NCWA
Northern California Water Association

To advance the economic, social and environmental sustainability of Northern California by enhancing and preserving the water rights, supplies and water quality.

November 9, 2017

Via Electronic Mail Only

Felicia Marcus, Chair
Members of the Board
State Water Resources Control Board
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Re: Phase II Bay-Delta Plan Input Pursuant to October 4, 2017 Notice; Final Phase II Scientific Basis Report

Dear Chair Marcus and Members of the Board:

The Northern California Water Association (NCWA) and the Sacramento Valley Water Users (SVWU) provide the following comments in response to the State Water Resources Control Board's (State Water Board) October 4, 2017 Notice of Opportunity to Provide Input to Inform the Development of the Program of Implementation for the Phase II Update of the Bay-Delta Water Quality Control Plan (Bay-Delta Plan). This letter also includes our initial comments on the October 2017 final Scientific Basis Report for the Phase II Update (Final SBR).

NCWA and the SVWU have actively participated in the State Water Board's public processes over the past several years by providing significant and meaningful input on the best approach to updating the Bay-Delta Plan, and by identifying the best available scientific information to support the State Water Board's decisions. In this regard, we presented substantial expert testimony and written submittals during the State Water Board's 2012 science and technical workshops regarding potential changes to the Bay-Delta Plan. (See Final SBR, section 1.2.5.) In addition, we provided a panel presentation at the State Water Board's December 7, 2016 workshop regarding the October 2016 draft Scientific Basis Report (Draft SBR). On December 16, 2016, we submitted detailed written comments, with extensive supporting scientific information, regarding the deficiencies of the Draft SBR.[1]

[1] These written comments, incorporated herein by reference, comprised 194 pages, including 12 appendices of supporting technical and policy information.

NCWA and the SVWU remain opposed to the State Water Board staff's efforts to pursue a rigid and scientifically outdated "unimpaired flow" approach. This outdated approach is at the core of the Final SBR, and is reflected in the premature questions in the October 4, 2017 Notice. The "unimpaired flow" approach, if implemented, would negatively affect numerous beneficial uses of water to the detriment of the state's environment and economy.

As detailed in this letter, the Final SBR improperly refers only to scientific evidence that is consistent with the report's conclusions, and the Final SBR consistently ignores reliable scientific reports submitted by NCWA/SVWU and others—including peer-reviewed scientific reports that have been published in independent scientific journals—that do not support the report's conclusions. This selective consideration and discussion of only certain evidence while ignoring contrary evidence raises fundamental questions regarding the objectivity and scientific rigor of the entire Phase II process.

Accordingly, we request that the State Water Board Members and staff take a fresh and scientifically defensible look at the best approaches for updating the Bay-Delta Plan to provide reasonable protection for all beneficial uses of water. We believe that the best means to accomplish this is by pursuing a "*functional flow*" approach where every drop of water will serve a specific and targeted beneficial use or multiple uses.

In response to the October 4, 2017 Notice, we have the following comments.

1. NCWA/SVWU Disagree with State Water Board Staff's Assumption that the State Water Board Should Adopt the Proposed New Water-Quality Objectives in the Final SBR

Almost all of the State Water Board staff questions regarding development of a new program of implementation for the Bay-Delta Plan assume that the State Water Board should and will adopt the proposed new water quality objectives in the Final SBR. (See October 4, 2017 Notice, p. 2.) These questions, therefore, only concern issues regarding implementation of those proposed objectives.

NCWA and the SVWU disagree with this assumption because the State Water Board has not adopted any new water quality objectives. Moreover, as discussed below, the proposed new objectives have several serious and fundamental defects, and the State Water Board should not adopt them. Until there is a set of reasonable proposed amendments to the existing objectives that will provide reasonable protection of all beneficial uses, it would be premature to attempt to develop a new program of implementation.

2. The Final SBR Ignores the December 2016 Detailed Comments Submitted by NCWA, the SVWU, and American River Interests on the Draft SBR; The State Water Board Should Consider These Comments as it Prepares Proposed New Water Quality Objectives

Our December 16, 2016 written comments on the Draft SBR described in detail the defects of the "unimpaired flow" approach in the draft report, and proposed an alternative, "functional flow" approach. In summary, our comments discussed the following defects with the unimpaired flow approach:

- The unimpaired-flow water quality objectives are not likely to benefit fish in the Delta. Dedicating large blocks of clear water released from upstream reservoirs to maintain Delta outflows through riprapped river channels would provide little or no benefit to fish in the Delta. This is evidenced by the fact that the re-directions of 1.3 million acre-feet per year of water for Delta outflows, by State Water Board Decision 1641 and the federal Endangered Species Act biological opinions for Delta smelt and Central Valley salmonids, have not improved the populations of these fish species.

- An unimpaired-flow approach would have significant impacts on nearly every type of beneficial use of water in Northern California, including: (a) significant impacts on coldwater pools in upstream reservoirs that are needed to provide coldwater releases for salmon spawning and rearing habitats; (b) significant impacts on water supplies needed for birds along the Pacific Flyway; (c) significant impacts on water supplies needed for fish habitat preservation and enhancement projects; (d) significant impacts on water supplies for cities, rural communities, and farms; (e) significant impacts on carryover surface water supplies needed for drought conditions; (f) significant impacts on the ability to generate clean, renewable hydropower; (g) significant impacts on recreational facilities and opportunities; and (h) significant impacts on groundwater supplies, contrary to the policies of the Sustainable Groundwater Management Act.

Our prior comments also contained substantial technical information regarding salmonid and pelagic fish issues, which the Final SBR almost completely ignores. Regarding **salmon**, our comments discussed the technical comments and recommendations of David Vogel, an expert with extensive experience working on Sacramento Valley salmonid issues. Appendix 3 to those comments contained Mr. Vogel's technical comments on and recommendations regarding the Draft SBR. The key points in Mr. Vogel's technical report were:

- Information regarding Sacramento River basin anadromous salmonids was incomplete and largely out-of-date.

- Many statements in the Draft SBR regarding anadromous salmonids were unsubstantiated with no supporting scientific basis.

- The Draft SBR did not address major scientific uncertainties or highly complex variables affecting salmonids.

- There were numerous conflicting and confusing statements in the Draft SBR concerning unimpaired flows and natural flows.

- The Draft SBR was severely deficient in not providing any meaningful details on non-flow measures that could be implemented to benefit salmonids.

- The Draft SBR did not adequately describe the specific biological mechanisms that would result from the flow recommendations, and did not quantify how those mechanisms would benefit anadromous salmonids.

- The Draft SBR did not provide any meaningful discussion of the redirected impacts on other species and life stages that would result from the flow recommendations – e.g., major reductions in water storage in the large reservoirs (Shasta, Oroville, Folsom).

- The Draft SBR section concerning effects of other stressors on anadromous salmonids was severely deficient, and did not discuss additional management actions that could be implemented to benefit salmonids.

The Final SBR does not cite, refer to, or discuss any of this information or address any of these comments.

Regarding **pelagic fish**, our December 16, 2016 comments discussed the technical comments of Dr. Robert Latour, who has conducted extensive analyses of the available data regarding Delta pelagic fish. Appendix 4 to those comments contained copies of Dr. Latour's technical report and two related peer-reviewed, published scientific reports. The key points in Dr. Latour's technical report were:

- The Draft SBR did not consider peer-reviewed, published scientific reports that demonstrate that statistical analyses based on Fall Midwater Trawl indices are flawed.

- By relying strictly on survey indices, the Draft SBR disregarded a very large amount of instructive information concerning the relationship between fish behavior and conditions and environmental variables. The basis for a much more robust analysis is readily available in existing data if the analyses are based on the raw survey data, rather than only on the indices, as is the currently dominant approach.

- The Draft SBR did not account for known and significant scientific uncertainty with current fish abundance indices. Failing to account for that uncertainty significantly detracts from the value of any analysis based on those indices or used for any resultant policymaking.

- As a result of these problems with the current method of analysis of the relationship between environmental variables and Delta fish populations, including the analyses reflected in the Draft SBR, the Draft SBR did not meet the scientific standards applied by, among other agencies in the United States, NOAA Fisheries in developing policy for other fish-management programs, such as setting acceptable levels of commercial fish harvest.

The Final SBR largely ignores these comments. Our December 16, 2016 comments cited Newman, K. 2008. *Sample design-based methodology for estimating delta smelt abundance,* San Francisco Estuary & Watershed Science 6(3), and included a copy of this report in Appendix 4. The Final SBR does not cite this report. Our comments also cited Latour, R.J. 2016. *Explaining patterns of pelagic fish abundance in the Sacramento-San Joaquin Delta*, Estuaries and Coasts 39:233-247, and included a copy of this report in Appendix 4. The Final SBR cites this report only once (SBR, p. 3-9) and, as discussed below, ignores the report's key conclusions. The failure of the Final SBR to substantively address the concerns described by Mr. Vogel and Dr. Latour exemplifies a choice to ignore scientific information that does not support the Final SBR's conclusions. As mentioned above, this failure casts serious doubt on whether or not the Final SBR provides an adequate scientific basis for future actions by the State Water Board.

Additional comments submitted on the Draft SBR demonstrate that imposing unimpaired flow regimes in the Sacramento River watershed would undermine significant fishery success stories like those seen on the lower American River and in Butte Creek. These tributaries are seeing positive fishery gains from management of functional flows and habitat improvements. The American River Water Forum provided written comments on December 16, 2016, and provided a presentation[2] at the State Water Board's December 7, 2016 public workshop regarding the Draft SBR, describing the adverse impacts to lower American River fisheries that would result from an unimpaired flow approach.

[2] The Water Forum's presentation is posted on the State Water Board's webpage for its Bay-Delta Program at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/20161207_gohring_presentation.pdf.

3. The Final SBR Continues to Incorrectly Assume that Correlations Between Flows and Fish Abundance Indices Indicate that Higher Flows Cause Higher Abundance Indices

The Final SBR continues the Draft SBR's practice of repeatedly assuming that correlations between higher flows and higher fish abundance indices mean that higher flows caused the higher abundance indices. For example, on page 1-20, the Final SBR states:

> The last 5 years have provided a dramatic example of the importance of flow for native fish species. Following the wet conditions of 2011, population abundance of longfin smelt, Delta smelt, Sacramento splittail, and other species all increased. The next 4 years were very dry and the abundance of each of these species has fallen and is now at or near its all-time recorded lowest level. High flows have resulted in greater abundance of native fish while low flows produced population declines. (Emphasis added.)

Similarly, on page 3-96, the Final SBR states:

> More Delta outflow in winter and spring has consistently been associated with a higher abundance of fish in fall. The relationship demonstrates that one option for increasing population abundance of these species is to increase Delta outflow in the winter and spring. (Emphasis added.)

However, even the Final SBR acknowledges that "the specific mechanisms underlying the flow-abundance relationships are generally not resolved," and that other conditions like floodplain inundation and increased turbidity that occur during natural storm events may have beneficial effects on Delta fish. (Final SBR, pp. 3-8 to 3-9.) Moreover, many of the correlations between higher Delta outflows and higher fish abundance indices that are shown in graphs in the Final SBR are driven largely by very high Delta outflows (greater than 50,000 cubic-feet per second) (see, e.g., Final SBR, p. 3-55) that cannot be implemented through controlled water project operations, and instead occur only during large storms.

As discussed in detail in the Latour report, detailed statistical analyses of all of the available catch per unit effort (CPUE) data, and not just of the fish abundance indices, demonstrate that CPUE trends for all Delta fish species are best explained by the amounts of total suspended solids (an indicator of turbidity), and not by other parameters like water flow. (Latour, R.J. 2016, *supra*, copy in Appendix 4 of our December 16, 2016 comments.)

These analyses indicate that many important parameters, including higher turbidity, that are associated with high winter storm flows may be necessary to provide better fish habitat conditions, and that higher flows associated with water project operations alone (without the other conditions associated with winter storms) may not lead to higher fish populations.

It is particularly striking that the Final SBR makes no attempt to reconcile its abundance index-based statistical analysis with the more thorough analysis contained in Dr. Latour's peer-reviewed paper. (See Latour, R.J. 2016, *supra*.) That paper demonstrates that, when CPUE analyses are applied to the actual survey data underlying the Fall Midwater Trawl, total suspended solids (TSS) is a much more significant predictor of Delta fish abundance than flows. In fact, this peer-reviewed analysis suggests that new water quality objectives that would reduce TSS by requiring higher releases of clear water from reservoirs actually might worsen conditions for Delta fish. Yet the Final SBR cites this peer-reviewed paper only once (p. 3-9) and makes no attempt to address Dr. Latour's analyses.

Accordingly, the Final SBR's heavy reliance on simplistic analyses of correlations between flows and fish abundance indices is misplaced.

4. The Peer Review Process Undertaken for the SBR Was Deficient

Unfortunately, the peer review process conducted pursuant to Health and Safety Code section 57004 did not adequately address the aforementioned defects in the Draft SBR, because State Water Board staff's questions presented to the peer review panel focused on general conclusions. State Water Board staff instead should have asked the panel to review the biological mechanisms at issue in the Delta, the anticipated results of each proposed objective, and the degree of uncertainty in the anticipated results. Most importantly, State Water Board staff should have asked the peer review panel to provide input on whether an alternative methodology or approach to updating the objectives would provide similar levels of benefit, protection, and uncertainty with lower water costs.[3] That type of input is critical for the State Water Board to comply with its obligations to consider whether the proposed changes to the Bay-Delta Plan would be reasonable, "considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." (Wat. Code, § 13000.)

5. The Final SBR's Proposed Objectives Are Not Well Defined, and Any Further Development of New Objectives Should Be Based Upon the Functional Flow Approach

The proposed narrative objective for Delta inflows in the Final SBR (p. 5-16) and the proposed narrative objective for cold water habitat (p. 5-42) are so general that it is impossible to determine what water project and reservoir operations would be necessary to implement them. Similarly, because the Final SBR's proposed numeric inflow objective does not specify what percent of unimpaired flow it proposes, and because the range of 35 to 75 percent that is "under consideration" (p. 5-16) is so broad, it is impossible to tell what flows, and what changes in water project operations, would be necessary to implement it. In fact, it is impossible to identify what, if any, science would actually support the proposed

[3] Appendix 12 of our December 16, 2016 written comments requested State Water Board staff to present these questions to the peer review panel, but staff apparently rejected that request.

objectives because they are so vague that it is impossible to know what real-world conditions would occur if they were implemented.

It is impossible for the State Water Board to conduct the analyses of these proposed objectives that is required by the California Environmental Quality Act, or to determine whether these objectives would satisfy the requirements of the Porter-Cologne Water Quality Control Act, Water Code section 13241. Until more specific proposed objectives are developed, it is premature to attempt to develop any proposed program of implementation.

In any event, rather than continuing to pursue the unimpaired flow approach and proposed objectives like those in the Final SBR, the State Water Board instead should develop alternative objectives based on the functional flow approach discussed in our December 16, 2016 written comments. In this regard, for the past several decades, the State Water Board has employed flow-only measures to attempt to halt the decline and help restore the Bay-Delta ecosystem. In that time, fishery populations have continued to decline, notwithstanding the ever-greater quantities of water directed at attempting to "solve" the problem. In the California Water Action Plan, the administration committed itself to seeking transformative change by embracing new science and re-thinking old assumptions. Embracing a functional flow approach would encourage a wide variety of stakeholders to continue to collaborate to restore the ecosystem.

6. Negotiated Voluntary Agreements Can Most Effectively Implement the Protection of Beneficial Uses in the Bay-Delta

As we have emphasized in our prior comments, current regulatory solutions are not working well for any beneficial uses that depend on water in the Sacramento Valley or the Delta. Moreover, further regulatory actions will generally take decades to implement. On the other hand, the California Water Action Plan calls for a coordinated and collaborative approach that encourages negotiated voluntary agreements. (See California Water Action Plan, p. 18.) For this administration to be successful in the water arena, negotiated resolutions (not prescriptive actions) that implement functional flows and other measures will be essential and will lead to more sustainable outcomes. NCWA and the SVWU are committed to continuing efforts to reach a negotiated resolution, and developing voluntary agreements for the Sacramento Valley and the Delta.

The Final SBR indicates that negotiated voluntary agreements are encouraged as an implementation mechanism for the Phase II update. The State Water Board's Fact Sheet (dated October 4, 2017) for the Bay-Delta Plan Update, however, indicates that non-flow measures in any such voluntary agreements "may support a change in the required percent of unimpaired flow, *within the range prescribed by the flow objectives*." (Fact Sheet at p. 12, emphasis added.) As such, State Water Board staff is attempting to pre-determine, without sufficient scientific justification, that any voluntary agreements must include measures to achieve at least the lower end of staff's proposed unimpaired flow range to be eligible for

acceptance by the State Water Board. This limitation will likely have a chilling effect on parties reaching any voluntary agreements, and for the reasons stated above, the State Water Board should reject it. Unadopted staff proposals for new Delta water quality objectives cannot and should not be used to assess the appropriateness of viable alternatives, especially when, for the reasons described above, the scientific basis of such proposals is very much in question.

7. Conclusion

We appreciate the opportunity to provide these comments on the Phase II Bay-Delta Plan Update and the Final SBR, and we stand ready to assist the State Water Board in taking a fresh look at whether and, if so, how to update the Bay-Delta Plan.

Sincerely yours,

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