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October 30, 2015

Delivered Via E-mail: BDCPComments@icfi.com

BDCP/CA WaterFix Comments

P.O. 1919

Sacramento, CA 95812

Subject: Comments of North Delta Water Agency on the Partially Recirculated Bay-Delta Conservation Plan EIR/EIS with New CA WaterFix Sub-Alternatives

Dear ICFI Consultants:

To secure the current contractual and individual water rights of Agency landowners to adequate water supply and quality, the North Delta Water Agency (“NDWA” or “Agency”) submits these comments on the new CA WaterFix alternatives (4A, 2D, and 5A) added to the Bay Delta Conservation Plan (“BDCP”) project and the Draft Recirculated Environmental Impact Report/Supplemental Environmental Impact Statement (“DREIR/DSEIS”). In 1981, the NDWA and the Department of Water Resources (“DWR” or “Department”) executed the *Contract for the Assurance of a Dependable Water Supply of Suitable Quality* (1981 Contract)

The Agency values DWR’s commitment to maintain the assurances provided to North Delta water users for the last thirty-four years, but is concerned how the large diversion facilities proposed in most of the BDCP/CA WaterFix alternatives will alter hydrodynamics, potentially preventing DWR from complying with 1981 Contract obligations if constructed and operated as proposed. NDWA’s successful negotiation of a water supply and quality contract with the State in 1981, and its more recent efforts to actively participate and provide expertise as a Cooperating Agency under NEPA in the development of the BDCP Plan has proven the Agency’s willingness to act in good faith as a water contractor with DWR.

The comments provided herein on the CA WaterFix project alternatives, as well as the NDWA comments on the 2012 and 2013 Administrative Drafts and the 2014 BDCP Draft EIR/EIS seek to incorporate compliance with the 1981 Contract into the design, location, and operation of the BDCP/CA WaterFix proposed facilities, and to ensure that the impacts associated with the proposed project are properly described, analyzed, and mitigated in accordance with applicable law.

The findings and recommendations set forth in the following attachments are submitted with this letter and incorporated herein by reference:

Exhibit A:

DWR-NDWA, *Contract for the Assurance of a Dependable Water Supply of Suitable Quality* (1981)

Exhibit B:

Steiner/MBK Engineers, *Report on Review of Bay Delta Conservation Program Modeling* (June 20, 2014);

Exhibit C:

MBK Engineers, *Technical Comments on Bay-Delta Conservation Plan Modeling* (July 29, 2014)

Exhibit D: MBK Engineers, *Technical Comments on Bay Delta Conservation Plan/California Water Fix Partially Recirculated Draft EIR/Supplemental Draft EIS*(October 28, 2015)

These comments are also being submitted on behalf of the following districts that exist and operate, in whole or in part, within NDWA:

- Reclamation District 501
- Reclamation District 551
- Reclamation District 563
- Reclamation District 900
- Reclamation District 999
- Reclamation District 2060
- Reclamation District 2068
- Maine Prairie Water District

I. INCORPORATION OF PREVIOUS COMMENTS BY REFERENCE

All of the extensive legal and technical comments on the 2014 Draft Bay Delta Conservation Plan (BDCP) and Environmental Impact Report/Environmental Impact Statement (EIR/EIS) contained in letters submitted by the following are incorporated by reference herein.

1. Contra Costa Water District, July 25, 2014
2. North State Water Alliance, July 28, 2014
3. CA Central Valley Flood Control Association, July 29, 2014
4. Local Agencies of the North Delta, July 29, 2014

NDWA anticipates that Contra Costa Water District, North State Water Alliance, CA Central Valley Flood Control Association, and the Local Agencies of the North Delta will submit additional comments on the CA WaterFix RDEIR/SDEIS. In addition, the Delta Independent Science Board presented their review of environmental documents for CA WaterFix to the Delta Stewardship Council on September 30, 2015. All of these comments are likewise incorporated herein by reference.

As a responsible agency under CEQA, and a cooperating agency under NEPA, NDWA expects to receive a response to our comments at least ten days prior to the Department taking any final action on the CA WaterFix Project EIR/EIS.

II. SUMMARY OF COMMENTS AND CONCERNS

The NDWA recognizes the importance of achieving the State’s coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem¹ and has a clear statutory mandate to assure that the lands within the North Delta have a dependable supply of water of suitable quality sufficient to meet present and future needs in accordance with the 1981 Contract.²

For this reason, NDWA has repeatedly asserted during the various Delta planning processes that any projects, programs, and actions pursued in the name of coequal goals, including the BDCP/CA WaterFix, must be: 1) based on the best available science; 2) consistent with the contractual obligations of the State under the 1981 Contract; and 3) undertaken in compliance with all applicable state and federal law.

Key issues of concern NDWA has with BDCP/CA WaterFix project alternatives and associated EIR/EIS are:

- 1) ***Unequal*** – May improve water supply reliability for water contractors in Export Service Areas, water supply reliability and quality for in-Delta and upstream users is diminished.
- 2) ***Indecipherable*** - Document organization and relationships between BDCP analysis and CA WaterFix alternatives is confusing at best, and sometimes incomprehensible.
- 3) ***Conceptual*** – The project design/description is preliminary and subject to change, so the impact analysis conclusions are mostly conjecture based on limited facts or actual assessment.
- 4) ***Incomplete*** – Project operations rely on levee corridor through the Delta for conveyance to south Delta pumps, but comprehensive levee and flood protection analysis is deferred, and cost-sharing of levee maintenance is absent.
- 5) ***Pre-Determined*** – Submission of 404 permit to USACE and change of diversion petition to SWRCB appear to have already determined the outcome of the ongoing CEQA/NEPA environmental review process.

An overarching and inherent issue with the BDCP/WaterFix alternatives and associated EIR/EIS is the fact that the CA WaterFix project is still in a state of flux according to recent engineering report by DWR³:

- alignment and features are “preliminary and subject to change”
- all information presented in the report is considered “conceptual or preliminary”
- “need to be verified as part of additional investigations and detailed design” according to

¹ Public Resources Code Section 29702(a)

² North Delta Water Agency Act, Chapter 283, Special Statutes of 1973.

³ Delta Habitat Conservation & Conveyance Program (DHCCP), *Conceptual Engineering Report Dual Conveyance Facility Modified Pipeline/Tunnel Option – Clifton Court Forebay Pumping Plant*, July 1, 2015.

Reliance on a “conceptual” project design results in an inadequate “preliminary” project description being used as the basis for conducting environmental assessment and determining CEQA/NEPA impact conclusions.

In addition, the Agency agrees with many of the observations and general conclusion in the 2015 Delta ISB review that the CA WaterFix alternatives and RDEIR/SDEIS lack key information, analyses, summaries, and comparisons necessary to adequately inform decision-makers, resources managers, scientists, or the broader public. The Delta ISB also points out that the BDCP which was already one of the most complex projects to evaluate has been made even more complicated and confusing with the addition of three new alternatives that propose to only construct CM1 and eliminate many of the actions in CMs 2-22.

In NDWA’s view, the new project description and environmental analysis is a jumbled mess, resulting in a complex labyrinth that is hard to navigate, and even harder to decipher. The degree of difficulty is heightened by the fact that the new CA WaterFix alternatives rely on modeling done for BDCP and continually refer back to BDCP alternatives for project description and environmental impact analysis.

For example, throughout the recirculated CA WaterFix chapters, the impact analysis and conclusions for Alt. 4A refer to BDCP Alt. 4, which then often refers readers to BDCP Alt. 1A for a description of how CEQA/NEPA conclusions and mitigation measures were determined.

Simply put, NDWA finds the description of CA Waterfix construction and operation is often internally inconsistent, preventing a full and meaningful disclosure of the scope, purpose, intensity, duration, and true effects in the RDEIR/SDEIS. This is not unexpected since the design is still at a very preliminary conceptual level according to the July 1, 2015 Conceptual Engineering Report by the Delta Habitat Conservation & Conveyance Program (DHCCP).

Finally, there is acknowledgment throughout the new CA WaterFix documents that the water conveyance facilities construction under Alt. 4A would be identical to that of Alt. 4, with similar operations. (e.g., Water Supply chapter, page 4.3.1-1, lines 3-6, 2015 DREIR/DSEIS). Because the construction, operation, and impacts of the new CA WaterFix preferred alternative (Alt. 4A) is substantially similar to the prior preferred alternative (Alt. 4), most of the significant adverse impacts identified in the 2014 BDCP Alt. 4 and 2014 BDCP comments still apply to CA WaterFix Alt. 4A.

III. FACTUAL BACKGROUND

A. North Delta Water Agency

Beginning approximately 160 years ago, farmers within the area now comprising NDWA began reclaiming lands from flooding, appropriating water to beneficial use and establishing vibrant agricultural communities pursuant to the federal Swamp Land Act of 1850.⁴ In the 1930s, the U.S. Bureau of Reclamation (Bureau/USBR) began constructing the Central Valley Project (CVP), damming the major tributaries on the Sacramento River and holding back substantial quantities of the Delta water supply. Before government reservoirs began withholding much of

⁴ Arkansas Swamp Lands Act, Act of September 28, 1850, codified at California Public Resources Code Section 7552, 7552.5.

the Sacramento River system's high winter flows, the Delta channels stored sufficient fresh water to sustain water quality in the northern Delta throughout and often beyond the irrigation season. In addition, because the tides raised surface water elevations twice a day, a supply of water always remained physically available in the Delta.

This natural phenomenon of the Sacramento-San Joaquin Delta in its natural state acting as a freshwater reservoir instead of a stream, as evidenced by water quality monitoring conducted in the western Delta since 1914 by the East Contra Costa Irrigation District,⁵ is commonly referred to as the Delta Storage Concept.

On the eve of the parties signing the 1981 Contract, DWR told the North Delta landowners that the benefits of becoming a SWP water contractor would be receiving "more water, or water of better quality, than they did before the construction of the Central Valley Project and State Water Project."⁶ Since the SWP and CVP water supply operations commenced, however, the reduction of naturally occurring high flushing flows from upstream storage combined with the pull of the State and federal export pumps have contributed to the intrusion of salinity into the Delta.⁷

Now, the SWP and CVP water conveyance project operations have effectively transformed the natural Delta freshwater "reservoir" into more of a flowing stream, resulting in relatively minor decreases in outflow that can have a serious impact on Delta water quality. These changed conditions are the basis for DWR executing a water supply availability and quality contract with the NDWA.

In 1973, the NDWA was formed by a special act of the Legislature to represent northern Delta interests in negotiating a contract with both the Bureau and DWR in order to mitigate the water rights impacts of the CVP/SWP Projects.⁸ Representing nearly one-half of the legal Delta, the Agency's boundaries encompass approximately 300,000 acres. This includes all of that portion of the Sacramento-San Joaquin Delta, as defined in Water Code Section 12220, situated within Sacramento, Yolo and Solano Counties, including New Hope Tract, Canal Ranch and Staten Island in northeastern San Joaquin County.

After undertaking extensive analysis, study, and review between 1974 and 1979, the Bureau, DWR, and the NDWA collectively determined the outflow necessary to meet water quality standards for irrigated agriculture, reviewed the paramount water rights of landowners within North Delta's boundaries, and evaluated the Delta channels' historical function as natural seasonal storage for purposes of executing a water supply and quality contract.

⁵ Water Resources Department, Contra Costa Water District "Historical Fresh Water and Salinity Conditions in the Western Sacramento-San Joaquin Delta and Suisun Bay: A summary of historical reviews, reports, analyses and measurements (Technical Memorandum WR10-001) (February 2010)

⁶ DWR Director Ronald Robie quoted in the Sacramento Bee, "Water Payment Progress Helped By Fear Of Canal." (March 21, 1980).

⁷ Hanak et.al, Managing California's Water: From Conflict to Reconciliation (Public Policy Institute of California 2011). ("Delta farmers complained of increasing salinity in their water supplies as upstream diversions and combined CVP/SWP operations depleted more of the natural flow.")

⁸ North Delta Water Agency Act, Chapter 283, Special Statutes of 1973.

B. The 1981 Contract

The crux of the 1981 Contract, which remains in full force and effect, is a guarantee by the State of California that, on an ongoing basis, DWR will ensure through the operation of the SWP that suitable water will be available to satisfy all agricultural and other reasonable and beneficial uses in all channels within NDWA's boundaries.⁹ Specifically, the State is obligated to furnish "such water as may be required within the Agency to the extent not otherwise available under the water rights of water users."¹⁰

The 1981 Contract contains numerous provisions that protect water users and channels in the North Delta from detrimental impacts associated with changes in conveyance of SWP water; specifies year-round water quality criteria; and includes specific remedies, which include limitations on the operations of the SWP. In return for the benefits received, NDWA makes an annual payment to DWR. NDWA further expressly consents to the export of water from the Delta "so long as this contract remains in full force and effect and the State is in compliance herewith."

IV. SPECIFIC IMPACTS TO NDWA AND CONTRACTUAL ASSURANCES

DWR's compliance with the binding terms of the 1981 Contract is not discretionary. Moreover, the legal standards that govern DWR's discharge of its obligations under the 1981 Contract are quite different from those that govern DWR's compliance with CEQA and other applicable law. For example, while CEQA requires DWR to implement feasible mitigation measures to reduce significant impacts of the project to less-than-significant levels, DWR may not, as a matter of contract law, choose not to comply with the specific requirements of the 1981 Contract based on a determination of infeasibility, or otherwise.

In light of the statewide significance and consequences associated with implementation of CA WaterFix, NDWA concurs with the Delta ISB statement, "This EIR/EIS must be uncommonly complete in assessing important environmental impacts, even if that means going beyond what is legally required."

NDWA appreciates the RDEIR/SDEIS stating the intention of CA WaterFix to meet contractual obligations under Alt. 4A operations (Section 4.1.2.2). How this will be accomplished is not apparent however, particularly under drought conditions.

⁹ Contract for the Assurance of a Dependable Water Supply of Suitable Quality (1981 Contract). A copy of this contract is attached to this letter. Note that by reference to this contract, NDWA intends to reference all relevant Memoranda of Understanding, including the memorandum of understanding dated May 26, 1998 (MOU). This MOU provides that DWR is responsible for any obligation imposed on NDWA to provide water to meet Bay-Delta flow objectives, so long as the 1981 Contract remains in effect. This agreement was formed in connection with the hearings that preceded the State Water Resources Control Board's adoption of Water Right Decision 1641. In Decision 1641, the State Water Board made the following findings and determinations: "Based on the agreement, the SWRCB finds that the DWR will provide the backstop for any water assigned to the parties within the NDWA as specified in the MOU. This decision assigns responsibility for any obligations of the NDWA to the DWR consistent with the MOU." (Decision 1641 at 66). The latter findings and determinations were upheld by the trial and appellate courts that subsequently reviewed Decision 1641.

¹⁰ Id.; 1981 Contract Art. 8(b)

An example of language in CA WaterFix that casts doubt on DWR's ability to maintain the 1981 Contract water quality criteria is on page 4.2-4, lines 25-37:

- “There would be a decrease in carryover storage at the end of September for Lake Oroville, Trinity Lake, Shasta Lake, and Folsom Lake in all years”
- “These changes in storage would reduce the ability of the CVP and SWP to meet system water demands and environmental water needs.”

The increased frequency under CA WaterFix Alt. 4A operations in which lack of carryover storage occurs could result in decreased Delta outflows and water quality.

The CA WaterFix project description and RDEIR/SDEIS indicate that implementation of the preferred alternative (Alt. 4A) would impact North Delta water quality and availability, and potentially violate several provisions of the 1981 Contract:

- Alteration of existing water elevations to the detriment of North Delta channels and water users;
- Alteration of natural flow patterns (reverse flows created at Georgiana Slough and Delta Cross Channel) to the detriment of North Delta channels and water users;
- Decrease Delta outflow in winter and summer months;
- Meeting spring outflow requirements relies on annually purchasing sufficient water supply from willing sellers, which is a speculative proposition at best; and
- Seepage and erosion damage to the lands, levees, embankments, or revetments adjacent to Delta channels from water conveyance changing the estuary's hydrodynamics.

The following CA WaterFix operational assumptions are also disclosed in the DHCCP Conceptual Engineering Report (July 1, 2015), but not analyzed in the RDEIR/SDEIS:

- Must be able to deliver up to 9,000 cfs from north Delta intakes at the low water level in the Sacramento River;
- Must be able to deliver 9,000 cfs flow rate 99% of the time;
- Operating volume of the new North Clifton Court Forebay (NCCF) is significantly less than the existing Clifton Court Forebay.

In addition, the following are a few examples of numerous major omissions that the NDWA identified in previous comments that still appear to have not been analyzed, disclosed, or mitigated in RDEIR/SDEIS:

- Complying with contractual assurances within the NDWA boundaries are not adequately quantified or addressed in the new alternative or DREIR/DSEIS.
- Cumulative adverse impacts disclosed in the Groundwater, Water Quality, Health, and Agriculture Chapters result in a significant adverse water supply impacts on Delta water users.
- The effects of lowered surface water elevations from reduced flows on the overall local water supply and water quality in the Delta region.
- The economic, health, and agriculture impacts due to lowered groundwater elevations from extensive dewatering activities during 10-14 year construction.
- Water quality impacts resulting from levee reconfiguration or failures.

- Emergency response and evacuation or recovery plans.

V. CEQA/NEPA AND OTHER LEGAL DEFICIENCIES

Beyond the requirements of the 1981 Contract, the CA WaterFix and associated RDEIR/DSEIS also fail to satisfy the requirements of CEQA/NEPA, the federal Endangered Species Act (ESA), and various Delta protection laws.

Very few of the prior comments and suggestions have been addressed in the new CA WaterFix alternatives or the DREIR/DSEIS. As a result, the BDCP/CA WaterFix project alternatives and EIR/EIS still fail to:

- Accurately and comprehensively assess the current ecological conditions or compare the full extent, duration, intensity, and severity of potential adverse impacts;
- Utilize the best available science;
- Protect listed or covered species consistent with ESA/CESA laws;
- Comply with state and federal law governing economic analysis of public water infrastructure;
- Develop an appropriate range of feasible alternatives or least environmentally damaging preferred alternative;
- Include any direct benefits for, residents, communities and local governments in the Plan Area;
- Properly identify or mitigate cumulative impacts; or
- Include oversight of project construction, operation, or effectiveness of mitigation measures.

VI. RECENT SCIENCE REVIEW CITES MAJOR DEFICIENCIES

A. Inadequate, Inconsistent, and Confusing Project Description

A proper environmental analysis of a project of this size and scope requires an accurate, stable, and finite description of all major project components and the existing baseline conditions. Otherwise, the public cannot determine the true nature and extent of the actual impacts likely to be caused by the Project.

However, a recent DWR engineering report¹¹ discloses that CA Waterfix design is still at a very preliminary conceptual level:

- alignment and alignment features are “preliminary and subject to change”
- alignment and alignment features will ultimately “need to be verified as part of additional investigations and detailed design.”
- the facility locations, dimensions, and elevations (both topographic and facility) are “approximate” and “subject to change”
- geotechnical information for the proposed tunnel alignment is currently limited, so preliminary designs will be refined “once adequate geotechnical investigations have been performed.”

¹¹ Delta Habitat Conservation & Conveyance Program (DHCCP), *Conceptual Engineering Report: Modified Pipeline/Tunnel Option – Clifton Court Forebay Pumping Plant*, Volume 1 (July 1, 2015)

NEPA requires that the proposal in an EIS is properly defined (§ 1502.4(a)). Under CEQA, the fundamental purpose of an EIR “is to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action.”¹²

Unfortunately, trying to decipher the description of the project’s new alternatives is particularly daunting. For instance, the conclusions for Alt. 4A often refer to BDCP 4 impact analysis, which then refers readers to BDCP sections n BDCP Alt. 1A. Frankly, the project is a jumbled mess, resulting in a complex labyrinth that has created an even higher level of navigation difficulty and fails to substantiate environmental conclusions, as pointed out in several reviews by scientific panels.¹³

As a result, NDWA cannot properly evaluate the full extent of the environmental consequences of the CA WaterFix alternatives, or provide meaningful input in terms of recommendations for avoiding or reducing the adverse impacts of the proposed project.

B. Environmental Impact Conclusions Are Unsubstantiated and Overly Optimistic

Under CEQA the lead agency’s factual conclusions must be supported by substantial evidence – facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (CEQA Guidelines §15384(b)). Speculation does not constitute substantial evidence, and unsubstantiated narrative or expert opinion asserting nothing more than “it is reasonable to assume” that something “potentially may occur” is not analysis supported by factual evidence (e.g.; 2,600 dewatering radius).

There are too many chapters and individual impact statements that rely on conjecture instead of providing evidence to support the CEQA/NEPA conclusions to list them all. The following are general examples of the extensive amount of environmental analysis that is lacking from the Delta ISB’s review of CA Waterfix:

- “the Current Draft fails to consider how levee failures would affect the short-term and long-term water operations spelled out in Table 4.1-2.” (Pg 7)
- “The Current Draft does not evaluate how the proposed project may affect estimates of the assets that the levees protect.” (Pg 8)
- “Neither the Previous Draft nor the Current Draft, however, provides a resource chapter about Delta levees.” (Pg 8)

¹² (CEQA Guidelines §15003(d), citing *People ex rel. Department of Public Works v. Bosio* 1975

¹³ See, e.g.,: 1) September 30, 2015, *Review of the Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (California WaterFix)* conducted by Delta Independent Science Board; 2) National Academy of Science Panel to Review California’s Draft Bay Delta Conservation Plan, 2011, *A Review of the Use of Science and Adaptive Management in California’s Draft Bay Delta Conservation Plan* (“The lack of an appropriate structure creates the impression that the entire effort is little more than a post-hoc rationalization of a previously selected group of facilities, including an isolated conveyance facility, and other measures for achieving goals and objectives that are not clearly specified.”) http://www.nap.edu/openbook.php?record_id=13148; 3) Delta Independent Science Board, *Review of the Draft EIR/EIS for the Bay Delta Conservation Plan* (May 15, 2014), . (“The DEIR/DEIS provides an exhausting wealth of information about the Delta and the likely impacts of the proposed alternatives. However, this wealth of information and data is not organized in a way that can usefully inform difficult public and policy discussions.”) http://deltacouncil.ca.gov/sites/default/files/documents/files/Item_9_Attachment_3.pdf.

- “Although sensitivity modeling was used to address the effects of changes in the footprint and other minor changes of the revised project, full model runs were not carried out to assess the overall effects of the specific changes.” (Pg 11)
- “Current draft generally neglects recent literature, suggesting a loose interpretation of ‘best available science.’” (Pg 11)
- “Confounding interactions that may enhance or undermine the effectiveness of proposed actions were overlooked.” (Pg 12)

CA WaterFix’s CEQA/NEPA conclusions lack credibility because they are typically general and vague in making overly optimistic assumptions without site-specific identification of where, for how long impacts will occur, or who will be impacted.

As detailed in the report of fisheries biologist Dave Vogel filed herewith, the new North Delta intakes and accompanying fish screens will lead to “ideal conditions” for predation of juvenile salmon by creating flow conditions that disorient juvenile salmon and pull them to one side of the Sacramento River directly into a target-rich environment for predators waiting to feed. Furthermore, when the North Delta intakes are operating the pumping facilities will cause reduced Sacramento River stream flow which will adversely affect migration of juvenile winter-run Chinook salmon who will be pulled into the Central Delta by increased reverse flows created at the Delta Cross Channel and Georgiana Slough. These impacts will occur under both BDCP and CA WaterFix alternatives, including Preferred Alternatives 4 and 4A.

Currently, CM1 as proposed will require the three new North Delta intakes to undergo some operational fish screen testing prior to full pumping – but only *after* all three North Delta diversions have been built. If these never-before-used screens do not function as planned, then this gamble will end up a losing proposition for the Delta fisheries, Delta-as-Place, or CVP/SWP Delta water contractors (who will be stuck with long-term payments on a very expensive stranded asset).

It is important to point out a fact that is rarely discussed in BDCP/WaterFix alternatives – SIZE matters. The average size of the Delta’s agricultural water diversion intakes is about 12 inches with a 10-15 cfs capacity (mostly siphon, not pumps) while the urban intakes are less than 300 cfs. The precedent for the size selected for CM1 is the Glenn-Colusa Irrigation District’s (GCID) 3,000 cfs intake. However, GCID’s facilities are not located in a tidal estuary, do not have to screen for smelt, and were not without their own problems.¹⁴

To reduce the level of adverse impacts, the preferred alternative (4/4A) should be modified to either delay CEQA/NEPA analysis until the project is at a 60% design level, or require phasing of construction for the intakes and two main tunnels. To address uncertainties, the original the Peripheral Canal conveyance project approved by the State Legislature in 1980 (SB 200 and ACA 90), required the intakes to be installed one at a time and environmental impacts analyzed for two years before proceeding with further construction. The extreme amount of risk warrants a similar phased construction approach so that the altered Delta hydraulic and surface water elevation changes to flood protection, and local water supply and quality can be analyzed and mitigated before building the other intakes/tunnel. Governor Jerry Brown’s Administration

¹⁴ These problems ultimately resulted in a very expensive redesign of fish screens and forebay. See chronology in *U.S.A. v. Glenn-Colusa Irrigation District* CVS-91-1074-DFL-JFM (1991)

obviously agreed to this precautionary approach the first time around and should do no less with CA WaterFix.

Examples of the Delta ISB finding CA WaterFix to be overly optimistic in regards to impacts and uncertainties, include:

- “In the Current Draft, uncertainties and their consequences remain inadequately addressed, improvements notwithstanding.” (Pg 11)
- “The level of certainty seems optimistic, and it is unclear whether there are any contingency plans in case things don’t work out as planned. This problem persists from the Previous Draft.” (Pg 17)
- “Here, as in many other places, measures are assumed to function as planned, with no evidence to support the assumptions.” (Pg 17)
- “A scientific basis for this statement is lacking, and an adaptive or risk-based management framework is not offered for the likely event that such optimism is unfulfilled.” (Pg 10)
- “Despite the lack of specific data on how well screens function, the conclusion that there will be no significant impact is stated as certain” (Pg 17)

C. Adaptive Management, Funding, and Mitigation Commitments are Vague

Under CEQA, an EIR must be sufficiently descriptive and specific to allow the public to clearly understand exactly how significant effects will be mitigated so they can weigh in on the adequacy of such measures. Unfortunately, neither the BDCP nor the CA WaterFix EIR/EIS documents meet CEQA or NEPA requirements in terms of assurances necessary for adaptive management, funding, or mitigation measure commitments.

Neither the BDCP nor the CA WaterFix EIR/EIS documents meet CEQA or NEPA requirements in terms of assurances necessary for adaptive management, funding, or mitigation measure commitments.

For instance, 4.1-15, line 7 states that “Specific locations for implementing many of the activities associated with these commitments have not been identified at this time.” In addition, the “restoration and protection principles” are apparently not enforceable like mitigation measures according to page 4.1-37, line 32, “these activities are considered part of the alternative and are not defined as ‘mitigation measures’ in order to avoid confusion with those measures proposed for the purposes of CEQA and NEPA compliance.”

Fundamental concerns regarding the effectiveness of adaptive management and mitigation measures due to vague descriptions and deferred commitments were noted by the Delta ISB:

- “The lack of substantive treatment of adaptive management in the Current Draft indicates that it is not considered a high priority or the proposer have been unable to develop a substantive idea of how adaptive management would work for the project.” (Pg 5)
- “We did not find examples of how adaptive management would be applied to assessing – and finding ways to reduce – the environmental impacts of project construction and operations.” (Pg 5)

- “The missing details also include commitments and funding needed for science-based adaptive management and restoration to be developed, and more importantly, to be effective.” (Pg 6)
- “The Current Draft does little more than promise that collaborations will occur and that adaptive management will be implemented.” (Pg 6)
- “The test will be whether the measures will be undertaken as planned, be as effective as hoped, and continue long enough to fully mitigate effects. This is where adaptive management and having contingency plans in place becomes critically important. It is not apparent that the mitigation plans include these components.” (Pg 13)
- “Monitoring is mentioned, but details of organization, intent, and resources seem lacking. Adequate funding to support monitoring, collaborative science, and adaptive management is a chronic problem.” (Pg 15)

Finally, environmental conclusions in the RDEIR/SDEIS simply stating that future projects/actions/designs will comply with applicable law does not constitute avoidance of all impacts and does not suffice to replace mitigation. All of the EIR/EIS Chapters we reviewed also had many examples where the adverse impacts identified in the title and description were left unmitigated in the CEQA Conclusion.

D. Defers Analysis of Significant Components of the Project

The new CA WaterFix alternatives and RDEIR/RDEIS continue to defer essential material to the Final EIR/EIS which prevents NDWA from understanding the true nature and scope of project impacts to water quality and supply.

In order to approve a project, the lead agencies must identify feasible mitigation measures or alternatives that would avoid or substantially lessen any significant adverse environmental effects of the project.¹⁵ The mitigation measures must also be specific and mandatory, such that they are fully enforceable.

The EIR/EIS cannot defer the determination of the scope and nature of significant impacts until future studies and reports are prepared without including specific performance standards, timeframes for completion, and a commitment to mitigate. However, many Alt. 4/4A Mitigation Measures fail to set specific performance standards or criteria for surveying, relocating, repairing, replacing, compensating, or restoring the impacted resource.

Misleading conclusions and missing impacts associated with Alt 4A that would adversely affect Delta water quality and supply are common throughout the EIR/EIS, mostly because studies about the existing baseline conditions and the Project’s impacts are deferred to a later time

The amount of environmental analysis that is deferred to a later date identified by the Delta ISB is concerning to NDWA:

- “It defers essential material to the Final EIR/EIS” (09-3-15 cover letter)
- “overall incompleteness through deferral of content to the Final EIR/EIS” (Pg 4)
- “modeling of the effects of levee failure would be presented in the Final Report.” (Pg 4)

¹⁵ Cal. Pub. Res. Code § 21002

- “The Current Draft does not demonstrate consideration of recently available climate science, and it defers to the Final Report analysis of future system operations under potential climate and sea-level conditions.” (Pg 11)

The Agency contends that it is reckless to assume that the details of mitigation will be fleshed out at an unknown future date.

NDWA shares the concerns regarding the extensive amount of environmental analysis that is deferred to a later date raised by the Delta ISB:

- “It defers essential material to the Final EIR/EIS” (09-3-15 cover letter)
- “overall incompleteness through deferral of content to the Final EIR/EIS” (Pg 4)
- “Steve Centerwall told us on August 14 that modeling of the effects of levee failure would be presented in the Final Report.” (Pg 4)
- “analysis describing potential scenarios for future SWP/CVP system operations and uncertainties [related to climate change] will be provided in the Final Report.” (Pg 4)
- “The Current Draft states that comparisons of alternatives will be summarized in the Final Report (p. 1-35).” (Pg 4)
- “some of the missing content has been deferred to the Final Report” (Pg 4)
- “The Current Draft defers details on how adaptive management will be made to work:” (Pg 6)
- “This is too late. If adaptive management and monitoring are central to California WaterFix, then details of how they will be done and resourced should be developed at the outset (now) so they can be better reviewed, improved, and integrated into related Delta activities.” (Pg 6)
- “The Current Draft does not demonstrate consideration of recently available climate science, and it defers to the Final Report analysis of future system operations under potential climate and sea-level conditions.” (Pg 11)

E. Uncertainties Confounded by Significant Analytical Omissions and Data Gaps

CEQA conclusions in CA WaterFix lack credibility because they are typically general and vague in making optimistic assumptions without site-specific identification of where, for how long impacts will occur, or who will be impacted. The RDEIR/SDEIS fails to specify the scientific background on how these assumptions were made.

The numerous examples of significant issues that are not acknowledged or analyzed undermines the credibility of the BDCP as a biologically justified project, and erodes the public’s trust in DWR and the State to uphold statutory, regulatory, and contractual obligations to protect the value of the Delta’s unique ecosystem, water supply, agricultural longevity, and socioeconomic environment.

The Delta ISB had the following to say about the “unwarranted optimism” that continues to persist in CA WaterFix:

- “The level of certainty seems optimistic, and it is unclear whether there are any contingency plans in case things don’t work out as planned. This problem persists from the Previous Draft.” (Pg 17)

- “Here, as in many other places, measures are assumed to function as planned, with no evidence to support the assumptions.” (Pg 17)
- “This conclusion is built on questionable assumptions;” (Pg 8)
- “A scientific basis for this statement is lacking, and an adaptive or risk-based management framework is not offered for the likely event that such optimism is unfulfilled.” (Pg 10)
- “The literature does not support this assumption.” (Pg 18)

F. Cumulative Impacts Analysis is Inadequate

Every action has a reaction, and there are hundreds of actions in each of the new CA WaterFix alternatives, but very little analytical attention to the cumulative impacts of these actions to each other, environmental trade-offs, or how other foreseeable projects and actions will affect this project.

Examples of the many cumulative adverse impacts in the Plan Area (Delta) the EIR/EIS should specifically describe, analyze, and quantify include:

- Cumulative impacts to in-Delta water supply (agriculture and drinking water) from 7 significant and “unavoidable” adverse impacts identified in *Water Quality Chapter 8*.
- Cumulative impacts to levee stability and Delta flood risk from CM1 pile driving, dewatering lowering groundwater 10-20 feet, sediment loading, 9 cofferdams in the Sacramento River and tributaries, and damage from erosion, seepage, and overtopping;
- Cumulative impacts to Delta agriculture from land conversion, seepage damage, water quality degradation, soil contamination (salinity absorption), blocked access to parcels, and reduce water elevations (surface and groundwater) stranding diversion intakes and wells;

The failure to adequately analyze the cumulative impacts was also pointed out by the Delta ISB:

- “The proposed project is part of the broader array of management actions in the Delta and should be considered in that broader context.” (Pg 18)
- “the Current Draft fails to consider how levee failures would affect the short-term and long-term water operations spelled out in Table 4.1-2.” (Pg 7)
- “What are the cumulative impacts of wetland losses in the Delta? What is the tipping point beyond which further wetland losses must be avoided?” (Pg 18)
- “Up to 14 years of construction activities were predicted for some areas (e.g., San Joaquin Co.); this would have cumulative impacts (e.g., dewatering would affect soil compaction, soil carbon, microbial functions, wildlife populations, and invasive species).” (Pg 19)

G. Insufficient Modeling and Analysis of Water Supply and Quality Impacts

The use of flawed models and failure to conduct full model runs for the new CA WaterFix alternatives, once again results in underestimated impacts, particularly for Delta water supply and quality, as well as overly optimistic conclusions regarding the ability to mitigate impacts.

The Delta ISB also pointed out the following issues with the modeling and water operations:

- “Although sensitivity modeling was used to address the effects of changes in the footprint and other minor changes of the revised project, full model runs were not carried out to assess the overall effects of the specific changes.” (Pg 11)
- “Consequently, modeling that would help bracket ranges of uncertainties or (more importantly) assess propagation of uncertainties is still inadequate.” (Pg 11)
- “There are also uncertainties with the data generated from model outputs, although values are often presented with no accompanying error estimates.” (pg 11)
- “The operating guidance for the new alternatives seems isolated from the many other water management and environmental activities in and upstream of the Delta likely to be important for managing environmental and water supply resources related to Delta diversions.” (Pg 14)
- “The dynamics of the Delta are largely determined by water flows. The Current Draft acknowledges that water flows and salinity will change in complex ways. There are statements about how inflows, outflows, and exports will change in Alternative 4A in relation to baseline (No-Action) conditions (p. 4.3.8-13). What is the scientific basis on which these changes will be managed? Will models be used? What confidence should we have in current projections? Have the effects of drought or deluges been considered?” (Pg 15)
- “the Current Draft is probably outdated in its information on climate change and sea-level rise. It relies on information used in modeling climate change and sea-level rise in the Previous Draft, in which the modeling was conducted several years before December 2013.” (Pg 11)
- “The absence of the climate-change chapter (Chapter 20) in the Previous Draft from Appendix A in the Current Draft indicates that no changes were made.” “Yet climatic extremes, in particular, are a topic of intense scientific study, illustrated by computer simulations of ecological futures and findings about unprecedented drought.” (Pg 11)
- “How sensitive are project water supply and environmental performance to changes in operating criteria?” (Pg 14)
- “The new Sustainable Groundwater Management Act (SGMA) seems likely to increase demands for water diversions from the Delta to the south to partially compensate for the roughly 1.5-2 maf/year that is currently supplied by groundwater overdraft.” (Pg 15)
- “The climate change analysis of changes in Delta inflows and outflows is useful, but isolating the graphs in a separate document disembodies the discussion.” (Pg 15)
- “the failure to consider how climate change and sea-level rise could affect the outcomes of the proposed project is a concern that carries over from our 2014 review and is accentuated by the current drought” (Pg 8)
- “Graphs of changes and listing of extreme highs and lows during a model run would have more biological meaning. Also, comparisons were made using current baseline conditions and did not consider climate change effects on temperatures.” (Pg 17)

VII. ECONOMIC IMPACTS AND FISCAL ASSURANCES

A. Economic Evaluation of BDCP Is Inadequate and Biased

A new economic analysis does not appear to have been conducted on the new CA WaterFix alternatives. Therefore, the NDWA’s previous comments on BDCP alternatives in 2014

regarding the inherent inequities that exist in the BDCP and EIR/EIS assumptions used in the cost-benefit analysis, also apply to the CA WaterFix alternatives.

DWR should undertake objective and comprehensive cost-benefit and socioeconomic analyses for the CA WaterFix alternatives that is consistent with applicable economic analysis standards and independently peer-reviewed for accuracy and efficacy of the methodology, assumptions, models, and results.

B. 1981 Contract Compliance Costs Are Not Included in the Finance Chapter or the Underlying Economic Analysis

CA WaterFix should acknowledge the financial obligations associated with implementing remediation measures to comply with DWR's assurances that are specified in the NDWA 1981 Contract. Costs to comply with the 1981 Contract will be incurred in the design, construction and operational phases of the BDCP/CA WaterFix alternatives (assuming, *arguendo*, that the project is constructed), so DWR's binding obligations under the 1981 Contract will most certainly have economic repercussions during the ongoing operation of these water conveyance facilities. Yet neither the Finance Chapter of the BDCP, the new CA WaterFix alternatives, nor the economic analyses mention or quantify the costs of complying with the 1981 Contract.

C. Reduction in NDWA Assessments Needs to be Addressed

Like other local agencies dependent on property assessments to fund its core functions, NDWA is concerned that the massive permanent conversion of land and long-term (up to 14 years) disruption of existing land use activities during construction would result in a significant loss of assessment revenues which could seriously impede the Agency's ability to administer and enforce the 1981 Contract. Local government agencies in the Plan Area, including NDWA, need a reliable mechanism and funding source to replace lost local government revenues (taxes, assessments).

DWR and USBR not only have a duty under CEQA and NEPA to identify these significant fiscal impacts; they also have a duty to mitigate these impacts. Moreover, the 1981 Contract imposes other, contractual obligations on DWR including, *inter alia*, the implied covenant of good faith and fair dealing, not to take actions that undermine the Agency's ability to perform under, or enforce, the 1981 Contract.¹⁶

Resolution of this matter is additionally critical to the Agency because state agencies do not have a good track record of paying local property taxes and assessments, forcing NDWA and other local government agencies to sue for recovery.¹⁷ In fact, the two largest delinquent landowners who have not paid current NDWA assessments are State agencies.¹⁸

¹⁶ Special Act, Sec. 115-4.1

¹⁷ See, e.g., *North Delta Water Agency v. CA Department of Fish & Game* (Case No. 06AS03923); *Manteca Unified School Dist. v. Reclamation District 17* (fees for school assessments); Kruger, Harold "Levee District 1 tells Caltrans to pay up" *Appeal-Democrat* (November 2, 2013). Available at http://www.appeal-democrat.com/levee-district-tells-caltrans-to-pay-up/article_510ee3bf-be28-53ca-8b52-449318e471a5.html?mode=jqm

¹⁸ Specifically, the Department of Fish and Wildlife (whose assessments are currently offset by DWR contact payment reductions pursuant to a settlement in the above case, Case No. 06AS03923) and Caltrans.

The BDCP/CA WaterFix project alternatives and associated RDEIR/SDEIS should explicitly acknowledge the obligations of the State to financially offset “any detriments” to North Delta channels and water users resulting from the operation of the CVP and SWP, as required by the 1981 Contract,¹⁹ and declare DWR’s commitment to enter into a binding agreement prior to the start of construction to mitigate lost assessment revenues associated with a 14-year construction time period and ongoing operations of BDCP/CA WaterFix project. This is consistent with BDCP’s existing obligation under the Delta Reform Act to enter into contracts for payment of local agency tax or assessments for all lands associated with implementation of CM1 conveyance facilities. A reduction of 1981 Contract payments for any lands transferred from private to public ownership (whether owned by State, federal, or local agencies) for purposes of implementing BDCP/CA WaterFix project is one option for mitigating these fiscal impacts.

D. Additional Funding Assurances for BDCP/WaterFix Implementation Are Needed

Costs incurred by DWR actions to avoid or remedy 1981 Contract violations, or pay in-lieu assessments to NDWA, are not theoretical and should be budgeted in a way that recognizes the fiscal gravity and significant impact to the Agency. NDWA is particularly concerned about the availability of funding to implement mitigation measures for the hundreds of impacts identified in the RDEIR/SDEIS and individual actions called for in *Avoidance and Minimization Measures*.

The precariousness of BDCP/WaterFix funding is exacerbated by documents stating finance plans will be developed separately by “various funding agencies” through future discussions.²⁰ The elusive nature of the ability of BDCP/WaterFix to fully fund permit activities, including adaptive management and mitigation measures is illustrated by the lack of funding agreements signed by SWP or CVP water contractors. In order to be reliable funding streams over long-term operation of these new water conveyance facilities, the funding mechanisms should be unencumbered by the vagaries of legislative appropriations.

NDWA requests the certainty of reliable funding being available for mitigation implementation, reimbursement of in-lieu assessments, payment of 1981 Contract violation remedies, and compensation to third parties for damages be described and committed to in detail in BDCP/WaterFix project description and RDEIR/SDEIS.

VIII. OVERSIGHT OF IMPLEMENTATION

A. BDCP/WaterFix Lacks Accountability for Compliance with Laws and Permits

Under NEPA, mitigation includes avoiding, minimizing, rectifying, reducing over time, or compensating for an impact.²¹ CEQA contains similar requirements. In order to ensure compliance with all permit terms and conditions, permitting agencies will need to have a robust tracking mechanism to monitor whether the thousands of discrete mitigation actions listed in the EIR/IES chapters and contained in the *Avoidance and Minimization Measures* (Plan Appendix

¹⁹ 1981 Contract Recitals, p. 1

²⁰ BDCP EIR/EIS, p. 8-2.

²¹ 40 CFR § 1508.20

3.C) are being implemented properly, and that the mitigation measures are performing as intended to reduce the hundreds of significant impacts listed in the RDEIR/SDEIS.

In accordance with NEPA/CEQA, the BDCP/WaterFix permitting agencies must be clear with each other and transparent with the public as to who is proposing each mitigation measure, and who will monitor and enforce measures that are adopted as terms and conditions of the approved permits.²² Failure to ensure the implementation and effectiveness of these mitigation measures will result in a substantial increase in “Significant and Unavoidable” adverse impacts.

NDWA could find no mitigation monitoring plan, governance oversight entity, or adaptive management process specifically described for developing replacement mitigation measures in the event that an action portrayed in the RDEIR/SDEIS is ineffective.

Neither did the Delta ISB according to the following concerns regarding the effectiveness of adaptive management and mitigation measures due to inadequate funding and oversight:

- “We did not find examples of how adaptive management would be applied to assessing – and finding ways to reduce – the environmental impacts of project construction and operations.” (Pg 5)
- “The missing details also include commitments and funding needed for science-based adaptive management and restoration to be developed, and more importantly, to be effective.” (Pg 6)
- “The Current Draft does little more than promise that collaborations will occur and that adaptive management will be implemented.” (Pg 6)
- “The test will be whether the measures will be undertaken as planned, be as effective as hoped, and continue long enough to fully mitigate effects. This is where adaptive management and having contingency plans in place becomes critically important. It is not apparent that the mitigation plans include these components.” (Pg 13)
- “Monitoring is mentioned, but details of organization, intent, and resources seem lacking. Adequate funding to support monitoring, collaborative science, and adaptive management is a chronic problem.” (Pg 15)

Of most concern to the NDWA is the potential for breach of the 1981 Contract by DWR that could result in substantial adverse impacts on water users and the physical and human environment in the North Delta, if BDCP/WaterFix fails to properly implement compliance measures and/or mitigation measures to avoid or remedy violations of the 1981 Contract.

In order to protect Delta-as-Place in accordance with the coequal goals of the Delta Reform Act, the project description and RDEIR/SDEIS for the newly added CA WaterFix alternatives should explicitly describe at a minimum the entity responsible for:

- Oversight, administration, and approval of program funding, contracting, and resources;
- Oversight and implementation of mitigation measures, particularly their effectiveness in reducing adverse impacts consistent with CEQA/NEPA requirements;

²² See, e.g., *NEPA and CEQA: Integrating State and Federal Environmental Reviews*, Draft for Public Review and Comment, March 2013, the U.S. Council on Environmental Quality (CEQ) and CA Governor’s Office of Planning and Research

- Implementation of compliance monitoring and adaptive management measures;
- Acquisition of interests in real and personal property, and sequencing of permits and other authorizations; and
- Compliance of water operations with permit conditions and contractual obligations.

B. Enforcement Oversight and Mechanisms Needed

The Agency could only find cursory references to the NDWA and the 1981 Contract in BDCP/WaterFix. As the Agency asserts in comments above, the assurances provide to NDWA by DWR are particularly relevant to proposed SWP and CVP water operations in BDCP/WaterFix because the 1981 Contract requirements could significantly constrain such operations.²³

NDWA's prior comments also establish the fiscal ramifications if the terms and conditions of the 1981 Contract are violated as a result of BDCP/WaterFix operations. Despite DWR's long-standing acceptance and commitment to uphold the provisions of the 1981 Contract, NDWA is concerned about DWR's ability to do so, based upon recent exceedances of the Contract's water quality criteria during drought conditions experienced in 2015.

Permit conditions for CA WaterFix should therefore incorporate, at a minimum, the following requirements:

- Specific year-round water quality criteria, and avoid alteration of surface water elevations and natural flows that are detrimental to water users and Delta channels as 1981 Contract metrics to be achieved, including identification of enforcement triggers and mechanisms.
- Require DWR to annually disclose any operational changes, remedies for damages caused by prior year's operations that were implemented, and any significant physical modifications made to SWP facilities (i.e., alternative water supply infrastructure) implemented as a result of complying with water quality and supply obligations under the 1981 Contract.
- Require "compliance "with any and all DWR and USBR contractual obligations still in full force and effect that are associated with the operations of the SWP and CVP, including the NDWA 1981 Contract."
- Identify the entity responsible (among construction contractors, NMFS, USFWS, DWR, USBR, BDCP Implementation Office, and the other key players)) for the timing, implementation, and effectiveness of mitigation actions²⁴ contained in Mitigation Measures and *Avoidance and Minimization Measures* including the development of studies, field surveys, avoidance protocols, reports, best management practices, etc. to be implemented during all phases of the project from design to maintenance, monitoring, and adaptive management.

²³ This would apply to Contract violations caused by loss of water quantity or water quality, altered surface water elevations detrimental to water users, damage from seepage, harm caused by overland facilities, damage to existing flows and diversions, or any other provisions identified in Articles.

²⁴ Mitigation actions contained in the EIR/EIS's Mitigation Measures and Plan Appendix 3.C, *Avoidance and Minimization Measures*

- The entity responsible for ensuring adequate funding is available for all mitigation and *Avoidance and Minimization Measures* associated with CM1 and for annually reporting the fiscal costs of mitigation.
- What the Project and permit ramifications will be if the hundreds of mitigation and avoidance actions are not being properly implemented in a timely manner to alleviate adverse impacts.
- An annual assessment by the Delta ISB of DWR's compliance with the timing and effectiveness of mitigation measures in Final EIR/EIS and required as permit terms and conditions, with particular attention to any mitigation measures and actions that are behind in implementation or not performing as intended to reduce adverse impacts, and provide recommendations for alternative mitigation measures/actions to replace those that are not working. This will ensure that mitigation occurs and that adaptive management is properly applied to mitigation associated with construction of new water conveyance facilities.

C. Significant Environmental Uncertainty Warrants a Phased Approach

The NDWA agrees with Project proponents that uncertainty is not a good reason to do nothing. However, in the case of the BDCP/WaterFix, the high degree of uncertainty for achieving any meaningful benefits for covered species as expressed by independent science reviews and ESA permitting agencies,²⁵ results in a fundamental failure to comply with NEPA, CEQA, or state and federal endangered species laws.²⁶ According to the independent review of the Plan and Effects Analysis by fisheries biologist Dave Vogel, every aspect of the impacts of BDCP Preferred Alternative 4 on salmonids is either “uncertain” or “highly uncertain.”²⁷ Because WaterFix Preferred Alt. 4A relies on Effects Analysis for BDCP Alt. 4, Dr. Vogel's comments also apply to the new preferred alternative.

Despite the criticism of these uncertainties by independent scientists and fish agencies, the CA Waterfix fails to include precautionary measures such as phased construction so that a single intake in Hood would be operated long enough to include at least one dry year to establish adequate fish screen and operational criteria before additional intakes could be constructed.

Currently, the three new North Delta intakes would undergo some operational fish screen testing prior to full pumping but only *after* all three North Delta diversions have been built. If these never before-used screens do not function as planned in terms of fish protection, then this gamble will end up a losing proposition for at least one of the following: the Delta ecosystem, Delta-as-Place, or the CVP/SWP Delta export water contractors (who will be stuck with long-term payments on a very expensive stranded asset).

To mitigate environmental and human resource impacts, BDCP/WaterFix construction should be phased so that one intake is built and fish screen effectiveness and compliance with permits is tested and the water quality, elevation, and reverse flows monitored to assure the 1981 Contract and California's “No Injury” water rights rule are not being violated. The administration of Governor Edmund G. Brown, Jr. obviously agreed to this precautionary approach the first time

²⁵ Vogel Report, NAS Comments, ISB Comments, Latour, R., Ph.D., Technical Review of the Bay-Delta Conservation Plan (BDCP) and Related Environmental Impact Review (EIR) (May 16, 2014) (“Latour Report”)

²⁶ Vogel Report, Latour Report, NAS Comments, ISB Comments

²⁷ Vogel report

around in the Peripheral Canal legislation (ACA 90 and SB 200) and should do no less now with BDCP/WaterFix.

IX. EFFECTS ANALYSIS AND MODELING FLAWS

A. Flawed Modeling Underlying the Plan and EIR/EIS Prevents Evaluation of Impacts

The models used for evaluating water project operations, hydrodynamics, and water quality have been extensively modified for BDCP studies to calibrate for salinity, reflect current Biological Opinion operational constraints, and incorporate the proposed actions and water operations proposed in Alt. 4 and 4A.

These modified models have been found to be unreliable due to problems highlighted by an independent review, incorporated herein by reference in a report by MBK Engineers and Dan Steiner entitled *Report on Review of Bay-Delta Conservation Program Modeling* (“Modeling Report”).

As explained in the Modeling Report, the BDCP model is an outdated version of the CalSim II model, which contains known errors.²⁸ By definition, utilization of an outdated version of the CalSim II model does not constitute utilization of best available science.²⁹ Project proponents should conduct new model runs and Effects Analysis results using the current version of CalSim II for CA WaterFix alternatives.

The Modeling Report describes other significant problems with the BDCP modeling that should be addressed before running new modeling runs for WaterFix alternatives:

- Methodology used to incorporate climate change contains errors and does not incorporate reasonably foreseeable adaptation measures that would lessen the dramatic effects predicted by the model;
- Climate change hydrology in the Upper San Joaquin River basin was incorporated incorrectly into the BDCP Model;
- Includes predicted changes in precipitation and temperature without other changes, resulting in insufficient water needed to meet all regulatory objectives and user demands.

Each one of the above problems contained in the BDCP’s models and methodology alter the outcomes in ways that could mask a greater severity in impacts to Delta water quality, temperature, elevations, and unnatural flows posed by BDCP/WaterFix alternatives. The cumulative nature of these miscalculations essentially renders the BDCP modeling and Effects Analysis useless for making impact conclusions for new CA WaterFix alternatives. In particular, the modeling and Effects Analysis does not adequately evaluate water quality and supply data critical to enforcement of NDWA’s 1981 Contract.

Once these modeling anomalies are corrected and an operations plan is defined, the NDWA will be able to evaluate whether proposed BDCP/WaterFix reconfiguration of SWP and CVP water

²⁸ These errors are discussed at greater length in the Modeling Report.

²⁹ Note that NEPA requires application of information of “high quality” and professional integrity. 40 CFR 1500.1, 1502.24. Finally, the *Delta Plan* requires application of best available science for all covered actions.

facilities and alteration of Delta hydrology will be in compliance with DWR's assurances provided to North Delta water users in the 1981 Contract.

B. The Modeling Fails to Include the 1981 Contract Requirements

Under CEQA and NEPA, an EIR/EIS must include a description of the physical environmental conditions in the vicinity of the project from both a local and regional perspective.³⁰ An accurate description of the environmental setting of the Project is critical because it establishes the baseline physical conditions against which a lead agency can determine whether an impact is significant.³¹ Most importantly, the baseline helps the public discern its impact on the local natural resources and human environments.³²

Therefore, to comply with CEQA guidelines and case law, all hydrologic modeling undertaken in connection with BDCP/WaterFix must assume as part of the "baseline" condition that the terms and conditions of the 1981 Contract will remain in full force and effect. This includes DWR's obligations to operate the SWP to maintain water quality and supply in accordance with Articles 2, 6 and 8.

To date, the hydrologic modeling underlying BDCP/WaterFix and EIR/EIS fails to do so – even though the NDWA at its own expense has provided a modeling tool to incorporate into BDCP's Effects Analysis modeling to ensure the Contract's criteria is analyzed as a baseline condition of SWP operations. This inclusion is important because the Contract's salinity objectives differ in certain key respects from the water quality requirements in the SWRCB's current Water Quality Control Plan for the Delta (D-1641), particularly in the late summer months where the 1981 Contract requirements are more stringent from a water quality standpoint.

The California Water and Environmental Modeling Forum and ISB should perform an independent verification of the modeling tools prior to conducting new model runs, to ensure that the best science available is deployed in the best manner possible.

C. Averaging in Modeling Methodology Can Obscure Significant Fluctuation of Salinity Increases

The BDCP Effects Analysis makes extensive use of averaging, which is also used in the CA WaterFix alternatives. Unfortunately, by its nature, averaging obscures the extreme values that – for some variables and biological and hydrological systems – masks true water quality, water supply, flood risk, and species impacts. For example, the Effects Analysis analyzes X2 values averaged from December to May, even though that period encompasses a huge seasonal range in natural Delta outflow patterns.

Averaging across these periods tends to conceal larger changes in Delta outflow within and across years that may occur over operation of new CA WaterFix facilities. CA WaterFix's

³⁰ CEQA Guidelines §15125(a)

³¹ Id.

³² See, e.g., *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310 (The ultimate goal in fixing a baseline is to "give the public and decision makers the most accurate picture practically possible of the project's likely impacts.")

reliance on the BDCP's use of a 5-month average in the modeling of compliance with X2 requirements could have problematic results, such as a decrease in the temporal variability in salinity that historical conditions and existing Delta standards provide. Improperly treating water quality as a long-term average rather than a daily issue could result in hiding the significant fluctuation of salinity increases that could occur under Alt. 4/4A water operations as proposed. Depending on water quality conditions, water users may make decisions on water diversions on a daily basis and sometimes hourly basis, sometimes diverting only during certain tidal cycles. Thus, averaging salinity impacts particularly over a long period fails to identify impacts to local water users.

D. Modeling Flaws Mask Nature, Extent, And Severity of Salinity Impacts

Changes in Delta hydrology can influence water quality across a broad range of constituents. Currently, all of the waterways of the Bay Delta are water-quality impaired for one or more contaminants;³³ therefore, any changes that worsen the existing conditions also exponentially increases the level of significance of each impact under each alternative.

The following salinity impacts are of particular concern to NDWA:

- Sea water intrusion as a result of sea level rise or decreased Delta outflow can increase the concentration of salts (i.e. bromides, chlorides, etc.).
- Long-term average annual Delta outflow is anticipated to decrease under Alt. 4/4A by between 864 (scenario H1) and 5 TAF (scenario H4) relative to the No Action Alternative, attributable only to changes in operations. The result of this will be increased sea water intrusion in the western Delta.
- Overall effects would be greatest at Barker Slough, where substantial increase in long-term average bromide concentrations under all operational scenarios are predicted, but would be greatest for Scenario H2.
- Salinity level increases in South and Western Delta are labeled as “unavoidable” adverse impacts due to uncertainties surrounding the effectiveness of the mitigation measures to reduce adverse water quality effects. (Impact WQ-11)

X. WATER SUPPLY AND QUALITY CONCERNS

A. Alteration of Natural Tides Create Elevation and Water Quality Concerns

When export levels are low,³⁴ the Sacramento River's flow is dominantly tidal with both positive (flow to the north) and negative (flow to the south) oscillations of similar magnitudes with the tides, averaging to a net flow of approximately zero. As exports increase in mid- to late-June, the oscillations shift such that the net flow becomes negative and the number of hours each day

³³ United States Environmental Protection Agency, Staff Report: Analysis of Water Quality Issues in EPA's February 2011 ANPR (2011). Available at <http://www2.epa.gov/sites/production/files/documents/actionplan-appx1.pdf>

³⁴ As one example, refer to the data for June 2007.

when the flow moves to the north is reduced. From mid-July through August, when total exports at South Delta continuously exceed 10,000 cfs, the flow becomes primarily to the south, effectively eliminating the natural ebb tidal flow that would occur otherwise. This creates an unnatural flow pattern in which water no longer oscillates between north and south, but simply flows constantly south in a reverse flow.

The subsequent impact on water quality within the Delta is likely to be substantial according to BDCP's modeling results for Alt. 4/4A.³⁵

BDCP/WaterFix should conduct new modeling using the recalibrations requested in previous comments to provide a robust analysis of the changes in tidal excursions in the Plan Area and identification of impacts in the EIR/EIS to provide more detail on water quality, surface water elevations (water supply), and covered fish species. This analysis should include specific details on the timing, locations, duration, and intensity of the alteration of natural tides in the Plan Area and appropriate mitigations to reduce any adverse impacts on beneficial uses.

B. Altered Water Elevations Not Analyzed for Impacts to Delta Water Supply or Potential for Specific Damages Under NDWA 1981 Contract

The Preferred Alternatives 4/4A construction and ongoing operations will alter both surface and groundwater elevations within NDWA, including reduced surface flows in September within NDWA in about half of all years.³⁶

The NDWA is concerned about the water supply availability impacts that alterations in water elevations pose to water users and other beneficial uses in the North Delta:

- More than 2,500 water diversions, including diversions for agricultural uses, in the Plan area.³⁷
- Groundwater is used throughout the Delta for agricultural, municipal, and industrial beneficial uses, particularly in the North Delta for irrigation of orchards. In the upland peripheral Delta areas, average annual groundwater pumping is estimated to range between 100,000 and 150,000 acre-feet, both for domestic and agricultural uses.

The NDWA is particularly concerned with potential reductions in water surface water elevations within the North Delta that could constitute a breach of DWR's obligations under Article 6 of the 1981 Contract.³⁸ Such violations of the 1981 Contract would give rise to damage claims against the State by water diverters within NDWA.³⁹

A reduction in surface water elevations would adversely affect water supply availability within NDWA in ways that were neither acknowledged nor analyzed. For example, the impact to agricultural water diverters that utilize gravity siphons and other irrigation systems designed to

³⁵ See Exhibits C and E.

³⁶ BDCP Chap 5, page 5.3-4.

³⁷ Plan Chapter 5 Effects Analysis

³⁸ NDWA 1981 Contract, Art. 6 ("The state shall not... cause the water surface elevations in Delta channels to be altered to the detriment of Delta channels or water users within the Agency...").

³⁹ *Id.* ("...the State shall repair or alleviate the damage... and shall be responsible for all diversion facility modifications required.")

optimize water diversion and conveyance based on the *current* flow and water level regime have not been analyzed. The gravity siphons and pumps that are used to divert surface water in NDWA simply will not work effectively if water surface elevations are significantly reduced, as contemplated in the Plan. If siphons are rendered inoperable it would become necessary for Delta diverters to install mechanical pumps powered either by electricity (which is often infeasible) or internal combustion engines. If the latter are used, this would cause air quality and other impacts that also are not analyzed in the RDEIR/SDEIS.

In addition, the irrigation systems designed based on the use of siphons and gravity diversions would need to be reconfigured. The increased capital and operation and maintenance costs associated with reconfiguring conveyance systems and the conversion to mechanical pumps would be substantial. NEPA requires that the “human” (including economic) impacts associated with increased costs of Delta water diversions be fully analyzed.⁴⁰ BDCP/WaterFix fails to analyze these impacts, because it does not weigh the substantial increased capital and operation and maintenance costs associated with conversion to mechanical pumps.

Due to the Delta’s high reliance on groundwater for agricultural and domestic water supplies, the lowering of groundwater elevations during construction dewatering would also create significant adverse impacts on those beneficial uses, including a loss of sub-irrigation. A reduction in sub-irrigation would, in turn, require increased surface water diversions by agricultural water users.

Using the updated CalSim model, DWR should conduct new Effects Analysis modeling with a robust emphasis on analyzing the water supply impacts on NDWA water users and channels caused by altered surface elevations (higher and lower). Further, the BDCP/WaterFix EIR/EIS should identify, disclose and mitigate contractual issues in the *Water Supply Chapter*, including the potential for increased salinity intrusion, erosion and seepage damage, reversed or otherwise unnatural flows, fish stranding, and other local diversion intake effects. Impacts analysis and disclosure in the EIR/EIS needs to provide details on specific locations, durations, timing, size, and intensity in order to comply with NEPA requirements. (40 CFR § 1508.27(a))⁴¹

C. Water Supply Chapter Silent on Impacts to Delta Water Users

Inexplicably, the EIR/EIS *Chapter 5 Water Supply* contains no discussion, disclosure, or mitigation of adverse impacts to water supplies in the Plan Area (Delta) caused under any of the BDCP/WaterFix alternatives. The chapter’s section on regional water use mentions the role of entities such as NDWA which does not even divert or supply water as is implied, but then fails to actually describe how, where, by what method, or for what purpose water is used in the Plan Area. The absence of describing the context in which local water supplies are accessed and used, results in the EIR/EIS *Water Supply Chapter 5* failing to properly disclose the level of significant impacts imposed on agricultural and municipal water users in the Plan Area.

The reduced water quality conditions created by BDCP/WaterFix operations is a “taking” of water rights due to the water supplies in the Plan Area essentially being degraded to the point of significant impairment of existing beneficial uses, requiring compensation under the law and

⁴⁰ Council On Environmental Quality, Executive Office Of The President, *A Citizen’s Guide to the NEPA* (“NEPA requires Federal agencies to consider environmental effects that include, among others, impacts on social, cultural, and economic resources, as well as natural resources.”)

⁴¹ Specifically, 40 CFR § 1508.27(a), requiring analysis of the context and intensity of the impacts.

under the 1981 Contract. The EIR/EIS must acknowledge and mitigate these adverse impacts in the Water Supply Chapter and consider whether the damage to water users is a violation of California's "No Injury Rule," statutes governing "Priority of Water Rights," or standards in CEQA and NEPA governing disclosure, weighting of impacts, and cumulative effects on environmental and human resources.

X. Conclusion

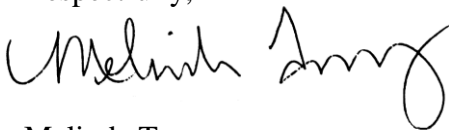
The very preliminary conceptual nature of the BDCP/CA WaterFix project alternatives, results in a failure to assess numerous significant impacts and development of CEQA/NEPA conclusions that are primarily based on conjecture. In addition, the water quality and availability impacts are nearly impossible to decipher due to the disjointed document organization and presentation; and therefore fails to satisfy the most basic requirement of CEQA – to inform the public about the environmental consequences of a proposed decision or project.

As pointed out by the Delta Independent Science Board, the CA WaterFix project alternatives and RDEIR/SDEIS lack completeness, defer essential material to the Final EIR/EIS, and retain a number of deficiencies inherent in the 2014 BDCP DEIR/DEIS.

These limiting factors prevent NDWA, its water users, and the general public from fully understanding the true scope, severity, and duration of potential environmental and economic effects associated with the construction, permitting, operation, and mitigation of BDCP/WaterFix project components.

The substantial inadequacies of the BDCP/WaterFix alternatives and RDEIR/SDEIS fail to protect people and property in the Plan Area or meet the legal requirements for state and federal endangered species, environmental assessment, or various Delta protection laws. Therefore, the Agency requests the State to revise per comments contained herein and once again recirculate the Plan and EIR/EIS for public review and comment.

Respectfully,

A handwritten signature in black ink, appearing to read "Melinda Terry". The signature is fluid and cursive, with a large loop at the end.

Melinda Terry,
Manager
North Delta Water Agency