Providing New Guidance.**

Policy G P1 also contains the following: "covered actions must be fully transparent by disclosing all potentially significant adverse environmental impacts and feasible mitigation measures of those adverse impacts." This says nothing at all because statutorily, in order to be a covered action, a proposed action must qualify as a project under CEQA. Cal. Water Code §

OR111-8

**Response to comment OR111-6**

This is a comment on the project, not on the EIR.

**Response to comment OR111-7**

This is a comment on the project, not on the EIR.

**Response to comment OR111-8**

This is a comment on the project, not on the EIR.

## Response to comment OR111-9

This is a comment on the project, not on the EIR.

85057.5(a). Once a proposed action meets the definition of a project under CEQA, CEQA requires that all significant adverse impacts be disclosed and all feasible mitigation measures be adopted. The Plan has a propensity for setting forth requirements like this that are already required and fully enforced under well-settled law. It does this at length in Chapter 4 by putting forth water conservation measures that are already set out in the same level of detail by existing statutes separate and apart from the Delta Reform Act. This appears to the reviewer as being designed to make the Plan look like it is accomplishing something where really it isn't accomplishing anything at all. It buttresses the impression that the Plan is so vague as to not contain any definite requirements at all because wherever it is definite it usually turns out on closer inspection that it is only reiterating existing law that is well covered without any Delta Plan. In numerous instances, the above being only one example, the outcome would be no different if there were no Delta Plan at all. We respectfully suggest that the Council would be wise to strip out all the padding, see what's left, and assess whether the Plan accomplishes anything or not.

OR111-8

#### 4. The Adaptive Management Requirement Does Not Fulfill The Statutory Requirement For Hard Science To Guide Decision Making.

Policy G P1 also requires covered actions to demonstrate an "adaptive management framework" as elucidated in Chapter 2. Chapter 2 in turn provides what looks like the worst kind of management consultant's boardroom power point for gestalt decision making. It provides nine steps that essentially require a proponent to demonstrate that he thinks about the problem, establishes goals, selects actions that he thinks will achieve his goals, tries it out, assesses his results, and adapts his plan based on the outcome. After reviewing Chapter 2, what possible project proponent could fail to put together a power point for display to the Council that wouldn't meet this requirement? Does the Council believe that someone will present a project and proclaim that he doesn't think he is going to get the results he is after but he is just going to go ahead anyway? That he hasn't thought about it? That he isn't going to pay attention to how progress is going? That he won't change course if his plan isn't working? This requirement is a recipe for busywork. It is not what the Legislature intended.

California Water Code Section 85052 provides that :

"Adaptive Management" means a framework and flexible decision-making process for ongoing knowledge acquisition, monitoring, and evaluation leading to continuous improvements in management planning and implementation of a project to achieve specified objectives.

OR111-9

Water Code Section 85211 in turn provides in pertinent part that:

The Delta Plan shall include performance measurements that will enable the council to track progress in meeting the objectives of the Delta Plan. The performance measurements shall include, but need not be limited to, quantitative or otherwise measurable assessments of the status and trend in all of the following:

(a) The health of the Delta's estuary and wetland ecosystem for supporting viable populations of aquatic and terrestrial species, habitats, and processes, including viable populations of Delta fisheries and other aquatic organisms.

## Response to comment OR111-10

This is a comment on the project, not on the EIR.

These two sections taken together require establishment of a network to collect hard data, the means to analyze that data, and the establishment of quantitative trigger points for altering operations in response to the data *in real time*.

For example, the effects of water exports that are begun under flow criteria established by the SWRCB based on modeling and projections must be monitored in real time with actual, not modeled, data. The Delta Plan and management of the Delta must be based on good science and any good scientist knows that all models are wrong, though some models are useful. We hope that the Bay Delta Conservation Plan's ("BDCP") models referred to here turn out to be useful). This would be achieved by establishing a network of stations throughout the Delta that monitor for dissolved oxygen, salinity (electrical conductivity), turbidity, algal counts, and a number of other factors. A good starting point would be to establish stations that could check all the projections of the BDCP models in response to real water diversions under real conditions. In addition, stations must be established and staffed to conduct ongoing population counts of selected species and vegetation. Trigger points must be established in advance to alter diversions in real time in response to monitored data. For example, if dissolved oxygen falls below a specified level for a specified time in specified number of locations, the rate of diversion of water must be curtailed until dissolved oxygen returns to pre established healthy levels. The trigger points, location and number of stations, and prescribed response can all be refined over time as experience managing the system is gained. The same principles apply to restoration projects.

OR111-9

The above example represents the quality of adaptive management required by the Delta Reform Act. It is not intended by any means to exhaust the quantity of adaptive management protocols that will be required. The Delta Plan need not set forth details like the location of monitoring stations or the exact criteria that will be used to signal changes in water diversion. However, it must provide for such real scientific adaptive management to be put into place sooner rather than later. Certainly before any diversion through the Peripheral Canal can begin and before work on major restoration projects begins. At a minimum it must contain a schedule and the outline of how adaptive management will work and be put into place. We see no justification for not engaging this issue now in a meaningful way.

### **B. Delta Plan Chapter 4: A More Reliable Water Supply For California.**

#### **PLAN INCONSISTENCIES.**

- 1. The Delta Plan Fails to Implement Measures to Reduce Reliance on the Delta because it Fails to Require Regional Water Use Efficiency and Self Reliance and Fails to Establish Measurable Goals for Reduced Reliance on Delta Water.**

One of the coequal goals is "providing a more reliable water supply for California. Cal. Pub. Res. Code § 29702. Inherent in providing a more reliable water supply is the objective of promoting "statewide water conservation, water use efficiency, and sustainable water use." Cal. Water Code § 85020(d). The Delta Plan takes the position that all it need do is require water importers to be in compliance with existing water conservation law. However, the Delta Reform Act does more than reiterate state policy with regard to water conservation. It imposes

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new and specific requirements, not found in preexisting law, for reduction in reliance on the Delta for each region of the state that *depends on water from the Delta*:

**Reduction of reliance on Delta for future water supply needs**

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. Each region that depends on water from the Delta watershed shall improve its regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts.

Cal. Water Code § 85021.

Despite this special requirement for regions that import water from the Delta, the Delta Plan does nothing more than rehearse existing water conservation law and congratulate Californians for their progress with respect to improved efficiency: "The Delta Plan does not establish targets for additional water conservation beyond existing state law and the 2020 deadline." Delta Plan at 7. "Statewide improvements in water conservation, water efficiency, and development of new local and regional supplies over the past decade have significantly increased California's ability to meet most of its agricultural and urban water needs." Delta Plan at 69.

The Council is not at liberty to ignore section 85021. The Legislature specifically commanded a reduction in use of Delta water by regions that depend on the Delta. The Council is statutorily obligated to adopt regulations that carry the mandate of section 85021 into practice.

In implementing the Delta Reform Act, the Delta Plan must "[i]nclude quantified or otherwise measurable targets associated with achieving the objectives of the Delta Plan." Cal. Water Code § 85308(b). Asking regions that depend on Delta water to submit a water management plan, by itself, is insufficient to meet the mandate of section 85308(b). Although collaboration with importers, including the development of regional plans, could certainly be part of implementing section 85021, the implementation must contain quantifiable targets for reducing reliance on the Delta as required by section 85308(b).

There are many forms such regulations could take. For example, the Delta Plan could require each region that depends on Delta water to demonstrate a 10% reduction in per capita use of Delta Water every five years. Or, it could treat regions individually, setting different targets for different regions depending on their various circumstances. The latter would probably be the wiser policy choice as the Plan acknowledges that reliance "on water provided through Delta exports varies throughout California from region to region" with, for example, the MWD obtaining 25% of its supply from the Delta while Zone 7 Water Agency obtains 90% of its supply from the Delta. Delta Plan at 77. The Council has discretion in how it goes about implementing section 85021 so long as it does so in a meaningful and quantifiable way, but it cannot determine that section 85021 need not be implemented because the Council has decided that existing water conservation measures are good enough.

The Delta Plan's reliance on existing water conservation measures and failure to implement section 85021 are inconsistent with the Delta Reform Act. In order to be legally sufficient, the Plan must be revised to address these inadequacies.

**No comments**

- n/a -

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2. **The Plan Lacks Balance Because It Focuses on The Peripheral Canal to Provide a More Reliable Water Supply and Fails To Address Water Use Efficiency and Conservation Projects In Any Meaningful Way.**

The Plan does not treat the sub-goals of establishing new and improved conveyance facilities on the one hand and improving efficiency and self-reliance on the other as equal. After establishing that nothing more will be done with regard to conservation (other than requiring compliance with existing law) the Plan concludes that the real issue to be addressed is the reliability of water deliveries to the SWP and CVP from the Delta:

Yet, at the same time, the reliability of water deliveries from the State Water Project (SWP) and the Central Valley Project (CVP) has diminished because of drought and the sharp decline of native fisheries that has resulted in court-ordered and regulatory water project operating restrictions to protect the Delta ecosystem.

OR111-11

Delta Plan at 69.

The Delta Plan envisions that through construction of new conveyance facilities, project "operating restrictions" would be avoided at the same time as claimed benefits to fisheries would be achieved. "One of the Delta Plan's objectives is to promote options for new and improved infrastructure relating to water conveyance in the Delta . . . . The existing configuration of Delta water conveyance and associated conveyance facilities do not provide adequate long-term reliability to meet current and projected water needs for SWP and CVP water deliveries." Delta Plan at 86. New conveyance facilities "can enhance the operational flexibility of the Delta system to divert and move water at times and from locations that are less harmful to fisheries, or to reliably transport environmental water supplies to specific locations at times when it can benefit fish and water quality." Delta Plan at 87. This is all code for "Peripheral Canal." Through this logic, the Council has thus far chosen to promote construction of the Peripheral Canal and to abdicate its responsibilities to promote regional self-sufficiency and reduction in reliance on the Delta.

The Legislature has slated the BDCP for incorporation into the Delta Plan. Cal. Water Code § 85320. The words "Peripheral Canal" do not appear in the Delta Plan or in the BDCP, however the Peripheral Canal project is already well defined in the BDCP planning process. *See, generally, <http://baydeltaconservationplan.com/Home.aspx>* (last visited Feb. 1, 2012); *see also infra* at 14–15. The Delta plan assumes, without explaining to the public, that the Peripheral Canal will achieve the Council's water supply objectives. In many ways, the Delta Plan is really a *sub rosa* plan to build the Peripheral Canal and at the same time to shelve other water supply reliability measures.

This approach is inconsistent with the Delta Reform Act which provides for new conveyance facilities as only one among a list of water reliability measures:

Providing a more reliable water supply for the state involves implementation of water use efficiency and conservation projects, wastewater reclamation projects, desalination, and new and improved infrastructure, including water storage and Delta conveyance facilities.

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Cal. Water Code § 85004(b). In addition to the specific language of section 85004(b), it is obvious to even the casual reader that the overall structure and purpose of the Delta Reform Act is to strike a balance. First there is the balance of the coequal goals: water supply does not trump

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This is a comment on the project, not on the EIR.

**Response to comment OR111-12**

This is a comment on the project, not on the EIR.

the environmental needs of the Delta and both are important. And then within the goal of a more reliable water supply building a more efficient means of exporting water must be balanced against reducing demand.

The Delta Plan is not consistent with the balance sought by the Legislature. The Plan endorses a specific and highly controversial multi-billion dollar Peripheral Canal. It touts the purported benefits of the Canal but does not discuss any potential pitfalls. On the other hand the Plan provides no measurable targets for conservation. The Plan even goes so far as to admit that "additional targets for urban conservation and agricultural water use efficiency will be necessary, but these will be addressed in future updates to the Delta Plan." Delta Plan at 7. Building a canal now to allow the export of more water and getting around to water conservation at some undefined time in the future is not what the Legislature had in mind. The failure to address water supply reliability in conformance with legislative intent is of course exacerbated by the attempt to camouflage the dominant role of the Peripheral Canal in the whole process.

The long rehearsal of existing state law requirements at Policy WR P1 is no substitute for regulations that provide for quantifiable reductions in Delta water use. For example, the repetition of Water Code Section 10608's requirement for a 20% reduction in statewide urban per capita water use by 2020 in no way implements a reduction in reliance on the Delta. An importer's per capita use could go down while the per capita use of Delta water goes up. In fact, as Delta water deliveries become more reliable due to the Peripheral Canal and other sources of water become less reliable due to such things as climate change and restrictions on use of Colorado River water, increased consumption of Delta water is the most likely scenario. The plan, as currently formulated, will probably have the effect of *increasing* reliance on the Delta.

The Delta Plan's focus on the Peripheral Canal and lack of attention to meaningful implementation of water conservation is not consistent with the balanced approach required by the Delta Reform Act. In order to be legally sufficient, the Plan must be revised to address these inadequacies.

#### UNREASONABLE POLICY CHOICES

### 3. The Plan Ignores Real World Implications Of The Peripheral Canal: Once The Infrastructure is Built Water Importers Will Use More Delta Water.

In California today, the factor constraining new development and population growth is the limited supply of water. Numerous factors provide incentives for local agencies to promote new development, not least of which are the incentives built into the state's financing structure that translate new development into revenue for local government. The situs sales tax structure and the ability of local government to exact cash and community benefits from developers are just two examples. Population pressure from immigration is only forecast to increase in coming years. And the public has an appetite for water intensive uses, such as large lawns and other water inefficient landscaping. Likewise, agriculture has an appetite for bizarrely water intensive agricultural practices, such as growing cotton and rice in the desert. The BDCP's operational criteria for the Peripheral Canal takes the approach of determining the minimum amount of water required for in-stream flow in order to sustain a viable ecosystem and then identifying everything above that amount as available for export. This means that much larger quantities of water will be available for export through the Peripheral Canal than are currently available. The BDCP, standing alone without constraint from the encompassing Delta Plan, is a plan for increased reliance on Delta water. The combination of incentives for growth, elimination of the constraints on increased water supply, and undisputable historical record of water agencies using

### Response to comment OR111-13

This is a comment on the project, not on the EIR.

### Response to comment OR111-14

This is a comment on the project, not on the EIR. See also Master Response 1.

## Response to comment OR111-15

This is a comment on the project, not on the EIR.

every drop of water they can get their hands on make for the perfect statewide storm of new development fueled by vastly increased exports of Delta water.

The criteria the Council may apply when considering incorporation of the BDCP are limited by statute. However, the Delta Plan is the primary plan for Delta water management and the BDCP, if incorporated, will be one part of the master plan and subject to its larger structure. The Delta Plan must therefore take account of likely effects of the BDCP. If any result of BDCP incorporation is likely to increase Delta exports, then the Council is required to build a Delta Plan around the BDCP that will counteract those effects.

The Delta Plan shuts its eyes to the enormous pressure for increased reliance on Delta water that is certain to accrue after construction of the Peripheral Canal. It shuts its eyes to the reality of the BDCP. At the very least, reasoned decision making would require a thoughtful discussion of how the Delta Plan will overcome these pressures and carry out its mandate to reduce reliance on Delta water. Instead, the Council has concluded that "the agencies pursuing BDCP are best positioned to develop and evaluate possible options and decide on the best Delta conveyance concept," PEIR at 23-5. Therefore, the Delta Plan "does not include any regulatory policies regarding Delta conveyance," PEIR at 23-4. The discussion of the Council's authority at pages 23-2-23-5 of the PEIR concludes that in the face of the BDCP, the Council has no authority over new conveyance options or water exports. Statutory authority for and the content of the BDCP are prescribed by the Delta Reform Act, the same piece of legislation that creates the Council and provides for its powers and duties. The Delta Reform Act provides that the "Delta Plan shall promote options for new and improved infrastructure relating to the water conveyance in the Delta, storage systems, and for the operation of both to achieve the coequal goals." Cal. Water Code § 85304. The Legislature further mandated that the Council "[i]mprove the water conveyance system and expand statewide water storage." Cal. Water Code § 85020(f). If all the Council can do with respect to conveyance is "opine generally," as the PEIR proclaims, then these code sections have no effect. The Council has read the Delta Reform Act in a way that renders sections 85304 and 85020(f) surplusage. Courts "should give meaning to every word of a statute, if possible, and should avoid a construction making any word surplusage." *Arnett v. Dal Cielo*, 14 Cal. 4th 4, 22 (1996). The PEIR attempts a marvelous lawyer's argument to the effect that the Council's authority over conveyance and water exports is "contingent," and would come into effect only if the BDCP fails to come to fruition. PEIR at 23-3. However, this is simply not what the plain language of the Delta Reform Act says. The Council's reading gives effect to the parts of the Delta Reform Act that provide for the BDCP and chooses to give no effect to the parts that provide for its own authority over conveyance and exports. A court will "reject this interpretation of the statute because it fails to give effect to each of its parts." *Arnett*, 14 Cal. 4th at 22.

OR111-14

The Delta Plan must take proper account of the Peripheral Canal and plan for managing water exports, water conservation, and reduced reliance on the Delta in the face of greatly increased demand pressure for Delta water and capacity for export that are inherent in the Peripheral Canal project.

#### **4. The Plan Does Not Assess The Real Potential For Reduced Delta Exports Through Conservation and Regional Self Reliance Inherent In The Fact That Only A Small Percentage Of The State's Water Comes From The Delta.**

The Plan correctly points out that only 14% of the state's water supply comes from the Delta. Delta Plan at 77. It also correctly points out that many regions of the state that consume large quantities of Delta water at the same time use Delta water for only a minority of their total

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consumption. For example, MWD uses Delta water for approximately 25% of its water supply. Delta Plan at 77. The obvious corollary to this observation is that MWD presents a great opportunity for *reduction* in Delta water use. If, as the plan proclaims, water use efficiency is going great and significant reductions in water use can be expected, then a 10% reduction in total MWD water use would be a reasonable expectation in the near future (existing law calls for a 20% reduction by 2020). If MWD reduces its total consumption by 10% then it is in position to reduce the share of water it takes from the Delta from 25% to 15% (cutting Delta water use almost in half) by simply reducing Delta imports by the amount of water that is saved through conservation. The Council has the authority to impose such a requirement that (a) conservation be achieved; and (b) conserved water be applied to reducing the share of water taken from the Delta.

We believe that this logic should be applied in absolute terms and net use of Delta water should be reduced by the amount conserved, or at least reduced by some percentage of the amount conserved. But at a minimum, there is no reason why MWD should not be required to reduce its per capita consumption of Delta water from 25% to 15% in the near future.

Because the facts are taken from the Delta plan, the implications are obvious, and Water Code Section 85021 mandates that the Council require reduced reliance on Delta water, the Plan's failure to adopt this position (or even discuss it) means that the Plan overlooks an important aspect of the problem and fails to make a rationale connection between the facts found and the policy choices made. Two red flags for arbitrary and capricious administrative action.

At a minimum, for each importer, the plan should set forth the figures for how much Delta water is used in both absolute terms and as a percentage of total water used. It should then assess the potential for increased efficiency and regional self reliance and set a target for reduction in Delta water imports achieved by applying conserved water to reducing the Delta share. For some regions, like Zone 7, progress in the near future may be modest. For others that use Delta water for only a small percentage of total consumption, complete elimination of Delta imports would be readily achievable in the near future.

In the absence of this approach, or some other meaningful, measurable way to prevent the Delta Plan and incorporated BDCP from being instruments to vastly increase Delta exports (which is the only possible result absent explicit measures to prevent it) and increase reliance on Delta water, the Plan is unreasonable in light of water code section 85021.

**5. The Delta Plan Does Not Address The Fundamental Problem With California Water Supply: The Inability To Harvest And Store The Abundant Water Available At Times of Peak Flow.**

The Delta Plan correctly identifies the crux of California's water supply problem to be that the state lacks the capacity to harvest and store the overabundance of water that is available during peak storm flows. Implementation of conveyance and storage facilities that could harvest peak flows at times of great abundance would provide plenty of water for beneficial use and would also greatly reduce the environmental harm from water diversions because water would be diverted at times of greatest flows so the diversion would have little or no negative impact on healthy in stream flows.

The Delta Plan lays out the facts to support the above conclusion as follows:

Because so much of California's precipitation comes from relatively few storms, the pattern of extreme annual fluctuations in the State's water supply is intensified.

**Response to comment OR111-16**

This is a comment on the project, not on the EIR.

OR111-15

OR111-16

**No comments**

- n/a -

Delta Plan at 69.

California experiences the most erratic pattern of precipitation of all the states in the nation, with the bulk of its annual water supply falling within just 5 to 15 days (Dettinger et al. 2011). This means that in years when fewer storms pass over California, the state faces the problem of too little water; conversely, a few extra storms may result in flooding.

*Id.* at 69–71.

More water is exported by the SWP and CVP in average or dry years [when environmental impacts of diversion are greatest] than in wet years [when impacts would be minimal]. This is because the current infrastructure for water conveyance and surface storage limits the ability for the State and federal systems to capture more water during high flows that otherwise would have been available for diversion. Wet year exports through these projects averaged about 4.6 MAF, significantly less than average or dry year diversions.

*Id.* at 75.

Conveyance improvement can enhance the operational flexibility of the Delta system to divert and move water at times and from locations that are less harmful to fisheries . . . .

*Id.* at 87.

The statewide water storage capacity is currently inadequate, especially south of the Delta, to facilitate export of water at times of surplus when the only impediment is lack of available storage capacity (DWR 2009). For example, in spring 2011, the south Delta pumps were turned off because real-time urban and agricultural water users' needs could be met through local water supplies and previously delivered export supplies, and storage opportunities south of the Delta were insufficient to take delivery of available water.

*Id.* at 88.

Yet the Plan proposes no policies with regulatory effect to address this problem. Delta Plan at 89. Rather, the Plan pins its hopes on DWR's Surface Water Storage investigation. The Surface Water Storage Investigation is discussed and embodied in Recommendation WR R6 at page 90. A visit to DWR's Surface Water Storage Investigation website reveals that the Investigation consists of five projects: Shasta Lake Water Resources Investigation; In Delta Storage; Los Vaqueros Reservoir Expansion; Upper San Joaquin River Basin Storage Investigation; and North-of-the-Delta Offstream Storage (NODOS). See <http://www.water.ca.gov/storage/uppersj/index.cfm> (last visited January 25, 2012). However, three of the five do not really exist. The status of three key projects is as follows: "DWR has stopped work on the Shasta Lake Water Resources investigation since July 2005 due to lack of funding." <http://www.water.ca.gov/storage/shasta/index.cfm> (last visited January 25, 2012).

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"The in-Delta Storage Program has been suspended since July 2006 when State funding for the program was cut." See <http://www.water.ca.gov/storage/indelta/index.cfm> (last visited January 25, 2012). "With additional funding, local, state, and federal partners may choose to continue to study the feasibility of a 275 TAF expansion [at Los Vaqueros]." See <http://www.water.ca.gov/storage/losvaq/index.cfm> (last visited January 25, 2012). Two of the five projects upon which the Delta Plan depends for its storage element were shelved in 2005 and 2006. A third has no funding and no definite plan to begin.

The NODOS project is being studied. The NODOS project, if built, would provide between 1.27 and 1.81 MAF of new storage, with a diversion capacity of between 3900 and 5900 CFS. Water would be diverted from the Sacramento River at times of high flow. The water would be stored for later use and released at times of scarcity. NODOS, as a solution, is consistent with the facts as found in the Delta Plan. Whereas the Peripheral Canal is not. The Canal would not significantly increase the ability to harvest peak storm flows and therefore does not address the basic problem. In addition to NODOS, there are millions of acre feet of water that are diverted at times of flood flow but not made available for beneficial use. Harvesting this water is the most expeditious way to meet the coequal goals of protecting the Delta ecosystem and improving water supply reliability because use of this "excess" water would have the least (if any) environmental impact on the Delta and would provide abundant water for beneficial use.

Attached is a DWR fact sheet entitled Sacramento River Flood Control Project Weirs and Flood Relief Structures. It shows historical diversions at the Moulton, Colusa, Tisdale, Fremont, and Sacramento Weirs. These weirs have combined capacity to divert 588,000 cfs. The Sacramento Weir alone, operating at a river stage of 31 feet, diverts over 31,000 cfs. To put this into perspective, that would be 1 MAF approximately every 16 hours, or the equivalent of the high end of total SWP and CVP yearly diversions (6 MAF) in a period of 4 days. From just one of the five weirs. The Delta Plan contains no discussion of how this abundance of water might be harvested for beneficial use, taking pressure off the Delta.

The diversion structures are already in place. A number of ways to harvest and store the water might be considered. For example, if a Peripheral Canal is to be built, it could harvest water from these flood flow diversions points rather than the proposed diversion point at Hood. The NODOS project storage site could also be connected directly to the Peripheral Canal, allowing water harvested a times of abundance to be used during periods of scarcity. Currently the Canal has no such capacity. The Delta Plan also identifies over-pumping and depletion of groundwater throughout the state as a major problem. Delta Plan at 93. But the Plan adopts no policies to address the problem. *Id.* Water diverted at times of abundance could be conveyed through the SWP and CVP and used for groundwater re-charge. This would allow excess capacity at times of high flow to be harvested, stored (in aquifers), and later used at times of scarcity. The Public Policy Institute of California ("PPIC") has estimated that more than 2 MAF could be stored in groundwater basins in a cost-effective manner. See California Public Policy Institute, *Just The Facts, Water Supply And Quality*, available at [http://www.ppic.org/content/pubs/jtF/JTF\\_WaterJTF.pdf](http://www.ppic.org/content/pubs/jtF/JTF_WaterJTF.pdf) (last visited Feb. 2, 2012). PPIC estimates that next to improvements in urban use efficiency, groundwater storage has the highest potential for additional water supply. *Id.* Recall that during periods of wet weather the export pumps are turned off because regions throughout the state meet their demand from existing storage or local supply sources. Delta Plan at 88. Why not take advantage of this opportunity to convey excess water and use it to recharge groundwater?

With regard to this problem, the Delta Plan is so vague and amorphous as to not be any plan at all. Rather the approach is to call for more study of ways to improve storage and point to non-existent projects as the hope for the future. There have been plenty of studies. What is

### **Response to comment OR111-17**

This is a comment on the project, not on the EIR.

### **Response to comment OR111-18**

This is a comment on the project, not on the EIR.

### **Response to comment OR111-19**

This is a comment on the project, not on the EIR.

### **Response to comment OR111-20**

This is a comment on the project, not on the EIR.

needed now is a plan of action that is specific enough to take a direction. At a minimum, the Plan should set targets for increasing the percentage of exported water that is diverted at times of peak flow and decreasing the amount diverted at all other times. It should sketch out, in at least conceptual terms, how excess capacity can be used for groundwater recharge. It should set targets for groundwater recharge accomplished in this way.

OR111-20

As to the crux of the California's water problem, harvesting and storing peak flows, the Delta Plan as currently formulated has really nothing to say at all.

**C. Chapter 5: Restore The Delta Ecosystem**

**SUGGESTIONS FOR IMPROVEMENT.**

We agree with the sentiment that rivers "in the Delta and its watershed [should] have expansive riparian edges that are seasonally connected to large floodplains." Delta Plan at 107. We also believe that where more conventional levees remain in place they should be heavily vegetated. We understand the constraints placed on levee vegetation by existing Army Corps of Engineers ("ACOE") policies. See Delta Plan at 42.

We suggest that the Council make implementation of expansive riparian edges a higher priority and that it take an active role in changing ACOE's mind with regard to levee vegetation.

We have no doubt that appropriate criteria can be developed so that attractive and high habitat value vegetation can co-exist with maintaining the stability and flood control function of levees. Through the Delta Science Panel, provision of grants, and other means of conducting research and pilot projects, we believe the Council should take the lead in developing a "living flood barrier" concept. We are reminded of the experience of the Urban Creeks Council with ACOE in the 1980's. At that time ACOE prescribed channelizing urban creeks in narrow, unnatural concrete lined passages with steep banks. Urban Creeks Council fought this policy and developed a sketch of a natural creek transect, showing gentle sloping banks and vegetation, as its emblem. After some years of fighting these efforts, ACOE abandoned its position on channelization, adopted the approach recommended by the Urban Creeks Council, and took Urban Creeks Council's motto (showing a natural, vegetated channel) as its own. ACOE is susceptible to rationale argument and can be persuaded to change its position.

OR111-21

We suggest that the Council is in the best position to lead the effort with respect to Delta levees. The Council could identify funding sources, develop pilot research projects assessing different kinds of vegetation and different alternatives to armored levees, and come up with a proposal for the living flood barrier concept. We suggest that this be embodied as a target to put in place a demonstration project within 3 years. It can also call on other state and federal agencies, through recommendations, to begin work on the living flood barrier concept and to put in place demonstration projects within 3 years.

With respect to setback levees and a more natural riparian edge connected to seasonal flood plains, we suggest that through the Delta Science Panel, provision of grants, and other means at its disposal, the Council begin identifying specific reaches of river that can be converted to this configuration and identify the first project area with a goal of completing work in a specified time frame.

We think the Council is on the right track with regard to these issues and that its approach can be improved by providing specific measures and definite time frames such as those suggested above.

**Response to comment OR111-21**

This is a comment on the project, not on the EIR.

### III. COMMENTS ON THE PEIR

#### A. The PEIR Fails To Include Details Of The Peripheral Canal Sufficient To Allow Members Of The Public To Understand And Meaningfully Consider The Issues Raised By Approval Of The Delta Plan.

The BDCP is a plan to build the Peripheral Canal along with an associated Habitat Conservation Plan. The BDCP is cast by the Legislature for review by the Council and incorporation into the Delta Plan. Cal. Water Code § 85320. Without approval by the Council and incorporation into the Delta Plan, the Peripheral Canal is not eligible for state funding. Cal. Water Code § 85320(b). Therefore incorporation into the Delta Plan is a necessary step in the approval and ultimate construction of the Peripheral Canal. Adoption of the Delta Plan itself is also a necessary step for approval of the Peripheral Canal as failure to adopt the Delta Plan would mean the Peripheral Canal could not be incorporated into it, making construction of the canal impossible. Where an early approval is a “necessary step” in the ultimate approval of a project then the environmental impacts of that project are a reasonably foreseeable consequence of the early approval and an environmental analysis of the ultimate project must be undertaken. *Fullerton Joint Union High School Dist. v. State Bd. of Education*, 32 Cal.3d 779, 794 (1982), *disapproved on other grounds by Board of Supervisors v. Local Agency Formation Com.*, 3 Cal. 4th 903, 918 (1992). However, the PEIR fails to undertake a program level analysis of the Peripheral Canal. Rather the PEIR concludes that the “BDCP is a separate and distinct program from the Delta Plan.” PEIR at 23-28. We believe that this conclusion is inconsistent with governing law.

Practically speaking, the most significant aspect of the Delta Plan is that it provides the framework for approval and construction of the Peripheral Canal<sup>1</sup>. The Council’s most significant action is likely to be approving incorporation of the Peripheral Canal into the Delta Plan.

The Peripheral Canal project is already well defined. It involves construction of a new multi-billion dollar canal with a new point of diversion on the Sacramento River near Hood. Water will be conveyed through the canal around the Delta and directly to the export pumps for the SWP and CVP located at Clifton Court Forebay in the south Delta. Water that previously flowed through a myriad of Delta channels before reaching the export pumps will no longer do so. *See generally Draft Bay Delta Conservation Plan available at* <http://baydeltaconservationplan.com/Home.aspx> (last visited January 30, 2012). Although the BDCP process ostensibly considered alternatives to the above described canal, such as through Delta conveyance, the Canal was selected as the preferred alternative early in the BDCP process and no serious observer disputes that the SWP and CVP water contractors (“Water Contractors”) who are driving the process are well along in pushing the Canal project through. Likewise the BDCP seeks to establish flow criteria in consonance with approvals from the SWRCB that will establish a “safe yield” for water export quantities significantly greater than amounts currently exported. *Id.* A range of specific quantities for safe yield has been established in the BDCP and are being considered by the SWRCB. By avoiding entrapment of Delta Smelt, the Peripheral Canal will facilitate export of water at these increased levels.

<sup>1</sup> The Peripheral Canal might reasonably be considered a larger project than the Delta Plan itself and the Delta Plan might be considered “a necessary precedent for action on a larger project” and approval of the Delta Plan might be considered an action that “commits the [state] to the larger project.” 14 Cal. Code Regs. § 15165.

### Response to comment OR111-22

The proposed BDCP is a reasonably foreseeable future project that is being evaluated by the Department of Water Resources as the CEQA lead agency. The cumulative impacts of the proposed Delta Plan, in combination with the impact of the proposed BDCP, are described in EIR Sections 22 and 23. In addition, the Delta Plan must be reviewed at least once every five years and may be revised as the Council deems appropriate pursuant to Water Code section 85300(c). Hence, the Delta Plan would be amended when the BDCP is ready for incorporation. Please refer to Master Response 1.

OR111-22

The PEIR justifies failure to analyze the specifics of the Peripheral Canal (or any water conveyance facility) with statements such as the following with respect to new conveyance facilities: "It is unclear where these facilities would be located;" PEIR at 3-3, and the "precise magnitude and extent of project-specific impacts on water resources would depend on the type of action or project being evaluated, its specific location, its total size, and a variety of project-and site-specific factors that are undefined at the time of preparation of this program-level study;" PEIR at 3-76, "At this time, the specific details of BDCP have not been defined, and because the BDCP is a voluntary program, there is no mandate to complete the BDCP within a specific schedule or with specific features or operations." PEIR at 23-28. These statements are not accurate. Specific information on the extent, type of project, location, size, and range of water exports is available with regard to the Peripheral Canal at the time of preparation of this PEIR. As to the "voluntary nature" of the program. The BDCP is the highest priority with regard to the Delta of DWR, The United States Fish and Wildlife Service, The United States National Marine Fisheries Service, The United States Bureau of Reclamation, and the Water Contractors. USFWS and NMFS have taken the unusual step of becoming project proponents placing themselves in the role of lead agencies rather than the normal Cooperating Agency role for permitting agencies under NEPA. The fact that it may be in some sense "voluntary" is irrelevant. It is more than reasonably foreseeable. It is a virtual certainty that the BDCP will come before the Council in the near term. Put another way, if adoption of the BDCP isn't a reasonably foreseeable result of adoption of the Delta Plan, then no future project could every be considered reasonably foreseeable under any circumstances and CEQA's requirement for consideration of reasonably foreseeable impacts would be rendered a nullity.

Construction of the Peripheral Canal is a reasonably foreseeable result of adoption of the Delta Plan, adoption of the Delta Plan is a necessary step in the approval and construction of the canal, and the Council is well apprised of the specifics of the Peripheral Canal project which it will shortly be called upon to approve. The description and analysis of the Peripheral Canal in the PEIR should therefore be concrete and specific. See 14 Cal. Code. Regs. § 15146 (providing that the degree of specificity in an EIR should correspond to the degree of specificity with which the underlying activity is known). As it stands, the PEIR treats water exports in only the vaguest and most general terms and addresses improved conveyance facilities as a generality. There is no justification for this lack of specificity in the face of information available to the Council.

An "EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." *Laurel Heights Improvement Ass'n*, 47 Cal. 3d 376, 405 (1988). The PEIR's attempt to relegate the Peripheral Canal to the cumulative effects section is not consistent with *Laurel Heights*. Although we have identified the Peripheral Canal and ferreted out its scope and direction by reference to the BDCP website, "reading between the lines" of the Delta Plan, and consulting the Delta Plan PEIR cumulative effects section, a member of the public coming to the PEIR and taking it at face value would never know that the Delta Plan is in effect a well developed proposal to build a multi-billion dollar canal that will radically alter the hydrology of the Delta<sup>2</sup>. The BDCP documents are not much better. The Peripheral Canal is disguised in the BDCP as a "conservation measure" rather than a piece of water supply infrastructure. Even a persistent member of the public who would take the trouble to consult BDCP documentation in

<sup>2</sup> The PEIR cumulative effects section does provide some detail on conveyance options and uses the word "canal" although not "Peripheral Canal". It is odd, to say the least, that in many instances one only understands what the Delta Plan contains by consulting the PEIR.

**No comments**

- n/a -

OR111-22

addition to the Delta Plan PEIR, would be hard pressed to understand “the issues raised by the proposed project.”<sup>3</sup>

The “EIR process protects not only the environment but also informed self-government.” *Laurel Heights Improvement Assn. v. Regents of University of California*, 47 Cal.3d 376, 392 (1988). Only “through an accurate view of the project may the public and interested parties and public agencies balance the proposed project’s benefits against its environmental cost, consider appropriate mitigation measures [and] properly weigh other alternatives.” The PEIR is thus fatally deficient in that it fails to inform the public and the decision makers of what is actually at stake here.

OR111-22

**B. The PEIR Fails To Provide The Program Level Analysis Of The Peripheral Canal That The Council Needs To Make Informed Decisions About The Content And Approach Of The Delta Plan.**

An analysis of impacts that are reasonably foreseeable should be provided in a planning stage EIR if the information for the analysis is reasonably available. *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova*, 40 Cal. 4th 412 (2007). It is well established that where a result is reasonably foreseeable, an EIR should make reasonable forecasts regarding that result. *San Francisco Ecology Ctr. v. City & County of San Francisco*, 48 Cal. 3d 584, 595 (1975). An analysis of the impacts of future actions should be undertaken when the future actions are sufficiently well defined to make it feasible to evaluate their potential impacts. *Environmental Protection Info. Ctr. v. Department of Forestry & Fire Protection* 44 Cal.4th 459, 503 (2008).

We are aware that proponents of the Peripheral Canal are in the process of preparing an EIR for that project (we dispense with the newspeak nomenclature promoted by the Water Contractors in the BDCP environmental documentation, such as “alternative conveyance options” and call the Peripheral Canal what it is). We do not dispute that consideration of some aspects of the Canal may be deferred to that project level documentation. Such things as site specific impacts dependent on canal alignment, and more precise consideration of diversion rates and flow criteria may be deferred to the subsequent EIR. However, the PEIR should provide a “more exhaustive consideration of effects and alternatives than in an EIR on an individual action,” ensure “consideration of cumulative impacts,” and “consider broad policy alternatives and program wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts.” 14 Cal. Code Reg. §15168(b).

OR111-23

The PEIR does none of these things with respect to the Peripheral Canal. We are aware that the Council will have the Peripheral Canal project EIR at its disposal when it considers incorporation of the BDCP. However, this is of little relevance as the factors the Council may consider in approving incorporation of the BDCP are statutorily limited. Cal. Water Code §

<sup>3</sup> The words “Peripheral Canal” are nowhere used in any of the BDCP or Delta Plan documents. However, at the monthly meetings held by BDCP planners, everyone in attendance refers to the project as the Peripheral Canal and project proponents at the highest level of state government candidly admit that the restoration projects are offered to buy off opposition to the canal. The point of the exercise is to build a Peripheral Canal. One would never know this by reading the environmental documentation. As the lead agency responsible for the Delta Plan PEIR and a Responsible Agency with regard to the BDCP, the Council is culpable in perpetuating this lack of transparency.

## Response to comment OR111-23

Please refer to the response to comment OR111-22.

85320(e). In fact, the Council's role is to judge the sufficiency of the project EIR in discussing and considering alternatives, not to select which alternatives are to be adopted. The PEIR acknowledges these limitations on the Council's review of the Peripheral Canal. See PEIR at 23-3-23-4. However, the PEIR and Delta Plan fail to take the necessary steps flowing from this conclusion, that the Council's role in carrying out its statutory mandate with regard to the Peripheral Canal is to build a Delta Plan that takes account of and actively manages the consequences of the canal. The water conservation requirements, groundwater recharge requirements, reduction in Delta water reliance requirements, requirements for usage of peak flow, and other active management techniques discussed throughout our comments would form a part of this management. In order to do this, the Council needs environmental analysis of the big picture effects of the Canal now, while it is formulating the Delta Plan. Not later when the plan has been approved and the Peripheral Canal comes up for incorporation. Environmental analysis must be undertaken at the earliest practical time and at a time where it will provide meaningful information to decision makers.

With regard to secondary effects, one salient secondary effect of the Peripheral Canal (and any improvement in water supply reliability) will be its growth inducing impact. Removal of constraints on water supply will spur growth. A program EIR need not be as detailed as subsequent EIRs with respect to specific projects, however the program EIR should "focus on the secondary effects that can be expected to follow from adoption" of the plan. 14 Cal. Code Regs. § 15146.

The PEIR, however, avoids any discussion of this secondary effect. DWR and the Water Contractors have taken the position that the Water Contractors are Responsible Agencies for CEQA purposes with respect to the BDCP. If this is true, then they are responsible agencies with respect to improved water supply reliability for the Delta Plan as well. A Responsible Agency is required to participate in the preparation of an EIR being prepared by the Lead Agency. It must "consider the parts of the project that are subject to its jurisdiction." *Riverwatch v. Olivenhain Mun. Water Dist.* 170 Cal. App. 4th 1186, 1202 (2009). Its findings are required "for those effects within the scope of the responsible agency's jurisdiction." *Id.* The PEIR must consider the growth inducing impacts of the Peripheral Canal and any water supply reliability improvement. The Water Contractors are required to participate in preparation of those parts of the PEIR that consider the growth inducing impacts that may occur within their respective jurisdictions. For example, MWD must participate in preparation of the sections of the PEIR that treat the growth inducing impacts of the Peripheral Canal on Los Angeles County.

Failure to provide a program level analysis of the Peripheral Canal, including its growth inducing impacts, renders the PEIR, as currently drafted, inadequate

### C. The PEIR Fails To Provide Program Level Analysis Of The 2-Gates Project.

The PEIR mentions the 2-Gates project in the cumulative impacts section as a "related action." PEIR at 22-26. The Plan provides that 2-Gates, and the other projects listed in table 22-1 "are not addressed, directly or indirectly, by the Delta Plan (i.e. the Delta Plan does not contemplate these as covered projects and makes no recommendations regarding them)." PEIR at 22-2. The logic by which the Council has arrived at this conclusion is unclear.

The 2-Gates project is a proposal by the United States Bureau of Reclamation in league with several Water Contractors to alter the turbidity regime of the south Delta. By placing operable gates across Connection Slough and Old River project proponents hope to manipulate turbidity south of the gates. The proponents believe that the Delta Smelt prefers areas of high turbidity and that by lowering the turbidity in the region surrounding the export pumps they can

## Response to comment OR111-24

The EIR included the 2-Gate project in the Cumulative Analysis because the project has not been approved and the Bureau of Reclamation and California Department of Water Resources are continuing evaluations of alternatives related to the 2-gate project in accordance with information on those agencies respective websites.

OR111-23

OR111-24

## Response to comment OR111-25

Comment noted.

avoid restrictions on pump operation designed to protect the Delta Smelt from entrainment. The 2-Gates project was temporarily withdrawn in the face of criticism that the smelt-turbidity hypothesis was unproven. In response to this criticism, USBR has undertaken a field study to prove the smelt-turbidity hypothesis. The study is nearing completion and preliminary results purport to support the smelt-turbidity hypothesis. Water Code Section 85085 makes construction of the 2-Gates project not only state policy, but a high priority for the Delta.

Even if all goes according to the best expectations of the Water Contractors the Peripheral Canal would not be operational for at least ten and probably fifteen years. The 2-Gates project is their best hope of increasing exports and escaping court-ordered pumping restrictions in the mean time. USBR has made the follow up smelt-turbidity study a priority.

The 2-Gates project is reasonably foreseeable and soon.

We do not understand the PEIR's statement that approval of 2-Gates would not be a covered action. It would be (1) a project under CEQA; (2) occur at least in part within the Delta; (3) be carried out, approved, or funded by a public agency; (4) would be covered by one or more provisions of the Delta Plan; and (5) have significant impact on the coequal goals. Water Code § 85057.5. A perusal of BDCP draft Chapter 4, Covered Activities, reveals a number of barrier projects, but not the 2-Gates project or anything fitting its description. Even on the Council's logic that anything contemplated by the BDCP need not be considered by the Council, 2-Gates would not be exempt.

The 2-Gates project has been the subject of great controversy, generating thousands of individual comments in opposition. A great deal of opposition to the 2-Gates project has come from boaters because the project would hinder navigation. Numerous environmental concerns have also been raised.

The general concept of regulating turbidity and salinity through operable gates is also the subject of a number of other proposed projects at various stages of completion.

The Council is statutorily mandated to adopt a plan that promotes water supply reliability and ecosystem health. 2-Gates purports to do both of these things. It is also state policy, as embodied in the Delta Reform Act, that it be implemented.

Unless the Council can point to some further justification that approval of 2-Gates will not be a covered action that has escaped our notice, then program level analysis of this project is required.

### IV. CONCLUSION

For the foregoing reasons, we respectfully request that significant revisions to the Delta Plan and PEIR be undertaken to render them consistent with law and to address the flaws in approach and management we have endeavored to point out.

Submitted,

s/Michael Brodsky  
Michael A. Brodsky

1 An assessment of future water supply reliability is now required in Urban Water Management and  
2 Agricultural Water Management Plans as well as in voluntary regional water planning documents known  
3 as IRWMPs. For areas that rely upon water from the Delta watershed, the failure of many water suppliers  
4 to identify and evaluate actions to reduce their reliance on the Delta is a significant impediment to  
5 achieving the coequal goals.

### 6 ***Problem Statement***

7 The lack of full participation by water suppliers throughout California to implement laws, programs, and  
8 projects that improve water efficiency, expand local and regional water supplies, and reduce reliance on  
9 the Delta watershed contributes to higher water demands, less water supply to meet these demands,  
10 greater pressure on the Delta ecosystem for its water, and more vulnerability to the impacts of climate  
11 change and catastrophic events. At a minimum, all water suppliers should demonstrate full compliance  
12 with State water efficiency and management laws, goals, and regulations to demonstrate reasonable and  
13 beneficial use of the state's water resources.

### 14 ***Policies***

#### 15 **WR P1 Reduce Reliance on the Delta**

16 A proposed action is inconsistent with the Delta Plan if (1) one or more water suppliers<sup>18</sup> that  
17 would receive water as a result of the proposed action have failed to reduce their reliance on the  
18 Delta and adequately contribute to improved regional self-reliance; (2) that failure has  
19 significantly caused the need for the proposed action; and (3) the proposed action would have a  
20 significant adverse environmental impact in the Delta.

21 This policy covers a "proposed action" to export water from, transfer water through, or use  
22 water in the Delta.

23 For the purposes of this policy, "reducing reliance on the Delta and adequately contributing to  
24 improved regional self-reliance" means a significant reduction in net water use, or in the  
25 percentage of water used, from the Delta watershed, which may be achieved through  
26 investment in water use efficiency, water recycling, advanced water technologies, local and  
27 regional water supply projects, and improved regional coordination of local and regional water  
28 supply efforts, and at a minimum, must be achieved through compliance with existing state  
29 laws regarding water conservation, water efficiency and urban and agricultural water  
30 management planning.

---

<sup>18</sup> Water suppliers, as used in this Delta Plan, refer to both "Urban water supplier" and "Agricultural water supplier." "Urban water supplier" as used in this Delta Plan refers to both "urban retail water suppliers" and "urban wholesale water suppliers" under the Water Code. An "urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annual at retail for municipal purposes (Water Code section 10608.12(p)). An "urban wholesale water supplier" means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of potable water annually at wholesale for municipal purposes (Water Code section 10608.12(r)). "Agricultural water supplier" as used in this Delta Plan refers to both "agricultural retail water suppliers" and "agricultural wholesale water suppliers" under the Water Code. An "agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. An "agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include DWR (Water Code section 10608.12(a)). Any agricultural water supplier that provides water to less than 25,000 irrigated acres is not required to comply with SBX7 7 requirements unless sufficient funding is provided to the supplier to implement these provisions (Water Code section 10853).

1 climate change and catastrophic events. Given the Delta Reform Act mandates to improve water supply  
2 reliability for California, reduce reliance on the Delta, and improve regional self-reliance, at a minimum,  
3 all water suppliers should demonstrate full compliance with State water efficiency and management laws,  
4 goals, and regulations to demonstrate reasonable and beneficial use of the state's water resources. See  
5 Appendix P for additional detail on demonstrating compliance with the Delta Plan regarding reduced  
6 reliance on the Delta and improved regional self-reliance.

## 7 **Policies**

### 8 **WR P1 Reduce Reliance on the Delta and Improve Regional Self-Reliance**

9 The policy of the State of California is to reduce reliance on the Delta in meeting future water  
10 supply needs and that each region that depends on water from the Delta watershed shall  
11 improve its regional self-reliance. Success in achieving the statewide policy of reduced reliance  
12 on the Delta and improving regional self-reliance will be demonstrated through a significant  
13 reduction in the amount of water used, or in the percentage of water used, from the  
14 Delta watershed.

15 The intent of WR P1 is to ensure that urban and agricultural water suppliers are taking  
16 appropriate actions to contribute to the achievement of reduced reliance on the Delta by  
17 complying with the statutory requirements of SB X7 7 and other water management laws, and  
18 by implementing programs and projects that are locally cost effective and technologically  
19 feasible for urban and agricultural water suppliers to increase water use efficiency and  
20 conservation and diversify local water supply portfolios.

21 WR P1: Water shall not be exported from, transferred through or used in the Delta if (1) one or  
22 more water suppliers that would receive water as a result of the export, transfer, or use have  
23 failed to adequately contribute to reduced reliance on the Delta and improved regional self-  
24 reliance consistent with the three requirements stated below; (2) that failure has significantly  
25 caused the need for the export, transfer, or use; and (3) the export, transfer, or use would have a  
26 significant adverse environmental impact in the Delta.

27 For the purpose of Water Code section 85057.5 (a)(3), this policy covers a proposed action to  
28 export water from, transfer water through, or use water in the Delta.

29 Water suppliers that have done all of the following are contributing to reduced reliance on the  
30 Delta and improved regional self-reliance and are therefore consistent with WR P1:

31 1) Completed a current urban or agricultural water management plan which has been reviewed  
32 by DWR for compliance with the applicable requirements of Water Code Division 6,  
33 Parts 2.55, 2.6, and 2.8;

34 2) Identified, evaluated, and commenced implementation, consistent with the implementation  
35 schedule set forth in the management plan, of all programs and projects that are locally cost  
36 effective and technically feasible that reduce reliance on the Delta; and

37 3) Included in the plan, commencing in 2015, the expected outcome for measurable reduction  
38 in Delta reliance and improvement in regional self-reliance.

39 Programs and projects that reduce reliance could include, but are not limited to, improvements  
40 in water use efficiency, water recycling, stormwater capture and use, advanced water  
41 technologies, conjunctive use projects, local and regional water supply projects, and improved  
42 regional coordination of local and regional water supply efforts.



## BAY DELTA SCIENCE CONFERENCE: Checking assertions with data: Untangling factors that constrain water exports from the San Francisco Bay estuary

[November 7, 2018](#) [Maven](#) [Conferences and Seminars](#), [Science Features](#)



The Banks Pumping Plant in the South Delta (Photo by DWR)

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In recent years, media reports and



editorials have suggested that environmental regulations have made Delta outflows increasingly large, project water exports are frequently limited or even halted by regulations to protect endangered species, and that regulations designed to protect endangered species, the Delta Smelt in particular, are the principal restrictions on exports and are thus responsible for most of the water that flows from the Central Valley to San Francisco Bay. But are these assertions true? Are Delta smelt really responsible for as much as they get blamed for?

[The Bay Institute](#) studied water management practices and constraints that affect the flow of water into and through the San Francisco Bay and the Delta estuary, which is home to six imperiled fish species and water export facilities owned by the state and federal governments that serve millions of people and large expanses of agricultural land.

Using several public data sources, The Bay Institute analyzed the long-term trend in the net effect on Delta outflow of water diversions in the estuary's Central Valley watershed, and the frequency and magnitude of specific regulatory and infrastructural constraints on the two water export facilities.

Greg Reis, a scientist with [the Bay Institute](#), as well as an Information & Restoration Specialist at [Mono Lake Committee](#), gave a presentation at the 2018 Bay Delta Science Conference to discuss the results.

*"The last time people talked about water 'wasting' to Mono Lake was decades ago, so its disappointing to hear that on this side of the mountains still in the mainstream media and in Congress and various venues," he said. "That clearly is false, because we know rivers need water, estuaries need water, terminal lakes need water, and preferably in a natural pattern and volume and a somewhat natural range of variability."*

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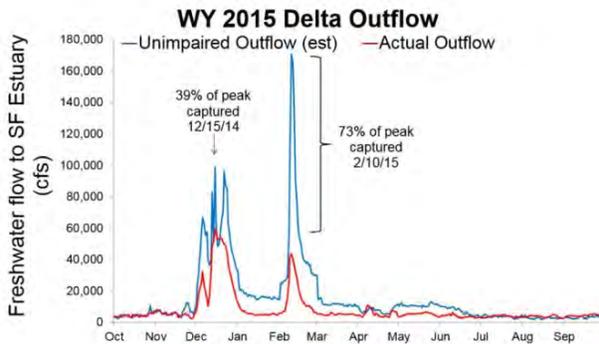
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# Assertion: Environmental regulations have made Delta outflows increasingly large

The first assertion is that the outflow from the Delta to the San Francisco Bay (and ultimately to the ocean) has become increasingly large. So in looking at unimpaired flow versus actual flow, is Delta outflow increasing or decreasing?

Mr. Reis

## Unimpaired vs. Actual Volumes



presented a chart, with the blue line showing unimpaired flow and the red line depicting actual Delta outflow; the cubic feet per second of outflow to the estuary is on the Y axis.

Unimpaired flow is defined as 'the flow that would occur if all runoff from the watershed remained in the river, without storage in reservoirs or diversions, such as irrigation, power generation, or water supply. "Unimpaired flow is an index of runoff conditions in the watershed," Mr. Reis said. "It is different than natural flow, which some people disagree about prehistoric landscape conditions. You can have debates about natural flow, but unimpaired flow is pretty much agreed upon."

For the analysis, they looked at the daily estimates of unimpaired flow, applied a daily pattern to a monthly volume, and then compared it to actual flows. "In the 2015 daily example, we're capturing a big part of the peak flows – 39% of the December peak and 73% of that February peak," he said.

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## UPCOMING EVENTS

NOV  
**26**  
Mon

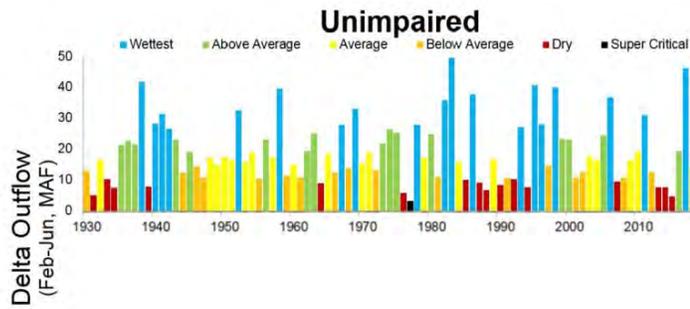
**11:00 am** WEBINAR: California-Nevada Drought-Climate-Outlook-11/? instance\_id=5086)

NOV  
**27**  
Tue

all-day ACWA 2018 Fall Conference & Exhibition @ Manchester Grand Hyatt (https://cawatelibrary.net/event/acwa-2018-fall-conference-exhibition/? instance\_id=4465)

**9:00 am** 2018 ACWA Legal Affairs Committee @ Manchester Grand Hyatt

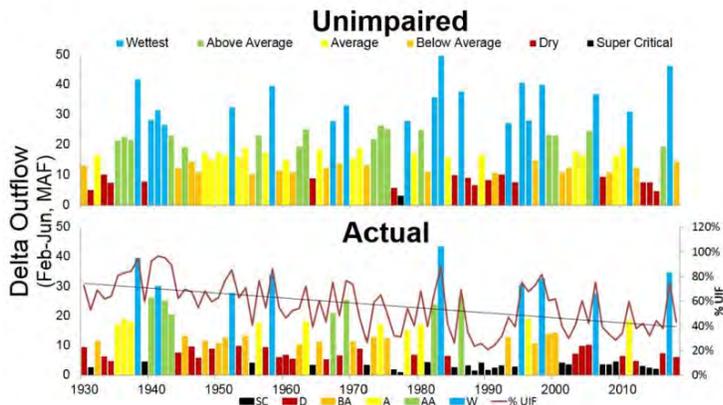
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you



compare unimpaired flow versus actual flow on an annual basis, the trend over time can be determined. "Here we have Delta outflow in the months of February through June in million acre-feet on the y axis," Mr. Reis said, noting that February through June is one of the most ecologically important as it's when most of the native fishes are in the estuary, the most protections are overlapping, and it tends to be when the most water is flowing through the system. Focusing on that critical period, they considered unimpaired flow in quintiles, and subsorting it into bins of 20% for each year type. The wettest 20% of years are in blue, then green, yellow; the dry years are brown, and the supercritical years – the driest 2% of years, are shown in black.

"Anything drier than 2015, which in the 1922-2016 record occurred twice – in 1925 and 1977, so those 2% or super-critical years are pretty rare," he said. "What did the estuary actually experience?"

He



presented a slide comparing the actual outflows (lower chart) to the unimpaired flows (upper chart), pointing out there are a lot more black bars in the actual outflow in recent years. "Since the 1995 water quality control plan, it's over 40%," he said. "Since 1967, over 40% of the years are in that driest 2% category of unimpaired flow. If you look at the red and black parts together, what would on a unimpaired basis would be about 20% of the years, but over 60% of years have actual

([https://cawaterlibrary.net/event/2018-acwa-legal-affairs-committee-cle-fall-workshop/?instance\\_id=4922](https://cawaterlibrary.net/event/2018-acwa-legal-affairs-committee-cle-fall-workshop/?instance_id=4922))

**9:30 am** State Water Resources Control Board @ Cal EPA Headquarters ([https://cawaterlibrary.net/event/state-water-resources-control-board-16/?instance\\_id=4255](https://cawaterlibrary.net/event/state-water-resources-control-board-16/?instance_id=4255))

**NOV 29**  
Thu

**12:30 pm** Data Legacy of the Recent Califo... ([https://cawaterlibrary.net/event/data-legacy-of-the-recent-california-drought/?instance\\_id=5255](https://cawaterlibrary.net/event/data-legacy-of-the-recent-california-drought/?instance_id=5255))

**DEC 3**  
Mon

all-day Legislature begins 2019-20 regul... ([https://cawaterlibrary.net/event/legislature-begins-2019-20-regular-session/?instance\\_id=4630](https://cawaterlibrary.net/event/legislature-begins-2019-20-regular-session/?instance_id=4630))

**9:00 am** Groundwater-Surface Water Workshop @ Cal EPA (<https://cawaterlibrary.net/event/groundwater-surface-water-workshop/?>)

outflows that low going to the estuary."

"If we look at a percent of unimpaired flow trend, back in the 30s and 40s compared to present day, now you get 75% only in the wettest years," he said. "We can't hold the wet years, they happen, but we're mining out the middle years and turning the middle years into dry years, and we are actually capturing more of the wet year flows as well."

So as to the first assertion: are flows increasing or decreasing, apparently they are decreasing still, he said, adding "although the caveat is that the Water Quality Control Plan has set some very basic standards to make a floor for the worst years, so we are actually getting some improvement at the bottom end, but mostly they are decreasing."

## Assertion: Project water exports are frequently limited, or even halted, by regulations to protect endangered species

Mr. Reis next presented a slide showing the primary data sources for the frequency and volume analysis; he presented another slide showing the different types of constraints:

**What really limited exports 2011-2016?**

**Primary Sources**

Frequency of export constraints:

- DWR Daily Operations listserv (since Jan 2015)
- DOSS Meeting Summaries and Annual Reports
- SWG Notes, Recommendations, and Determinations

Volumes of export constraint:

- Flow data from USGS, DWR, USBR
- Many others (SWRCB, BIOps, ACOE...)

**What really limited exports 2011-2016?**

- Water Quality Control Plan (WQCP)**
  - Hydraulic Salinity Barrier for M & I & Ag (HSB)
  - Fish and Wildlife protections
- Endangered Species Act (ESA)**
  - Anadromous Fishes RPA
  - Smelt RPA
- System Capacity**
  - Physical capacity (pumps, canals, storage, temporary reductions due to maintenance)
  - Permit capacity (ACOE/WR permits)

He noted that the various sources give various answers to what limited exports on any given day, so he had to interpolate for the days that were missing and figure it out from flows and regulations. The result was a daily analysis from 2011 to 2016, with the major categories of constraints being the Water Quality Control Plan, the Endangered Species Act, and system capacity.

The Water Quality Control Plan has two different elements: the hydraulic salinity barrier necessarily for human uses and fish and wildlife protections. "We used a layered approach," Mr. Reis said. "You need the hydraulic salinity barrier to keep the Delta fresh for human uses to even have exports, so that came first. Then we layered on the

instance\_id=5182)

DEC  
**4**  
Tue

**10:00 am**  
WEBINAR:  
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([https://cawaterlibrary.net/event/webinar-understanding-californias-water-efficiency-legislation-3/?instance\\_id=5188](https://cawaterlibrary.net/event/webinar-understanding-californias-water-efficiency-legislation-3/?instance_id=5188))

DEC  
**5**  
Wed

**8:30 am** Water Year 2019: Feast or Famine?  
([https://cawaterlibrary.net/event/water-year-2019-feast-or-famine/?instance\\_id=5215](https://cawaterlibrary.net/event/water-year-2019-feast-or-famine/?instance_id=5215))

DEC  
**6**  
Thu

all-day  
Central Valley Regional Water Qu... @ Central Valley Regional Water Quality Control Board  
([https://cawaterlibrary.net/event/central-valley-regional-water-quality-control-board-2/?instance\\_id=4417](https://cawaterlibrary.net/event/central-valley-regional-water-quality-control-board-2/?instance_id=4417))

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MORE WAYS TO STAY IN TOUCH



fish and wildlife protections, and then under the Endangered Species Act, anadromous fish and the smelt Reasonable and Prudent Alternatives (RPAs) under the biological opinions. And we separated out those categories."

Then system capacity is physical capacity such as full storage, canal capacity, pump capacity, or maintenance shutdowns, he said.

He

Timing of Ecosystem Protections that may constrain exports

Export Constraint Category	Source	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
HSB <sup>1</sup> and Fish & Wildlife	WQCP <sup>2</sup>	2015, 2016	2016	2015		2014, 2015	2014, 2015	2014, 2015	2014, 2015	2014, 2015	2014, 2015	2015	2015
Endangered Species	AF <sup>3</sup>					2015	2014	2012	2012				
	DS <sup>4</sup>			2015	2016								2011

<sup>1</sup>HSB = hydraulic salinity barrier

<sup>2</sup>WQCP = Bay-Delta Water Quality Control Plan [31];

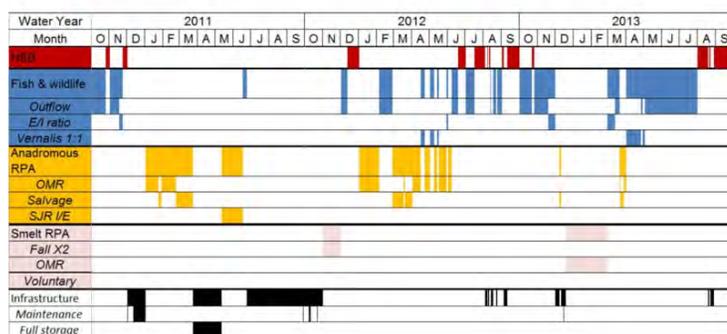
<sup>3</sup>AF = Endangered Species Act RPA for Anadromous Fishes [19];

<sup>4</sup>DS = Endangered Species Act RPA for Delta Smelt [18]

presented a slide showing the temporal analysis which examined what days had limiting factors from the three main categories: the Water Quality Control Plan in blue; the RPAs from the biological opinions in orange for anadromous fish and in pink for Delta smelt. He pointed out that not all of these factors are in effect all year long; for example, the anadromous fish RPA could be controlling November through June potentially, and Delta smelt September through June potentially. He also noted this is not always in every year, but those are the times of the year they could be controlling things.

He

What really limited exports 2011-2013?



presented a slide of the daily analysis of what was controlling for the years 2011 – 2013. "Clearly fish and wildlife objectives (shown in blue) was not controlling all year, but you can see the times it was," he said. "The hydraulic salinity barrier is at the top in red; in 2011 was a pretty wet year, 2012 reservoirs were still pretty full, so that wasn't controlling that much. There was a lot of water to move across the Delta and that means the anadromous fish and the Delta smelt RPA

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did a lot of controlling and down at the bottom. There were a lot of capacity constraints in 2011 because of the wet year."

"I think of these RPAs as kind of like speed limits on how much water you can take across the Delta," he added. "When there's a lot of water there to move, it's setting a limit and saying this is the limit at which you can do it, and in the drier years, you never even hit those limits some times."

Mr. Reis then presented the next three years of the analysis from 2014-2016, noting that the drought was pretty deep during that time and so there were no infrastructure limits that were hit, and that the hydraulic salinity barrier (shown in reddish brown) was controlling most of the time.

He pointed out that in some years like 2014, the smelt controls didn't happen at all. "So contrary to what news articles you might have been reading in 2014, Delta smelt didn't control anything that year," he said.



**Fiorini suggesting the Department of Water Resources withdraw consistency determination (Full coverage)**

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November 16, 2018 (702)

What really limited exports 2011-2013?

Water Year	2011-16	2011	2012	2013	2014	2015	2016
<b>HSB (WQCP)</b>	<b>35%</b>	<b>4%</b>	<b>21%</b>	<b>16%</b>	<b>62%</b>	<b>56%</b>	<b>48%</b>
<b>Fish &amp; Wildlife (WQCP)</b>	<b>29%</b>	<b>15%</b>	<b>26%</b>	<b>55%</b>	<b>30%</b>	<b>28%</b>	<b>20%</b>
Outflow	18%	11%	20%	40%	18%	5%	16%
E/I Ratio	2%	2%	1%	7%	1%	0%	0%
Vernalis 1:1	4%	0%	5%	8%	3%	1%	4%
TUC	5%	0%	0%	0%	7%	21%	0%
CVPIA	0.3%	2%	0%	0%	0%	0%	0%
<b>Anadromous Fish RPA (ESA)</b>	<b>17%</b>	<b>32%</b>	<b>31%</b>	<b>4%</b>	<b>8%</b>	<b>7%</b>	<b>20%</b>
OMR	11%	13%	23%	1%	8%	5%	13%
Salvage Density	4%	9%	9%	2%	0%	1%	1%
SJR IE	3%	10%	0%	0%	0%	0%	7%
<b>Smelt RPA (ESA)</b>	<b>6%</b>	<b>0%</b>	<b>8%</b>	<b>19%</b>	<b>0%</b>	<b>0%</b>	<b>7%</b>
Fall X2	1%	0%	8%	0%	0%	0%	0%
OMR	4%	0%	0%	19%	0%	0%	7%
<b>Voluntary Reduction (ESA)</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>9%</b>	<b>4%</b>
<b>System Capacity</b>	<b>11%</b>	<b>49%</b>	<b>13%</b>	<b>6%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
Maintenance	1%	6%	1%	0%	0%	0%	0%
Storage Capacity	2%	13%	0%	0%	0%	0%	0%
Pump/Canal Capacity	8%	29%	12%	6%	0%	0%	0%

Mr. Reis then

presented a tabular display of the last chart, highlighting the main categories in yellow. "If you look at that left column, the hydraulic salinity barrier controlled about 35% of the time, the water quality control protections for fish and wildlife about 29% of the time, anadromous fish RPAs 17% of the time, smelt about 6% of the time, and system capacity 11% of the time," he said. "Clearly there is variation between years, but this is a pretty good representative set of years. We had a wet year in there and then some dry years. So Delta smelt weren't ending the world there with only 6% of time controlling."

**Assertion: Regulations designed to protect endangered species, and Delta Smelt in particular, are the principal**

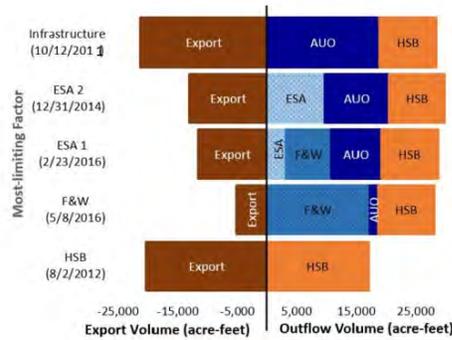
# restrictions on exports and are thus responsible for most of the water that flows from the Central Valley to San Francisco Bay.

The third assertion is a question of volumes of water. Mr. Reis explained that even if something is controlling, on a certain day, and that protection is removed, it doesn't necessarily mean that water is freed up; there is something else that will be controlling.

"So we parsed out the



What limited export volumes 2011-2016?



volumes on each day," he said, presenting a slide showing results for five different individual days. "There's a center bar with export volumes on the left, and outflow of the Delta to the Bay on the right. The graphic shows five different days from our analysis as examples with what was controlling on that day named above the date. On the right side of the graph are the acronyms, and whatever is closest to the bar was controlling that day."

He focused on the information for February 23, 2016 (the third from the top), noting that the Endangered Species Act and Fish and Wildlife were the controlling factors; the stipled area represents the export capacity.

"So if you were to eliminate the ESA protections and move that water over to the left side or the export side, the next thing to control would be fish and wildlife, and if you were to eliminate the water quality control plan protections and move that volume over to the left side, you would max out the export pumps and not be able to take any of the additional uncaptured outflow (AUO)," said Mr. Reis. "If you expanded the size of the export pumps or built new tunnels, then you can start digging into the AUO but we did not look into that analysis. The HSB, the hydraulic salinity barrier, is assumed to be necessary for exports to exist in the first place, so we didn't parse that one out as far



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November 21, 2018 (628)



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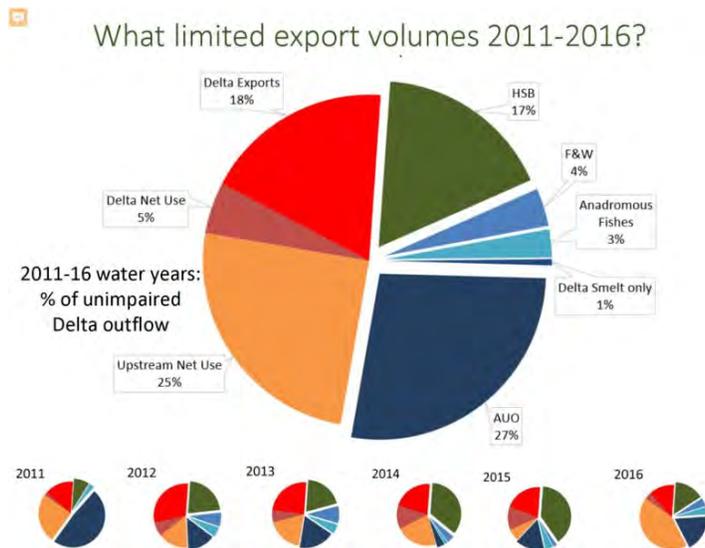
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as a limit on exports, but we did quantify it."

He  
then



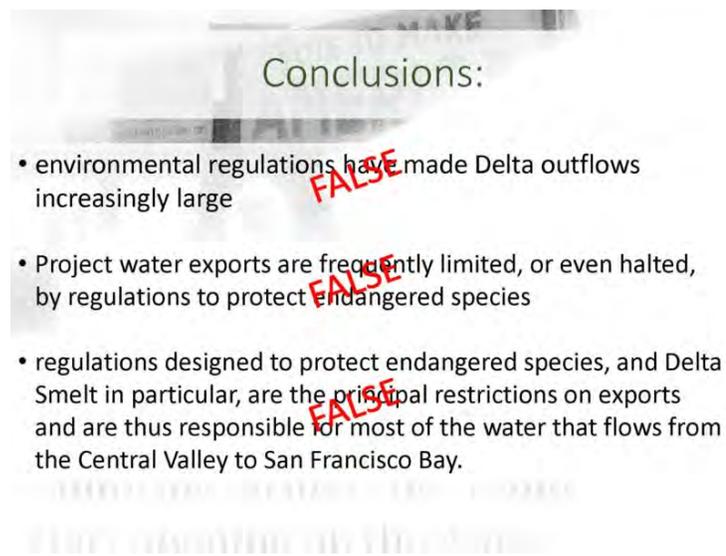
presented the results from the volumetric analysis in a pie chart, with the large chart showing the results for all the years in aggregate, and the bottom showing the pie chart for each individual year. He noted that the Delta smelt is parsed out for the larger pie chart, but in the pie charts for the individual years, it is lumped in with the ESA total amount.

"As you can see, the amount attributed to Delta smelt is small – just 1%; it's actually about .6% if you don't do the rounding. Anadromous fish is 3% and Fish and Wildlife is about 4%," he said. "The hydraulic salinity barrier was responsible for 17% of the watershed runoff being used to repel salt and Delta exports; Delta exports were 18%; Delta net use 5%; upstream net use was 25%; and additional uncaptured outflow was 27%. I should mention, some of the additional uncaptured outflow is required by the water quality control plan, but if it exceeded the export capacity, we didn't quantify that in our analysis. We're looking at the existing capacities and what actually occurred. We didn't reoperate reservoirs or do any modeling, it was just what actually happened."

Mr. Reis acknowledged there is some uncertainty. For their analysis, they overestimated the key things such as the anadromous fish, the smelt, and the water quality control plan, so those are maximum numbers; underestimated volumes are the HSB, hydraulic salinity barrier and infrastructure.

**In conclusion ...**

He  
then  
gave  
his



conclusions. "Are Delta outflows increasingly large? We found they are not. Project water exports are frequently eliminated or halted is not true, and Delta smelt really being responsible for most of the water going out to the Bay is also not true."

**Question: For the hydraulic salinity barrier, there are two reasons for that. There's a PPIC report on a similar subject broken out. There are the flows you need going out in order to have the exports, and the flows you need going out in order to keep the salinity ok for some of the urban and agricultural uses of the Delta. Do you have any comment on that?**

"We were doing our study at the same time that Greg Gartrell and PPIC were doing theirs, and once that study came out, I pasted in Greg's numbers to compare," said Mr. Reis. "I was starting to get negative numbers at times where his requirement for outflow was higher than the actual outflow on that day, so I didn't take the time to try and figure that out. I think his numbers were more modeled than ours, and outflow is a modeled number too. There's about a million more acre-feet that Greg found than what we have in the hydraulic salinity barrier, so we were conservative on that, and we used a number that the water board was using, 4800 cfs as kind of a long-term average, and or whatever actually observed on that day if that was what was occurring."

(Jeanette Howard from the Nature Conservancy and Jonathan Rosenfield at The Bay Institute also contributed to this work.)

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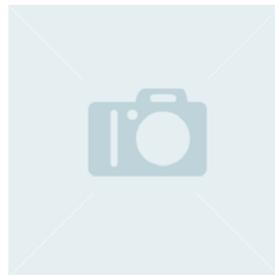
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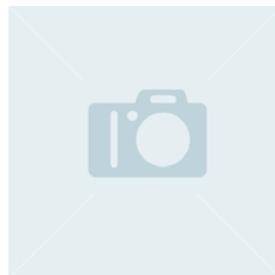
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# MAVEN'S NOTEBOOK

*The diary of a confessed obsessive-compulsive California water news junkie*

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**Appendix 3.E, Pile Driving Assumptions for the Proposed Action**

**SCDA-82 Pile Driving**

Table 3.E-1. Physical Location of Pile Driving

Facility/ Structure	Location	Lat/long	On land (distance to water in ft) or in water	River depth (ft) <sup>1</sup>	River width (ft)	Width of in-river constructio n (ft)	Length of construc- tion along river bank (ft)	Proportio n of river available for passage	Straight line distance to river bend (furthest upstream/downstre am location) (ft)	Distance to concurr ent pile driving sites (ft) <sup>2</sup>
<b>Intake 2</b>										
Intake 2 cofferdam	Sac River (RM 41.1)	38.40541, -121.51452	In water	-14	700	60	2,000	95%	6,500-12,000	2,000
Intake 2 foundation	Sac River (RM 41.1)	38.40541, -121.51452	In cofferdam 40-90 ft from open water	-14	700	NA	1,667	NA	6,500-12,000	2,000
<b>Intake 3</b>										
Intake 3 cofferdam	Sac River (RM 39.4)	38.38209, -121.51991	In water	-25	500	60	1,600	93%	1,500-4,500	1,600
Intake 3 foundation	Sac River (RM 39.4)	38.38209, -121.51991	In cofferdam 40-90 ft from open water	-25	500	NA	1,373	NA	1,500-4,500	1,600
<b>Intake 5</b>										
Intake 5 cofferdam	Sac River (RM 36.8)	38.35057, -121.53302	In water	-14	600	60	2,000	94%	4,500-7,500	2,000
Intake 5 foundation	Sac River (RM 36.8)	38.35057, -121.53302	In cofferdam 40-90 ft from open water	-14	600	NA	1,667	NA	4,500-7,500	2,000
<b>Barge Landings</b>										
Dock piles	IF barge	38.28106, -121.49816	In water	-11	265	50	300	81%	1,400-2,700	300

Facility/ Structure	Location	Lat/long	On land (distance to water in ft) or in water	River depth (ft) <sup>1</sup>	River width (ft)	Width of in-river constructio n (ft)	Length of construc- tion along river bank (ft)	Proportio n of river available for passage	Straight line distance to river bend (furthest upstream/downstre am location) (ft)	Distance to concurren t pile driving sites (ft) <sup>2</sup>
	landing									
Dock piles	Bouldin Is. barge landing	38.08762, -121.54505	In water	-11 to -18	980	50	300	95%	1,800-2,900	300
Dock piles	Venice Is. barge landing	38.06630, -121.54130	In water	-19 to -36	1,030	50	300	95%	2,000-4,700	300
Dock piles	Mandev ille Is. barge landing	38.04264, -121.53177	In water	-5 to - 47	760	50	300	93%	6,500-8,500	300
Dock piles	Bacon Is. barge landing	38.00392, -121.54343	In water	-8 to - 28	340	50	300	85%	1,200-1,800	300
Dock piles	Victoria Is. barge landing	37.91087, -121.56185	In water	-7	433	50	300	88%	2,200-3,200	300
Dock piles	CCPP barge landing	37.85505, -121.56435	In water	-4 to - 10	285	50	300	82%	705-720	300
<b>Clifton Court Forebay</b>										
Embankment cofferdams	CCF	37.83204, -121.57494	In water	-3	10,500 (width of CCF)	25	20,800	NA	NA	Unknown

Facility/ Structure	Location	Lat/long	On land (distance to water in ft) or in water	River depth (ft) <sup>1</sup>	River width (ft)	Width of in-river constructio n (ft)	Length of construc- tion along river bank (ft)	Proportio n of river available for passage	Straight line distance to river bend (furthest upstream/downstre am location) (ft)	Distance to concurr ent pile driving sites (ft) <sup>2</sup>
Divider wall	CCF	37.83961, -121.57514	In water	-3	10,500 (width of CCF)	<5% of total surface area of CCF	9,800	NA	NA	Unknown
NCCF siphon	CCF	37.83257, -121.59218	In cofferdam 20-30 feet from open water	-17	600 (width of entran ce channe l)	300	150	50%	NA	300
<b>HOR Gate</b>										
HOR gate cofferdams	Old River 400 ft from SJR junction	37.80798, -121.32912	In water	-6	150	75	50-100	50%	700-1,500	100
HOR gate foundation	Old River 400 ft from SJR junction	37.80798, -121.32912	In cofferdam 20-30 feet from open water	-6	150	NA	30-80	NA	700-1,500	80
Notes NA = Not applicable <sup>1</sup> Depths at sites other than barge landings represent channel bottom elevation based on NAVD 88, from design drawings in Appendix 3.C. Depths at barge landings are based on NOAA charts 18661 and 18662 which show feet at mean lower low water, based on WGS84. <sup>2</sup> Pile drivers may operate concurrently within this range.										

Table 3.E-2. Pile Driving Details

Structure	Pile Type/Sizes	Total Piles per site	# of concurrent pile drivers per site	Piles per day	Strikes per pile (impact driving only)	Total strikes per day	Sound Attenuation Devices	Expected acoustic dampening in dB
<b>Intake 2</b>								
Intake 2 cofferdam	Sheet piles	2,500	4	60	210 <sup>1</sup>	12,600	None	NA
Intake 2 foundation	42-inch steel piles	1,120	4	60	1,500	90,000	Dewatering or bubble curtains, if feasible/practicable	5 dB
<b>Intake 3</b>								
Intake 3 cofferdam	Sheet piles	2,500	4	60	210 <sup>1</sup>	12,600	None	NA
Intake 3 foundation	42-inch steel piles	850	4	60	1,500	90,000	Dewatering or bubble curtains, if feasible/practicable	5 dB
<b>Intake 5</b>								
Intake 5 cofferdam	Sheet piles	2,500	4	60	210 <sup>1</sup>	12,600	None	NA
Intake 5 foundation	42-inch steel piles	1,120	4	60	1,500	90,000	Dewatering or bubble curtains, if feasible/practicable	5 dB
<b>Barge Landings</b>								
Dock piles	24-inch steel piles	107	4	60	315 <sup>1</sup>	18,900	None	NA
<b>Clifton Court Forebay</b>								
Embankment cofferdams	Sheet piles (AZ-28-700)	5,125	4	60	210 <sup>1</sup>	12,600	None	NA
Divider wall	Sheet piles (AZ-28-700)	5,169	4	60	210 <sup>1</sup>	12,600	None	NA
NCCF siphon	14-inch concrete or steel piles	2,160	2	30	1,050	31,500	Dewatering or bubble curtains, if feasible/practicable	5 dB

Structure	Pile Type/Sizes	Total Piles per site	# of concurrent pile drivers per site	Piles per day	Strikes per pile (impact driving only)	Total strikes per day	Sound Attenuation Devices	Expected acoustic dampening in dB
<b>HOR Gate</b>								
HOR gate cofferdams	Sheet piles (AZ-28-700)	550	1	15	210 <sup>1</sup>	3,150	None	NA
HOR gate foundation	14-inch steel pipe or H-piles	100	1	15	1,050	15,750	None	NA
Notes								
<sup>1</sup> Assumes 70% of pile can be driven using vibratory driving followed by impact driving to drive the remainder of the pile.								
General: All assumptions will be refined as part of next engineering phase when site-specific geotechnical data are collected.								

Table 3.E-3. Pile Driving Acoustics.

Structure (one pile driver only)	Distance to 206 dB SPL Injury Threshold (feet)	Distance to Cumulative 187 dB SEL Injury Threshold or Effective Quiet (feet) <sup>1</sup>	Distance to 150 dB RMS Behavioral Threshold (feet)	Number and Timing of Construction Seasons	Timing of Pile Driving	Duration of Pile Driving (days)	Preferred period within that work window <sup>2</sup>
<b>Intake 2</b>							
Intake 2 cofferdam	30	2,814	13,058	Year 8	Jun-Oct	42	Aug-Sep
Intake 2 foundation (no attenuation)	46	3,280	32,800	Year 9	Jun-Oct	19	Aug-Sep
Intake 2 foundation (with attenuation)	20	1,522	15,226	Year 9	Jun-Oct	19	Aug-Sep
<b>Intake 3</b>							
Intake 3 cofferdam	30	2,814	13,058	Year 7	Jun-Oct	42	Aug-Sep
Intake 3 foundation (no attenuation)	46	3,280	32,800	Year 8	Jun-Oct	14	Aug-Sep
Intake 3 foundation (with attenuation)	20	1,522	15,226	Year 8	Jun-Oct	14	Aug-Sep
<b>Intake 5</b>							
Intake 5 cofferdam	30	2,814	13,058	Year 5	Jun-Oct	42	Aug-Sep
Intake 5 foundation (no attenuation)	46	3,280	32,800	Year 6	Jun-Oct	19	Aug-Sep
Intake 5 foundation (with attenuation)	20	1,522	15,226	Year 6	Jun-Oct	19	Aug-Sep
<b>Barge Landings</b>							
Dock piles	46	1,774	9,607	1 (Year 1 or 2)	Aug-Oct	2	Aug-Sep

Structure (one pile driver only)	Distance to 206 dB SPL Injury Threshold (feet)	Distance to Cumulative 187 dB SEL Injury Threshold or Effective Quiet (feet) <sup>1</sup>	Distance to 150 dB RMS Behavioral Threshold (feet)	Number and Timing of Construction Seasons	Timing of Pile Driving	Duration of Pile Driving (days)	Preferred period within that work window <sup>2</sup>
<b>Clifton Court Forebay</b>							
Embankment cofferdams	30	2,814	13,058	1 (Year 5)	Jul-Nov	85	Aug-Oct
Divider wall	30	2,814	13,058	1 (Year 4)	Jul-Nov	86	Aug-Oct
NCCF siphon (no attenuation)	46	1,774	9,607	2 (Years 2 and 3)	Jul-Nov	72	Aug-Oct
NCCF siphon (with attenuation)	20	823	4,458	2 (Years 2 and 3)	Jul-Nov	72	Aug-Oct
<b>HOR Gate</b>							
HOR gate cofferdams	30	2,063	13,058	2 years	Aug-Nov	19	Aug-Oct
HOR gate foundation (no attenuation)	46	1,774	9,607	2 years	Aug-Nov	4	Aug-Oct
HOR gate foundation (with attenuation)	20	823	4,458	2 years	Aug-Nov	4	Aug-Oct
Notes							
<sup>1</sup> Calculated injury distance is governed by the distance to effective quiet (150 SEL). Calculation assumes that single strike SELs <150 dB do not accumulate to cause injury. Accordingly, once the distance to the cumulative injury threshold exceeds the distance to effective quiet, increasing the number of strikes does not increase the presumed injury distance.							
<sup>2</sup> To the extent feasible, pile driving will occur within this timeframe. In all circumstances, pile driving will be limited to the period specified in column 6.							

noise. The effects are expected to range from behavioral modifications and increased stress responses, to injury and mortality dependent on the proximity and duration of the exposure.

#### **2.5.1.1.1.4.3 Green Sturgeon Exposure and Risk**

Detailed timing and spatial occurrence of sDPS green sturgeon presence has previously been described in Section 2.4 Environmental Baseline. As discussed in those sections, juvenile and sub-adult sDPS green sturgeon may be present during any month of the year throughout the waters of the Delta, whereas adult green sturgeon are less widespread, primarily occurring in the waters of the north Delta along the principal migratory pathway between the ocean and upstream spawning habitats in the Sacramento River from late winter and early spring months into the late summer and early fall months each year. As the locations for the proposed barge landings are spread widely across the Delta, the potential for exposure of juvenile, sub-adult, and adult sDPS green sturgeon to the pile-driving-induced acoustic effects associated with their construction is tempered only by the July 1 through August 31 in-water construction period established for that effort. NMFS therefore expects that the acoustics effects of pile driving at the barge landing locations will adversely affect a small proportion of juvenile, sub-adult, and adult green sturgeon.

#### **2.5.1.1.1.2 Barge Traffic**

According to the PA description in the BA, contractors are expected to use barges to deliver tunnel boring machine (TBM) components to TBM launch sites. Barges may also be used to transport other heavy or bulky equipment or materials to or from those sites. Barge landings will therefore be constructed at each TBM launch shaft site for loading and unloading construction equipment, materials, fill, and tunnel spoils. A total of seven barge landings are currently proposed in the PA (BA Appendix 3.A Map Book for the Proposed Action) at the following locations:

- Adjacent to Proposed Intermediate Forebay (on Snodgrass Slough north of Twin Cities Road)
- South Bouldin Island (on Little Potato Slough)
- South Venice Island (on San Joaquin River)
- East Mandeville Island (on San Joaquin River at junction with Middle River)
- North Bacon Island (on Middle River)
- Northwest Victoria Island (on Old River)
- Clifton Court Forebay (Old River at junction with West Canal)

In addition to the seven barge landing locations described above, Reclamation and its partners have indicated that an additional barge landing location was identified by the applicant during consultation and may be built at the contractor's discretion on the Sacramento River at NDD Intake 2.

Based on information provided by the applicant, the two main destinations are the barge landings at CCF and Bouldin Island.

Barge operations associated with these landings are described as follows:

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- From June 1 through October 31, barge traffic may travel from all three origins (Stockton, San Francisco, and Antioch).
- From November 1 through February 28, barge traffic will be limited to travel from Port of Stockton to Bouldin Island.
- From March 1 through May 31, barge traffic will be restricted to move only critical heavy construction equipment in the San Joaquin River.
- Barges will be commercial vessels propelled by tugboats. Barge sizes have not been finalized, but are expected to be approximately 200- to 250-feet-long and 50-feet-wide with a draft of 6 to 12 feet. Commercial barge operators on the Sacramento River are required to operate in compliance with navigational guidelines.
- Barges will be required to use existing landings where possible and maintain a minimum waterway width greater than 100 feet (assuming maximum barge width of 50 feet).
- Barge operations will occur only during the work week and will not occur on weekends.
- Barges and tugs will travel at 5 knots loaded and 8 knots empty through Delta waterways and San Francisco Bay estuary.
- Each landing will be in use during the entire construction period at each location (5 to 6 years). All landings will be removed at the end of the PA construction period.
- Barges are expected to be used for delivery of TBM components and may also be used for transport of precast tunnel segment liner sections, reusable tunnel material (RTM), crushed rock and aggregate, etc.; pile-driving rigs and barge-mounted cranes; suction dredging equipment; post-construction underwater debris removal; and other activities.
- According to information provided in the PA, approximately 5,530 barge trips are projected to carry tunnel segment liners from ports in San Francisco, Antioch, and Stockton to two primary landings of CCF and Bouldin Island via the Sacramento and San Joaquin rivers and adjacent waterways. This averages to approximately four one-way trips per day for up to 5.5 years to each of the two landing locations during the June 1 to October 31 work window, with an equal distribution from the ports of origin (i.e., one third of the trips originate, respectively, from the Port of Stockton, Port of Antioch, and San Francisco). During the November 1 to February 28 period, up to four trips per day will be made from the Port of Stockton to Bouldin Island landing. From March 1 to May 31, only those trips deemed absolutely necessary to transport critical materials to Bouldin Island will be made from the Port of Stockton. During the period from November 1 to May 31, no trips will originate from the ports in San Francisco or Antioch. The assumed number of trips to CCF is 729 (one-way) and to Bouldin Island is 1115 (one-way). This information is shown in Table 2-33.
- Because barges may also be used for transport of bulk materials to the other landings as described above, a total of 9,400 one-way barge trips are projected as a conservative assumption (i.e., a greater number of trips is not expected to occur) for transport of all materials required by the PA. Number of trips and anticipated extent of use for secondary locations are shown in Table 2-34.

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- To protect aquatic habitat and listed fish species, the barge operations plan (AMM7) will require barges and towing vessels to comply with standard navigation and operating rules to avoid or minimize physical disturbances and water quality impacts in the navigable waterways of the Delta. Where avoidance is not possible, the plan will include provisions to minimize effects as described in the BA in Appendix 3.F General Avoidance and Minimization Measures, Section 3.F.2.7.4 Environmental Training and Section 3.F.2.7.5 Dock Approach and Departure Protocol.

Table 2-33. Barge Route and Operation Assumptions Provided by DWR for the Three Anticipated Barge Origin Locations and Two Primary Landing Locations.

Barge Origin	Barge Landing Location	Estimated One-Way Distance (miles)	Number of Trips for Route (Assume 1/3 of trips from each Origin)
San Francisco	Bouldin Island	75.0	1115
Stockton	Bouldin Island	18.5	1115
Kie-Con (Antioch)	Bouldin Island	14.2	1115
San Francisco	Clifton Court	93.6	729
Stockton	Clifton Court	37.1	729
Kie-Con (Antioch)	Clifton Court	32.8	729

Table 2-34. Barge Operation and Use Assumptions Provided by DWR for the Secondary Landing Locations.

Barge Landing Location	Number of One-Way Trips to Landing	Assumptions for Use
Intermediate Forebay	435	This site is near major highway so most if not all segment, fill, material, and equipment deliveries will be trucked in. Dock would be of limited use. One trip every five days.
Venice Island	500	No road access. This site may be used for 6 months of geotechnical investigations and 12 months' construction of potential emergency access shaft and safe haven; 100 barge trips total for equipment deliveries; 400 to build emergency access and safe havens.
Mandeville Island	400	No road access. This site may be used for 12 months of geotechnical investigations and 18 months' construction of potential emergency access shaft and safe haven; 300 trips to build emergency construction access and safe haven; 100 barge trips total for equipment deliveries.
Bacon Island	2150	Road access is available. Unloading facility will be used for months for geotech investigations, 12 months to build retrieval pad, 24 months to build retrieval shaft and safe havens; 1400 barge trips for construction of retrieval pad; 200 trips for equipment deliveries and TMB removal; 600 trips for emergency construction access and safe haven.
Victoria Island	375	Road access is available. Unloading facility will be used for 24 months to build retrieval shafts and safe havens; 300 trips for construction of emergency access and safe havens; 75 barge trips total for equipment deliveries.

NMFS used the above information provided by the applicant to develop assumptions related to barge traffic in determining effects to listed species.

Because water depth in the Old River corridor to CCF is limited to 10 feet (i.e., the controlling depth at mean lower low water), vessels should not have a deeper draft than 10 feet (with a clearance of 2 feet from the bottom). The assumed length of tug boats is 65 to 100 feet with a beam of approximately 35 feet and a draft of approximately 6 to 8 feet. NMFS assumes that propeller disc diameter is approximately 70 percent of the draft, thus propeller discs will be approximately 50 to 70 in. in diameter, which corresponds to the dimensions for typical tugs operating in the Delta and San Francisco Bay. Tugs in the San Francisco Bay and Delta typically use shrouded propellers (e.g., Kort nozzles) that direct the thrust of the propeller jet in a confined cone providing more maneuverability, but potentially a more confined and longer lasting jet of propeller wash.

Based on an assumed velocity of 5 to 8 knots, a barge trip from the San Francisco port to the furthest landing location at CCF and back (187 miles round trip) can take upwards of 24 hours. NMFS therefore assumes that there is potential for barge operations to occur throughout a 24-hour period each day of the work week.

Based on the information provided by the applicant NMFS assumes that approximately 5,530 one-way trips will originate from one of the three origin locations and terminate at one of the two main barge landing locations at Bouldin Island or CCF throughout the construction phase

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of the PA. The assumed number of one-way trips to CCF is 2,185 and to Bouldin Island is 3,344. It is assumed that there will be four trips to each of these barge landings per day and four returning trips back to the port of origin for a total of 16 trips per day combined for both sites during the June 1 through October 31 period. From November 1 through February 28, barge trips will only go between the Port of Stockton and Bouldin Island, with the expectation that there will be 4 round trips per day (8 one way trips total). From March 1 through May 31, trips will be less frequent and limited to those deemed absolutely necessary to move critical equipment and materials that cannot be moved by land. Based on the estimated barge traffic information provided by the applicant, this results in 1,672 days of barge travel to Bouldin Island and 1,093 days of barge travel to CCFB.

During the 5 to 6 years of constructing the tunneled conveyance and other facilities, it is projected that up to 9,400 barge trips may be added to the daily vessel traffic in the action area. This is estimated based on an anticipated additional 3,900 one-way trips to the secondary locations show in Table 2-34. These trips will occur during the June 1 through October 31 period spread over the time of constructing the tunneled conveyance and other facilities. Assuming that the 3,900 one-way trips and the required return trips (for a total of 7,800 one-way trips) are distributed over the five landing locations throughout a 5-year period, the increase in traffic to four of these landings results in approximately one trip per day per landing. Only Bacon Island will require four trips per day during the June 1 through October 31 time period to meet its projected total of 2,150 one-way trips in the 5-year construction period.

Vessels originating from San Francisco will have to transit the middle and north San Francisco Bay regions, San Pablo Bay, the Carquinez Strait, Suisun Bay, and then either follow the Sacramento or Stockton deep water ship channels (DWSC) to their terminal barge landing locations. Sites located adjacent to the NDD locations will have to follow the Sacramento River channel upstream of Rio Vista. Barge landing sites located at Snodgrass Slough, Venice Island, or Bouldin Island will require barges and tugs to move through the Stockton DWSC from Antioch to approximately Webb Point on the San Joaquin River (RM 22). Barges destined for Snodgrass Slough will have to navigate upriver through the Mokelumne River system (likely the North Fork of the Mokelumne River). Barges destined for Bouldin Island will enter Potato Slough from the San Joaquin River at RM 22. Barges destined for the Venice Island location will continue up the Stockton DWSC to Prisoners Point (RM 25) and then move into the Venice Reach. Barge traffic destined for either Mandeville Island or Bacon Island will move upriver in the Stockton DWSC to Middle River, then move southwards in Middle River to the barge landing locations. Barge traffic destined for either Victoria Island or the CCF locations will move through the Stockton DWSC to Old River, and then move southwards in Old River to those barge landing locations.

Vessels originating from the Port of Antioch will transit either the Sacramento DWSC or the Stockton DWSC. Routes are essentially the same as those barges originating from San Francisco, except that barge traffic destined for NDD locations may either go upstream in the Stockton DWSC and access the Sacramento DWSC via Threemile Slough (RM 15) or go back downstream and enter the Sacramento DWSC via Broad Slough.

Vessels originating from the Port of Stockton will use the Stockton DWSC to access the different barge landing sites at the previously mentioned navigation points.

### 2.5.1.1.1.2.1 Acoustic Effects of Barge and Tugboat Traffic

Barge and tugboat traffic will create additional sources of anthropogenic noise in the aquatic environment. This will be an acoustic-related stressor that can result in negative impacts to exposed aquatic organisms. Ships under power produce a substantial amount of mechanical- and flow-induced noise from power plant, propeller, and hull turbulence. Measurements of sound intensity from commercial shipping have shown sound levels up to approximately 180-dB (ref. 1  $\mu$ Pa) at the point source (1 meter from ship) (Kipple and Gabriele 2007). This level of noise will drop off by 40-dB at 100 yards away and approximately 53-dB lower at one quarter mile (Kipple and Gabriele 2007). The narrow confines of channels in the Delta region would indicate that the elevated noise levels generated by the passage of commercial vessels such as tugboats would extend essentially from bank to bank in the San Joaquin or Sacramento rivers, thus subjecting all fish within the confines of the channel to anthropogenic-produced noise conditions. The relatively rapid passage of the barge and tugboat past a given point will somewhat attenuate these effects by decreasing the duration of the elevated sound levels, but some temporary effects can be anticipated to occur, depending on the proximity of the exposed fish to the sound source.

The presence of underwater anthropogenic noise, such as that originating with shipping, may adversely affect a fish's ability to detect predators, locate prey, or sense their surrounding acoustic environment (Slabbekoorn et al. 2010; Radford et al. 2014). Other species of fish have been shown to respond to recorded ambient shipping noise by either reacting more slowly to predators, thus increasing their susceptibility to predation (Simpson et al. 2015; Simpson et al. 2016), or becoming hyper-alert and reacting more quickly to a visual predator stimulus, causing them to cease feeding and hide (Voellmy et al. 2014b). Voellmy et al. (2014a) states that elevated sound levels could affect foraging behavior in three main ways:

- Noise could act as a stressor, decreasing feeding behavior directly through reduced appetite or indirectly through a reduction in activity and locomotion and alterations to the cognitive processes involved in food detection, classification, and decision making;
- Noise could act as a distracting stimulus, diverting an individual's limited amount of attention from their primary task to the noise stimuli that have been added to the environment;
- Noise could mask crucial acoustic cues such as those made by both prey and predators.

Fish also may exhibit noise-induced avoidance behavior that causes them to move into less suitable habitat for foraging or to feed when the noise has abated. Voellmy et al. (2014a) surmised that sustained decreases in food consumption could have long-term energetic impacts that result in reductions in growth, survival, and breeding success. Moreover, compensatory feeding activities could increase predation risks by increasing time exposed to predators or by forcing animals to feed in less favorable conditions, such as in times or areas of higher predation pressure.

In the PA, the increased noise produced by barge and tugboat traffic may result in salmonids and green sturgeon fleeing the area of those noises and moving into the channel's shallowest margins or adjacent habitat. The channel margins of many Delta waterways have submerged and emergent vegetation (e.g., *Egeria*) and rock rip-rapped levees where predatory species are likely to occur in greater numbers than in the open waters of the channel. This scenario therefore could

increase the predation risk of salmonids, particularly smolts. Likewise, elevated noise exposure can reduce the ability of fish to detect piscine predators either by reducing the sensitivity of the auditory response in the exposed fish or masking the noise of an approaching predator. Such would be the case if open water predators such as striped bass encounter the juvenile fish in the open channel while a barge and tug are present.

Within the context of the PA, the exposure to anthropogenically produced shipping noise will occur over a very broad area (San Francisco estuary and the Sacramento-San Joaquin Delta) and over an extended period of time (5.5 to 6 years). Barge traffic will traverse nearly a hundred miles of waterways from San Francisco to the Port of Stockton and the sites of the NDD construction sites and CCF barge landing. Exposure to anthropogenically produced sounds will occur during each passage of a tugboat and barge and has been estimated to be approximately 18,800 cumulative individual trips over the course of the 5.5 to 6 years of construction (see Table 2-16). The frequency of trips leading to either the CCF location in the south Delta or to Bouldin Island on the main stem San Joaquin River during the June 1 through October 31 period will be approximately 8 times a day to each primary barge landing site (four round trips per day per primary barge landing site), with less frequent trips to the other barge landing sites. This is estimated to be at least 16 individual trips through the lower San Joaquin River reach between Antioch and Stockton each work day for the entire construction period of 5.5 to 6 years during the June 1 to October 31 work season. During the work season from November 1 through February 28, only trips between the Port of Stockton and Bouldin Island will occur, with the same 4 round trips per day (8 one-way trips). From March 1 through May 31, the trips between the Port of Stockton and Bouldin Island are restricted to only essential trips. Barge traffic to other landings and from the ports of San Francisco and Antioch are prohibited during these two periods.

Noise associated with barge traffic may potentially affect multiple life stages of winter-run, spring-run, fall-run, and late fall-run Chinook salmon, steelhead, and green sturgeon. Both juveniles and adults of these species must pass through the Sacramento-San Joaquin Delta waterways and the San Francisco Bay Estuary while migrating to and from the ocean. A number of potential migration routes, such as Yolo Bypass, depend on the size and duration of available flows.

Barge activity from Chipps Island to the Golden Gate will affect all migrating fish regardless of migration route. Effects related to the increased frequency and level of shipping noise related to the project are primarily expected to alter behavior in juvenile salmonids more so than adults because juveniles are more likely to be actively feeding and using the Delta and estuarine areas for rearing. Increased levels of shipping noise will influence their responses to foraging because elevated shipping noise can disrupt the effectiveness of foraging behavior by reducing the time spent actively feeding or increasing the effort required to successfully attack and consume prey items. The noise can affect predator avoidance by masking sounds of predator approach.

### **2.5.1.1.1.2.1.1 Winter-run Exposure and Risk**

Detailed timing and spatial occurrence of winter-run Chinook salmon presence has previously been described in Section 2.5.1.1 Construction Effects. Juvenile winter-run Chinook salmon are present in the Delta from October through April, with peak occurrence from December through March. Adult winter-run Chinook salmon enter the San Francisco Bay in November with their migration through the Delta and up the Sacramento River continuing until June. The bulk of the