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BEFORE THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

IN RE CALIFORNIA WATERFIX CALIFORNIA DEPARTMENT OF WATER RESOURCES AND U.S. BUREAU OF RECLAMATION PETITION FOR CHANGES IN WATER RIGHTS, POINTS OF DIVERSION/RE-DIVERSION	**PROTESTANT SAVE THE CALIFORNIA DELTA ALLIANCE, ET Al.'s WRITTEN TESTIMONY OF FRANK MORGAN (Part 2 Rebuttal)**

SCDA-301

I, Frank Morgan do hereby declare:

I. Summary of Testimony.

I am familiar with the proposed California WaterFix Project, and have followed the development of the Project through its various iterations over the last six years. In particular, I have followed the development of the Project with respect to the impacts of construction of the Project on Delta communities and Delta recreation. I am familiar with the Project footprint and construction footprint of the Approved Project (Alternative 4A) and have reviewed FEIR Chapter 15, as well as other relevant portions of the FEIR. In particular, I reviewed FEIR Map Book Figures M15-4, sheets 1–8, which depict construction impacts on Delta Recreation. I also reviewed the National Marine Fisheries Service California WaterFix Biological Opinion, section 2.5.1.1.1.2 Barge Traffic.

I have compared statements in the FEIR, and other documents produced by WaterFix proponents, with my knowledge of the Delta, its residents, and its recreational users, gained over a lifetime of boating and recreating in the Delta, eighteen years as a Delta waterfront homeowner, and six years of operating a charter boat business in the Delta.

In my direct testimony and under cross-examination during Save the California Delta Alliance's Part 2 Case-in-Chief, I concluded that:

> There are also things DWR could do to lessen impacts [of construction] but is refusing to do, including relocating muck dumps and staging areas out of prime recreational corridors, using alternative methods instead of impact pile driving, and giving serious consideration to a much smaller project. … In my opinion, failure to implement these measures will destroy the Delta as we know it and will mean ruin for many Delta marinas and other recreational businesses.

(SCDA-86, p.1:6–11.)

I have now reviewed pertinent portions of the California WaterFix Administrative Draft Supplemental EIR/EIS ("ADSEIR"), including Figures M15-4, sheets 1–6, Recreation Facilities--Proposed Project, and Chapters 3, 15, 19, and 23, which all describe proposed changes to the previously approved Project ("Proposed Project").

I have also reviewed the July 10, 2018, California Department of Water Resource's Response ("DWR July 10 Response") to the California State Water Resources Control Board July 9, 2018, Ruling, which presents DWR's further analysis of barge traffic and attempts to correct

previous inconsistencies in DWR's representations regarding barge traffic. I have also reviewed the written rebuttal testimony of John Bednarski (DWR-1212.) Although purporting to clear up inconsistencies, DWR's July 10 Response and Mr. Bednarski's testimony contradict each other, are internally inconsistent, and contradict the ADSEIR--adding, rather than diminishing, credibility problems with DWR's presentation of barge issues. In my opinion, and as further demonstrated below, DWR's representations about barge traffic are so preliminary, inconsistent, and counterfactual that they cannot be relied upon as the basis for drawing conclusions about public trust impacts, including impacts to navigation.

DWR witness Douglas Rischbieter testified in the Part 2 Case-in-Chief that construction of "CWF facilities associated with the change in the point of diversion for CWF will reasonably protect recreation." (DWR-1024, p. 2:1–2.) The ADSEIR Asserts that the net effect of the changes in the Proposed Project is "a decrease in adverse impacts on recreation opportunities provided by pubic and private recreation facilities and a decrease in adverse impacts on recreational boating." (ADSEIR, p.15-1:15–16.) I disagree that CWF as it was in the Approved Project, and as it is proposed in the Proposed Project will reasonably protect recreation. I disagree that the changes in the Proposed Project decrease the adverse impacts on recreation, or recreational boating. My testimony is intended to rebut these assertions.

DWR witness Bednarski testified in the Part 2 Case-in-Chief that DWR had adopted mitigation measures that would "minimize potential impacts to navigation," (DWR-1022, p.3:28; p.5:11–14.) Mr. Rischbieter further testified that "[m]itigation measures and environmental commitments included in CWF would reduce the impacts on wildlife, visual setting, transportation, and noise conditions that could otherwise detract from the recreation experience." (DWR-1024, p.6:5–8 [citing SWRCB-102, p 15-265.) Mr. Rischbieter further testified that "mitigation measures will reduce impacts on navigation … including specific measures related to management of barges." Mr. Rischbieter further testified on cross-examination that "there are mitigation measures and Environmental Commitments included in CWF H3+ that reduce these impacts." (Rec. Trans. Vol. 11, p.215:6–7, March 8, 2018.) I disagree with these statement and my testimony is intended to rebut these statements that effective mitigation measures and environmental commitments have

been adopted, and, in particular, that mitigation measures have been adopted that will reduce the impact of barges.

Although the changes in the Proposed Project may shift some impacts from one part of the Delta to another, this is like re-arranging the deck chairs on the Titanic as the Delta will still be destroyed by massive amounts of barge traffic (18,800 one way trips, not 9400 one way trips as stated by Mr. Bednarski, massive amounts of pile driving (over 23,000 piles with over 10,000,000 strikes from giant pile-driving rigs [SCDA-82] at an excruciatingly loud 115 decibels [SCDA-65, p.3:22]), massive amounts of traffic on two lane Delta roadways (a doubling of vehicle trips, including hundreds of heavy construction trucks, on Highway 4 from Marsh Creek Road to Discovery Bay Blvd., the *only* access route into and out of our community of Discovery Bay [ADSEIR, p. 19-24]), and massive amounts of tunnel muck dumped on Delta Islands (30,000,000 cubic yards, with the latest change moving the massive Bouldin Island dump to within a few hundred feet of the Tower Park Marina and resort, including a beach used by small children (ADSEIR map Book M15-4, sheet 3).

San Luis and Delta Mendota Water Authority and Westlands Water District asserted in their Part 2 Cases-in-Chief that the Project was necessary to provide them with an adequate water supply However, as established by the testimony of Doug Obegi (NRDC-1), and exhibits submitted by Save the California Delta Alliance (e.g., SCDA-40, SCDA-41), DWR and its partners have failed to implement obvious, feasible, proven options to obtain millions of acre feet of new water, which would allow for a reduction in reliance on the Delta consistent with the Delta Reform Act and would allow for a much smaller--or no--tunnel project, and would supply adequate water to SWP and CVP users. I agree with Mr. Obegi, that the water conservation measures and other water supply measures proposed in his testimony should be made a condition of any permit granted for the CWF Project. I further believe that, as a condition of approval, the CWF project should be downsized to no more than one 3,000 cfs tunnel to take account of water available from the sources identified by Mr. Obegi.

Mr. Rischbieter testified that impacts from barge operations on recreational boating "would be significant and unavoidable during construction." (DWR-1024, p.7:5–7.) I disagree with Mr.

Rischbieter's statement that impacts from barge operations are unavoidable. If a tunnel or tunnels are to be built, the tunnels can feasibly be routed around the eastern edge of the Delta along the route shown on FEIR Figure 3-4. (submitted as SCDA-305[1].) This would facilitate moving muck dumps, staging areas, and access shafts away from Delta waterways, eliminating barge traffic on Delta waterways to service these construction elements and avoiding the impacts to Delta recreational boating. This would avoid running the construction area through the heart of the Delta on the current alignment as shown on FEIR Figure 3-9 (submitted as SCDA-306[2].) Access shafts, staging areas, and muck dumps could be accessed by trucks from Highway 5, which has the capacity to handle large amounts of heavy truck traffic. Contrary to the testimony of Mr. Rischbieter, impacts from barge operations are avoidable.

Changes to the barge traffic and concentration of truck traffic in the Delta brought about in the Proposed Project and described in the ADSEIR also worsen impacts of the Bouldin Island muck dump and staging area in the heart of the Delta. Moving this facility to the Port of Stockton or somewhere near Highway 5 as part of an eastern tunnel alignment would avoid the new impacts caused by these changes in the Proposed Project.

Mr. Rischbieter testified under cross-examination in the Part 2 Case-in-Chief that Delta recreational boaters would not abandon the Delta in large numbers due to the severity of construction impacts. (Rec. Trans. Vol.11, p. 221:4–5, March 8, 2018) However, Save the California Delta Alliance ("Delta Alliance") conducted a survey of Delta Boaters, which found that 26% of Delta boaters surveyed would stop boating in the Delta altogether, 24% of Delta boaters surveyed would significantly reduce the frequency of their boating activity in the Delta, and 18% of Delta boaters would somewhat reduce the frequency of their Delta boating in response to the construction activities of the CWF project. These results are consistent with my many conversations with Delta boaters and knowledge of Delta boater's recreational habits. In my opinion, Delta

[1] SCDA-305 is a true and correct copy of FEIR Figure 3-4 with the approximate Alternaive 4A alignment and approximate location of several recreational impacts drawn in.
[2] SCDA-306 is a true and correct copy of FEIR Figure 3-9.

recreational boaters will abandon the Delta in large numbers in response to the construction impacts of the Proposed Project or the Approved Project. (SCDA-352-1–352-5[3].)

I. DWR's Representations About The Number Of Barge Trips And Barge Routes Cannot Be Relied Upon As The Basis For Drawing Conclusions About Public Trust Impacts, Including Impacts To Navigation.

A. There Is Currently No Credible Or Enforceable Representation Of Barge Operations; A Permit Requirement Restricting Barge Operations To Protect Recreation Is Needed.

First, and important to all considerations of barge impacts and potential barge permit conditions[4], DWR has never presented their representations about barge traffic as binding commitments or regulatory requirements. Quite the opposite, they have consistently emphasized that their estimates are very preliminary and subject to almost certain substantial revision *after* any permit is issued by the SWRCB.

In his rebuttal testimony, Mr. Bednarski emphasized, "The information presented in this testimony is based on a conceptual-level of design (design approximately 10% complete), which will continue to be refined in future engineering phases." (DWR-1212, p.2:4–6.) Mr. Bednarski also acknowledged that DWR still does not actually know what the barge routes will be: "While the exact routing of the barges is unknown at this time, construction contractors will be required to develop detailed travel plans as part of DWR overall commitment to mitigate potential traffic impacts." (DWR-1212, p.16:1–3.) DWR cannot know the barge routes because it does not know which ports will be used to receive the tunnel liner segments: "Approximately 5900 barge trips will carry tunnel segment liners from ports (locations not yet determined, but likely in the Sacramento-San Joaquin Delta and San Francisco Bay area) to barge unloading facilities … . (DWR-1022, p. 5: 15–17.)

Mr. Bednarski invokes the "barge operations plan" as a future mitigation measure that will mitigate barge impacts on recreation:

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[3] SCDA-352-1–352.5 are true and correct copies of Delta Boater Surveys administerd to Delta Boaters at the Rio Vista Bass Derby on October 14 and 15, 2017.

[4] Delta Alliance discusses herein several of its proposed permit conditions. Consistent with the Board's recent communication, Delta Alliance will present all of its permit conditions in one concise document after the close of all evidence--each condition supported by sworn testimony of one or more witnesses.

> All barge operations will be required to comply with the provisions of a barge operations plan, as specified in Appendix3.F General Avoidance and Minimization Measures, AMM7 Barge Operations Plan (Exhibit SWRCB-104, Section 3.2.10.9 and Appendix 3F) and will be subject to review and approval by DWR and the other resource agencies (California Department of Fish and Wildlife, National Marine Fisheries Service, and US Fish and Wildlife Service included).

(DWR-1022, p.5: 23–28.)

The references cited by Mr. Bednarski are to the Biological Opinion. There, AMM 7 is briefly described and contains no measures related to recreation; it will address only concerns related to impacts on species. A more detailed description of the barge operations plan is found at FEIR Appendix 3B at section 3B.2.8, "Develop and Implement A Barge Operations Plan," and section 3B.4.7, "AMM7 Barge Operations Plan." The Barge Operation Plan is not a plan, but rather a promise to develop a plan: "the Project proponents will ensure that a barge operations plan is developed and implemented for each project that requires the use of a barge." (FEIR, Appendix 3B, p. 3B-30:7–9.)

Important to Delta Alliance's concerns, the future promised barge operations plan will not address potential impacts to recreation. The purpose of the plan is to address "potential impacts on aquatic habitat and species from barge and tugboat operations associated with water conveyance facility construction." (FEIR, Appendix 3B, p.3B-30.) None of the specific measures listed in Appendix 3B are related to recreation. The Barge Operations plan will not be developed by those concerned about impacts to recreation or with any public accountability, but rather "[e]ach plan will be developed and submitted by the construction contractors pursuant to DWR contract specifications as part of the traffic plans required by those specifications." (FEIR, Appendix 3B, p. 3B-107:3–5.) Delta Alliance does not believe that placing the survival of the recreation industry in the Delta in the hands of construction contractors with a profit motive and no directive to protect recreation is reasonable and cannot be considered reasonably protective of recreation.

As a result of requirements designed to protect aquatic species imposed by the federal fish agencies, in-water work windows and windows for barge traffic have already been concentrated in prime summer boating season months, negatively impacting recreation. (SCDA-103.) Therefore,

previous experience with CWF requirements shows that measures designed to protect species can, and do, bring about *increased* impacts on recreational boating.

The National Marine Fisheries Service will continue to oversee barge operations on an ongoing basis and may impose additional requirements to protect species that may incidentally impose further negative impacts on recreation. The NMFS has no mandate or authority to consider recreational impacts.

In sum, there is currently no enforceable or credible representation as to barge operations. There is no future enforceable commitment to develop a barge plan that considers recreation. If credible limits on barge operations to protect recreation are to exist, they must be imposed by the State Water Resources Control Board as permit conditions under the Board's public trust authority and responsibility.

B. DWR's Assertions Regarding The Number And Distribution Of Barge Trips And Truck Trips Are Understated And Unreliable.

1. If, As Mr. Bednarkski Testifies, All Previous Barge Traffic To CCF Is To Be Replaced By Truck Deliveries, This Will Result In 38,000 Undisclosed Additional Truck Trips Unreasonably Impacting Highway 4 And Discovery Bay.

Mr. Bednarski explains that DWR intends to eliminate 2 of the 7 proposed barge landings, those located at "West Canal, and Snodgrass Slough." (DWR-1212, p.13:18.) The "West Canal" landing is referred to in the NMFS Biological Opinion and elsewhere as The Clifton Court Forebay ("CCF") landing and the "Snodgrass Slough" landing is also variously referred to as the Glanville Tract Landing and Intermediate Forebay or "IF" landing.

A substantial portion of the anticipated barge trips are planned to deliver pre-cast tunnel liner segments from the ports of Stockton, San Francisco, and Antioch to two primary landings within the Delta that will then serve as distribution points for tunnel liner segments to be delivered to the access shafts locating all along the tunnel route. (SCDA-103 [NMFS BiOp section 2.5.1.1.2 Barge Traffic].) The two primary landings were designated as CCF and Bouldin Island. (SCDA-103, Table 2-33, p.153.) One of those two, primary landings, CCF, has now been eliminated.

Mr. Bednarski explains that "segment deliveries that were previously planned for the [eliminated barge landing at] Clifton Court Forebay will now be directed to the Byron Tract Forebay site." (DWR-1212, p.14:15–16.) The Byron Tract Forebay site is new and is located just north of CCF. (ADSEIR, Map Book M15-4, sheet 5.) There is no barge landing. The Byron Tract Forebay site can only be served by truck. This means that, unless re-directed to one of the remaining barge landings, most likely Bouldin Island (which we believe will actually be the case but Mr. Bednarski testimony indicates will not happen) all of the segments that were previously to be delivered by barge to CCF will now be delivered to Byron Tract by truck.

Previously, 2,187 one-way barge trips from the three ports to CCF were estimated to be needed to deliver tunnel liner segments to CCF. (SCDA-103, Table 2-23.) This was to be four one-way trips per day during the summer boating season for 5.5 years to carry tunnel liner segments to the CCF site (and four return trips, for a total of four roundtrips per day servicing the CCF facility). (SCDA-103, p.155 ["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"].)

According to the new scheme described by Mr. Bednarski, the contents of 2187 barges measuring 50 feet by 250 feet (SCDA-103, p.152, please see also SCDA-72, bottom of page, for an approximate photographic representation of a CWF barge]) will now be delivered by truck. DWR provides no information about how many total segments are required for the project, or how many segments can be carried by each barge or by each truck. I would estimate conservatively that each barge can carry at least as many segments as nine double trailer big rigs. This would mean an *increase* of over 19,000 heavy truck trips to the Byron Tract Forebay site.

However, Mr. Bednarski states that "DWR does not anticipate any additional truck deliveries and there are no redirected impacts stemming from these refinements." (DWR-1212, p.15:10–12.) Mr. Bednarski's statement is contradicted by DWR's July 10 response, issued the same day Mr. Bednarski's testimony was filed: "Under the Approved Project there is the potential for

increased truck traffic resulting from a reduction in barge trips … ." (DWR July 10 Response, p. 4:8–9.)

It is not possible that 2187 barge loads of tunnel liner segments can be shifted to trucks without a substantial increase in truck traffic. In addition to the 19,000 additional truck trips to the Byron Forebay, those 19,000 trucks have to depart the Byron Forebay as well, resulting in a total of 38,000 new one-way truck trips to and from CCF. All of these trucks will travel on Highway 4 adjacent to Discovery Bay severely impacting traffic and presenting an unreasonable impact on access to Discovery Bay and its marina, launch ramp, waterfront restaurants, and other recreational facilities. (Please see ADSEIR Map Book M15-4, sheet 5, for an orientation of the Byron Tract Forebay, Highway 4, and Discovery Bay.)

The elimination of the CCF barge landing does not reduce impacts on recreation.

2. Uncertainty And Contradiction In DWR's Representations About Barge Traffic Require A Permit Condition Prohibiting Any Openings Of The Highway 4 Bridge For CWF-Related Barge Traffic.

Although the barge landing at CCF is purportedly being eliminated, Mr. Bednarski testified that "even without a temporary barge landing at this location, barge deliveries of tunnel linings to the proposed tunnel shafts near Byron Tract Forebay location will be utilized. It is anticipated that barges will travel to this site via the Old River. Barges will utilize 'spuds' to secure mooring locations immediately adjacent to the construction site while segments are being off-loaded." (DWR-1212, p.13:23–27.) This would necessitate opening of the Highway 4 draw bridge over Old River. (DWR-1212, p.15:18.) There is only one proposed tunnel shaft south of the Highway 4 bridge and it is served by a new proposed access road off of Highway 4. (ADSEIR, Figure M15-4, sheet 5.) The access shaft is some ways from the river and there is no roadway from the river to the shaft. It is uncertain how DWR would service this shaft location by barge absent the removed barge landing at CCF.

In my view, there is too much uncertainty and contradiction regarding barge operations to open the door to frequent openings of the Highway 4 Bridge over Old River. The potential addition of 38,000 truck trips on Highway 4 *and* the frequent opening of the Highway 4 bridge--stopping all traffic on Highway 4--would present a massive traffic impact. Highway 4 would be gridlocked from

Byron Highway to Middle River. This bridge is currently very rarely opened, less than once per month if that often. Highway 4 is heavily congested and daily or multiple times daily opening of this bridge would be a disaster for traffic on Highway 4 and on Discovery Bay. Given the incomplete information and state of confusion surrounding barge operations, the only way to prevent catastrophic highway delays on Highway 4 is to include as a condition of any permit a blanket prohibition of any openings of the Highway 4 Old River Bridge for CWF-related barge traffic.

3. DWR's Representations About Barge Traffic Cannot Be Relied On Because There Are Too Many Inconsistencies, Contradictions, And Implausible Statements In DWR's Account.

a. DWR's Errors Regarding Draw Bridge Openings For Barge Traffic And The Need For Bridge Opening Permit Conditions.

DWR previously asserted that no drawbridges would have to be opened as a result of barge operations. (FEIR, p.19-232.) In its Part 2 Case-in-Chief, Delta Alliance pointed out that DWR's miscalculation of bridge clearances and mis-statement in the FEIR that draw bridges would not have to be opened to allow barge passage represented significant engineering errors. (SCDA-100, p.1:22–27, p.2:1–5 [testimony of Traffic Engineer Chris Kinzel].) Although still erroneous in their statements, the ADSEIR, DWR's July 10 Response, and Mr. Bednarski's rebuttal testimony, for the first time, acknowledge that Delta drawbridges *will* have to be opened to allow CWF barges to pass--and that this *will* cause impacts to roadway traffic. To his credit, Mr. Bednarski acknowledged "these potential concerns," which DWR had previously overlooked. (DWR-1212, p.15:28.)

However, DWR still has no credible, consistent account of bridge openings and DWR assertions regarding bridge openings contradict each other.

Mr. Bednarski's rebuttal testimony includes openings of the Rio Vista Bridge, (DWR-1212, p.15: 17–18.) The ADSEIR omits the Rio Vista Bridge. (ADSEIR, p. 19-36: 32–35, 19-37: 1.) The Rio Vista Bridge is heavily traveled and when it opens traffic on already overtaxed Highway 12 becomes gridlocked. DWR represents that any bridge openings would occur outside of commute hours. (ADSEIR.) As a condition of approval of any permit, the Rio Vista Bridge should be opened

for CWF related barge traffic only once per day, only on Monday through Thursday, and only between the hours of 11 am to 1 pm.

The ADSEIR lists as other affected bridges, the Paintersville Bridge, the Walnut Grove Bridge, the Isleton Bridge, and the Freeport Bridge. As a condition of any permit, openings of these bridges should be restricted to only one per day, only Monday through Thursday, and only between the hours of 11 am to 1 pm.

As a condition of any permit, only the Rio Vista Bridge, Paintersville Bridge, Walnut Grove Bridge, and Isleton bridge should be allowed to be opened (as limited above) for CWF related barge traffic and no other bridge in the Delta should be allowed to be opened for CWF related barge traffic.

b. DWR Erroneously Understates The Number Of Round-Tip Barge Trips Per Day In The Study Area By 275%–375%.

The ADSEIR incorrectly states that the Proposed Project would not "substantially increase the volume of barge movement within the study area, such that existing marine traffic would be disrupted (on average, 4 roundtrips per day for up to 5.5 years throughout the alignment)."(ADSEIR, p. 19-37:31–32.) The statement of a total of only 4 roundtrips per day throughout the study area is incorrect, understating the number of barge round trips by at least 250%.

The only detailed analysis of barge traffic, found in the NMFS BiOp, provided that there would be total of 2185 one-way barge trips to the CCF barge landing and 3344 one-way trips to the Bouldin Island barge landing, and assumed that there would be four round trips servicing *each* of these landings per day. (SCDA-103, p.155 ["The assumed number of one-way trips to CCF is 2,185 and to Bouldin Island is 3,344. It is assumed there will be four trips to each of these 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 … ."].) Bouldin Island and CCF were designated the two "primary landings." (SCDA-103, p.152.)

In addition to the two primary landings, the Approved Project includes five secondary landings that would receive an additional 3900 one-way barge trips *to* the secondary landings and 3900 one-way return trips *from* the secondary landings back to the ports of origin:

> [Total barge trips include] an anticipated 3,900 one-way trips to the secondary locations shown 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 increases 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 … .

(SCDA-103, p. 155.) Although dubbed a secondary landing, the Bacon Island Landing is alone designated to receive 2150 one-way trips to the landing adn 2150 one-way trips from the landing back to the port of origin. (SCDA-103, p. 154, Table 2-34.) This equates to 4 round trips per day to service only the Bacon Island Landing.

Even if one assumes that all barge trips to CCF are eliminated with the elimination of that landing and all of the materials previously carried by barges are shifted to trucks, that still leaves at least four roundtrips per day to service the Bouldin Island landing *plus* four roundtrips per day to service the Bacon Island landing, plus one round trip to service each of the other three remaining secondary landings (Venice Island, Mandeville Island, and Victoria Island) for a total of at least eleven round trips per day in the study area. The ADSEIR, then, erroneously understates the number of barge round trips in the study area by *at least* 275%. As discussed below, shifting the CCF materials to truck is unlikely to happen and the former CCF barge trips will most likely be re-directed to Bouldin Island, for a total of 15 round trips per day in the study area, or an understatement by DWR of 375%.

DWR's July 10 Response To The Board's order directing DWR to clarify barge trip information repeats the 4-round-trip-per-day-throughout-the-study-area-error: "Approximately 11,800 barge trips are projected to carry tunnel segments from existing precast yards to project sites via the Sacramento River and other waterways, averaging approximately 4 roundtrips per day for approximately 5.5 years." (DWR July 10 Response, p. 2: 5–7.) Mr. Bednarski's Part 2 Case-in-Chief testimony, likewise, repeats the same gross understatement of round trip barge trips in the study

area per day: "Approximately 5,900 barges trips will carry tunnel liner segments … averaging approximately four round trips per day for up to 5.5 years." (DWR-1022, p. 5: 15–18.)

c. DWR Erroneously Understates The Total Number Of Barge Trips Stated In The NMFS BiOp Throughout The Construction Period By Half.

In his Part 2 Rebuttal testimony, and in response to the Board's Order of July 9, 2018, to clarify barge trip information, Mr. Bednarski testified that "the NMFS Biological Opinion controls" over the FEIR as to the number of barge trips. (DWR-1212, p.14: 18–19.) Mr. Bednarski then erroneously states that the total of "9400 [barge trips stated in the BiOp] are one way barge trips and translate into approximately 4,700 round trips, meaning that DWR expects roughly 4,700 delivery trips and 4,700 return trips." (DWR-1212, p. 14:9–11.) As is clear from the discussion above, this is wrong. The BiOp estimates 9400 delivery trips and 9400 return trips, for a total 18,800 one-way trips or 9400 round trips.

Table 2-34 on page 154 of the BiOp counts the "Number of one way trips *to* landing" It lists a total of 3860 trips *to* the five secondary landings included in the Approved Project. This number is rounded to 3900 in the textual discussion of Table 2-34:

> [Total barge trips include] an anticipated 3,900 one-way trips *to* the secondary locations shown 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 increases 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 … .

(SCDA-103, p. 155, emphasis added.) The number of trips shown in the tables (Table 2-34 and Table 2-33) are one way trips *to* the barge landings. As demonstrated by the textual discussion quoted above, for each trip *to* each landing there is an additional required return trip.

The total number of one way trips *to* the landings shown in tables 2-34 and 2-33 is 9392, which has been rounded to 9400 in the textual discussions. The total number of barge trips anticipated by the BiOp is 9400 *to* the landings to deliver materials plus 9400 *away* from the

landings to return to ports of origin. There are a total of 9,400 round trips or 18,800 one way trips, not 4700 round trips as stated by Mr. Bednarski.

Although there is some difference in impact between a delivery trip and a return trip, as a loaded barge stirs up more sediment, for purposes of impacts on recreational navigation there is roughly twice as much impact as has been assumed by Mr. Bednarski.

d. Petitioners Mis-State The Season Of Barge Operations And Thereby Misunderstand The Concentrated Impact Of Barge Operations On The Summer Boating Season.

Mr. Earle testified on behalf of Petitioners that: "It also may be worth noting that the restriction does not apply to barge traffic which would be distributed throughout the year." (Rec. Trans. Vol. 11, p.207:6–8, March 8, 2018.) This is incorrect. For most locations, barge traffic is limited to June 1 through October 31, concentrating barge traffic in the prime summer-fall Delta boating season. (SCDA-103, p.152.)

Here, as elsewhere, Petitioners statement's that barge traffic will not unreasonably impact recreational boating are based on mis-understandings of the Project and mis-statements of the number of barge trips.

II. Eliminating the CCF And IF Barge Landings Will Shift Barge Traffic To Bouldin Island Unreasonably Impacting Recreational Boating And Prime Anchorages On Potato Slough.

DWR has only a skeletal understanding of barge operations. As discussed above, ultimately the contractor selected to build the project will determine the barge operations. (FEIR, Appendix 3B, p. 3B-107:3–5.) The contractor need only work within the basic plan, which is to receive pre-cast concrete tunnel liner segments in sufficient quantity to line over 75 miles of tunnel, most of it 40 feet in diameter. (ADSEIR, p. 3-3.) The liner segments will arrive by ship at Bay Area ports. (SCDA-103, p. 153.) From those ports, under the Approved Project, the liner segments were to be transported by barge to two primary barge landings (CCF and Bouldin Island) and five secondary landings (Intermediate Forebay, Venice Island, Mandeville Island, Bacon Island, and Victoria Island). (SCDA-103, Tables 2-33 and 2-34.) From the two primary landings, the segments were to be distributed throughout the tunnel route by truck.

The Proposed Project eliminates the CCF Landing and the IF Landing. It is reasonably foreseeable that the segments that were to go to the eliminated CCF and IF landings, will instead travel by barge to Bouldin Island, and be distributed from Bouldin Island by truck throughout the tunnel route. The Proposed Project improves the barge dock at Bouldin Island, moving it to a wider portion of Potato Slough to better accommodate high volume barge traffic. Bouldin Island is already the main staging area for the project and includes improved roadways and a new turnout on Highway 12 to handle large volumes of truck traffic. (ADSEIR, Map Book M15-4, sheet 3.) Bouldin Island is also centrally located midway along the tunnel route. The shift of barge traffic to Bouldin Island is consistent with the most likely approach a contractor would choose to achieve efficiency and maintain profit margins. DWR has presented no credible account of barge traffic that would indicate any other likely result of eliminating the CCF and IF landings.

The 2187 barge round trips servicing CCF and the 435 barge round trips servicing the IF will be re-routed to Bouldin Island. This increases the number of round trips per day servicing Bouldin Island from 4 to at least 9, more than doubling the impacts on recreational boating.

This represents a significant new impact on Potato Slough, the location of the Bouldin Island barge landing. It is also doubtful that one barge dock (as proposed by DWR) could handle that much barge traffic. With at least 9 round trips per day, there would likely not be enough work hours in the day to safely dock, safely unload, and safely undock 9 barges. Likely there would need to be at least two docks. That volume of barge traffic would also entail many barges anchored or standing off in Potato slough, waiting their turn to approach the dock(s).

My colleague Bill Wells will discuss in more detail the impacts of the Bouldin Island facility and muck dump on recreation. I will state that this area is a prime recreational anchorage and will be ruined by this massive barge operation.

Bill Wells also discusses in more detail the repositioning of the Bouldin Island muck dump so that it now reaches to directly across Potato Slough from the major resort area of the Tower Park Resort, including reaching to within a few hundred feet of the children's beach at Tower Park. I will comment that stretching the muck dump to reach all the way to Tower Park Marina will have a significant negative impact on the Tower Park Resort, with has a campground, RV park, swimming

beach, restaurants, and other recreational facilities. Delta mud stinks. The smell of millions of cubic yards of rotting tunnel muck will drive people away from Tower Park, and, contrary to the assertion in the ADSEIR, the muck dump will be plainly visible from the resort decks and restaurant areas as they sit well above the levees. Placing a massive dump site (approximately 15,000,000 cubic yards of tunnel muck) within a few hundred feet of a resort and children's play area is unreasonable and cannot be reasonably protective of Delta recreation or of the health and safety of chldren.

The more than doubling of barge operations at the Bouldin Island staging area and muck dump will also mean a significant increase in truck traffic on already heavily overloaded Highway 12. By absorbing the tunnel liner segments that were to be delivered by barge to CCF, Bouldin Island will see an approximate 65% increase in the number of tunnel liner segments delivered to, and distributed from, Bouldin Island. These segments will be distributed along the tunnel alignment by trucks, which must arrive and depart Bouldin Island on Highway 12. As it is, Highway 12 traffic is a nightmare. On several occasions recently, I have had to give up on reaching my intended destination and turn around and go home because Highway 12 was completely grid-locked.

The Tower Park Resort is a major Delta resort facility and is expanding by installing a regional water park. It draws many of its visitors from Highway 5 to the east. Like the construction trucks destined for Bouldin Island, visitors to Tower Park Resort must also travel on Highway 12. The increased truck traffic and resultant traffic jams on Highway 12 will have a severe negative impact on Tower Park Resort because recreationist will become fed up with traffic and decide not to return to Tower Park.

For all of these reasons, a permit condition is needed requiring that the tunnel alignment be changed to the eastern alignment shown on SCDA-305 and the Bouldin Island muck dump and staging area be moved to a location east of the eastern tunnel alignment shown on SCDA-305. The eastern alignment is away from recreational areas, does not require barge service, and is conveniently serviced by Highway 5, which is designed to carry high volume heavy truck traffic. The eastern alignment avoids most of the recreational impacts in the current proposal (some of which are shown on SCDA-305) and is the only way CWF can be reasonably protective of rereation.

III. CWF Is Not Reasonably Protective Of Delta Recreation And The Mitigation Measures Do Not Reduce Impacts On Recreation.

A. Mitigation Measure Trans 1-a Does Not Reduce The Impact Of Barge Operations.

Mr. Bednarski testified that Mitigation Measure Trans 1-a would "minimize potential impacts to navigation." (DWR-1022, p.3:28; p.4:1–6.)

I disagree.

Mitigation Measure Trans 1-a contains two items related to navigation: 1) Post signs at in-water work areas "boats keep out" or "no wake zone;" and 2) Advise boaters in advance of barge operations and the locations of in-water construction areas. (FEIR, p.19-54:27–31; 19-55:6–13.) Although needed for safety, these are *negative* impacts on recreational navigation. Boaters do not like slow no wake zones and avoid them whenever possible. It is currently possible to travel very long distances on Delta Waterways without encountering any 5 MPH zones. For example, one can travel from Discovery Bay to the Tower Park Resort without hitting any 5 MPH zones in between. This will be changed and 5 MPH zones will be imposed on this route by CWF construction activities. Implementing dozens of new no-wake zones is a negative impact on recreational navigation. Advertising all over the Delta how much of the Delta is "closed for construction" will cause boaters to choose to avoid the Delta all together and take their boating elsewhere.

An essential part of the Delta experience is the whimsical, uncontrolled nature of navigation. There are very few signs on Delta waterways and few restrictions on who can go where when. Turning the Delta into a tightly restricted, heavily signed, "construction advisory" zone is antithetical to the Delta's essential nature.

Any real measure to minimize impacts to recreational navigation must *sifnificantly reduce or eliminate* barge traffic and *move tunnel construction activity away from Delta waterways*.

B. Barge Operations Are Not Reasonably Protective Of Delta Navigation Or Recreation.

Mr. Bednarski's testimony addresses "potential impacts to navigation" of "barge traffic." (DWR-1022, p.2:15–18.) Mr. Rischbieter concludes that impacts from barge operations on

recreational boating "would be significant and unavoidable during construction." (DWR-1024, p.7:5–7.)

I disagree with Mr. Bednarski's statement that barge impacts are unavoidable. The significant adverse impact of barge operations on recreational boating is avoidable. Exhibit SCDA-305 is figure 3-4 from Chapter 3 of the FEIR. It depicts an alternative, eastern alignment of the tunnels, shown in blue andskirting around the eastern edge of the Delta close to Highway 5. This alignment would obviate the need for any barge use by allowing truck access from Highway 5 to the entire tunnel length, would allow movement of muck dumps out of the Delta, and would thereby avoid significant adverse impacts to recreation by moving the construction zone away from the heart of the Delta's recreational area. The current through-the-heart-of-the-Delta alignment of Alternative 4A is drawn in red on SCDA-305 and several of the recreational impacts that would be avoided are called out.

It is unreasonable to construct the tunnels through the heart of a prime recreation area. A reasonable, viable alternative to piercing the heart of the Delta with massive construction activities exists. Therefore, CWF is not reasonably protective of Delta recreation in its current Alternative 4A guise.

C. Future, Undefined Barge Operations Plans Are Unacceptable Mitigations For Barge Impacts.

DWR learned from Delta Alliance's Part 2 Case-in-Chief testimony that there are draw bridges in the Delta, that its barges will necessitate frequent openings of those bridges (impacting road traffic) and that its barge-landing scheme was unworkable. DWR quietly removed the barge landing at CCF because we pointed out that barges would not fit under the Highway 4 bridge, and eight openings per day of this bridge on congested Highway 4 was unworkable. On the other hand, the ADSEIR still shows the Highway 4 Bridge as being opened for barge traffic, along with the Isleton Bridge, the Walnut Grove Bridge, the Paintersville Bridge, and the Freeport Bridge. (ADSEIR, p.19-36–37.) The Rio Vista Bridge is omitted from the ADSEIR analysis, which is irrational because barges could not reach the Isleton, Walnut Grove, Paintersville, or Freeport

Bridges without first passing under the Rio Vista Bridge. Mr. Bednarski acknowledges in his rebuttal testimony that the Rio Vista Bridge would also be opened.

Mr. Bednarski testified that "Loading and offloading construction equipment and materials from barges in the Delta can be accomplished by pushing ramp barges up against levees and unloading directly onto the Levee" or by constructing barge landings. (DWR-1022, p.4:26–28.) It is unclear whether removing the barge landing from the Meadows Slough (IF Landing) means that DWR intends no barge trips to the Meadows, or that barges will service the IF, but without a formal landing.

DWR posits future consultations with resource agencies and future development of an as-yet undefined barge operations plan to mitigate barge impacts on recreation. This is unacceptable. The Delta Alliance Boater's Survey found that 76% of boaters surveyed answered that they were very confident that DWR would not make a good faith effort to reduce impacts to recreation from barge operations. 14% said that they were somewhat confident that DWR would not make a good faith effort to reduce impacts from barge operations, and only 7% said that they were somewhat confident or very confident that DWR would make a good faith effort. This is consistent with my many conversations with Delta boaters regarding their expectations of DWR.

As a condition of any permit, DWR should be required to *eliminate* all delivery of materials and removal of muck by barge. This can be feasibly accomplished by moving the tunnel alignment to an eastern route, similar to that shown on FEIR Figure 3-4. The eastern route would also avoid many of the impacts on Delta roadways, including the unacceptable impact on Highway 4 at Discovery Bay, by shifting truck traffic onto Highway 5, which is designed to handle high volume heavy truck traffic, unlike small Delta roadways.

D. Promises To Control Aquatic Weeds As A Measure To Offset Impacts On Recreation and Recreational Navigation Are Illusory.

Invasive aquatic weeds are a severe problem in the Delta and are rapidly growing worse. Aquatic weeds are a problem throughout the Delta and negatively impact recreational boating as well as interfering with swimming in the Delta. Aquatic weeds are a particularly severe problem in

the shallow backwater bays of Discovery Bay. Exhibits SCDA-302 and 303[5] are a photographs of aquatic weeds in Discovery Bay clogging boat propellers and cooling system intakes, and hindering navigation.

Egeria densa and other submerged weeds clog the bays of Discovery Bay, at times bringing navigation to a halt in certain areas and causing damage to boats by clogging propellers and cooling systems. Submerged weeds also hinder already limited circulation in Discovery Bay, negatively impacting water quality. In my experience, toxic blue-green algae blooms are worsened by the presence of submerged weeds as I have repeatedly observed the algae blooms occur in areas where waterways are clogged by submerged weeds. Exhibit SCDA-304[6] is a photograph of blue-green algae that occurred in Discovery Bay linked to the presence of submerged *egeria densa*. The condition shown in the photograph prevents swimming and other water-contact sports.

As a measure to offset the negative impacts of the Project on recreation, DWR has promised to implement measures to control invasive aquatic weeds. Mr. Bednarski and Mr. Risschbieter have called attention to DWR's mitigation measures and environmental commitments that would "minimize potential impacts to navigation," (DWR-1022, p.3:28; p.5:11–14.) The ADSEIR states that "helping to fund measures to reduce aquatic weeds would reduce impacts on recreational navigation," (ADSEIR, p. 15-7:10–11).

However, on closer inspection, there are actually *no* commitments to do anything to control aquatic weeds. The ADSEIR, therefore, wrongly asserts that the Proposed Project would include measures to reduce aquatic weeds and would thereby offset impacts on recreation. Mr. Rischbieter's and Mr. Bednarski's assertions that environmental commitments, as described in the FEIR, would reduce impacts on recreational navigation are also inaccurate.

The ADSEIR describes purported aquatic weed measures: "[C]ommitments as set forth in Appendix 3B, *Environmental Commitments, AMMs, and CMs*, relating to the enhancement of recreational access and control of aquatic weeds in the Delta would continue to be implemented

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[5] SCDA-302 and SCDA-303 are true and correct copies and accurate depictions of the described subject matter.

[6] SCDA-304 is a true and correct copy and accurate depiction of the described subject matter.

under the proposed project." (ADSEIR, p.16-5:44–16-6:1–2) Turning to Appendix 3B of the FEIR, "Funding the California Department of Boating and Waterways' Programs for Aquatic Weed Control" is found at section 3B.3.4. Section 3B.3.4 is half a page long and makes no commitment to any funding level and contains no description of what specific measures would be undertaken. Further, section 3B.3.4 provides that "This commitment would supplement *CM13 Invasive Aquatic Vegetation Control*." However, CM13 is *no longer a part of the Project*. CM 13 was dropped when the proponents gave up on achieving HCP/NCCP status for the Project.

To find the list of environmental commitments included in Alternative 4A, the FEIR directs as follows: "Descriptions of the Environmental Commitments (the conservation actions of Alternatives 2D, 4A, and 5A) are provided in Section 3.6.3." (FEIR, section 3.6.2 Conservation Components, p. 3-167.) Turning to section 3.6.3, one finds that CM13 Invasive Aquatic Vegetation Control *has been omitted from the list of environmental commitments for the Project*: "Specifically, portions of the actions proposed under CM3, CM4, CM6–CM12, CM15, and CM16 would be included in the non-HCP alternatives." (FEIR, section 3.6.3 Environmental Commitments, p.3-221.)

This game of cat and mouse, forcing the reader to trudge back and forth through numerous sections of the ADSEIR and FEIR only to ultimately find that the promise of a mitigation measure is actually non-existent, is repeated throughout the documents.

An enforceable commitment to engage in substantial efforts to control invasive aquatic weeds would offset some of the long-term negative water quality and impacts of the project and would offset some of the impacts of construction on recreational navigation. DWR should be held to its now unenforceable promise of weed control.

The California Department of Boating and Waterways currently conducts invasive aquatic vegetation control measures in the Delta. However, the Department's funding is unstable and inadequate. It is my understanding that the Department currently spends approximately $12,000,000 annually on weed control. Despite its best intentions and efforts, the Department's weed control program is inadequate and barely addresses 10%–15% of the problem, at best. Therefore as a condition of any permit, the Board should require DWR to fund an annual expenditure of $100,000,000 for aquatic weed control, beginning in the year that any permit is approved by the

Board and lasting in perpetuity. The permit condition should specify that weed control will include treating all of the bays of Discovery Bay every year, beginning in March with weekly treatments lasting through August, for the submerged species *Egeria densa, Potamogeton crispus, Myriophyllum spicatum, Cabomba caroliniana, and Ceratophyllum demrsum*. The condition should also specify annual delta-wide treatments for the floating species *Eichhornia crassipes*, *Limnobium laevigatum, Ludwigia hexapetala,* and *Alternanthera philoxeroides*.

Executed on this 9th day of July, 2018, in Discovery Bay, California.

Frank Morgan