Division of Water Rights staff propose the following changes to the Draft 2009 Periodic Review Staff Report:

(Changes included in Staff Change #1 (July 2, 2009) are shown by single strikethrough and underline. Additional changes for Staff Change #2 are shown in double strikethrough and underline.)

1. Table of Contents:

   Page 1, Amend VI. Appendix A…58

   VI. Appendix A**: Summary and responses to comments received in response to Notice of Public Workshop on Review of the 2006 Bay-Delta Plan and Request for Written Input on Factual Issues…….58**

   Page 1, Add below VI. Appendix A…58

   VII. Appendix B: Comment letters received in response to the Notice of Adoption Hearing of 2009 Draft Periodic Review Staff Report……..72

2. Executive Summary:

   Page 4, Para. 1

   For each issue, the Staff Report includes a description of the issue, staff's recommendation related to that issue, a brief discussion regarding the current scientific understanding of the issue, and a conclusion **with an expanded recommendation**.

   Page 4, Para 3

   Staff recommends that the following issues not be reviewed further in the~~i~~**is** basin planning process at this time, but instead be addressed as recommended in the associated discussion for each issue.

   Page 5, Add three new paragraphs under list ending with Biological Indicators

   Ammonia and toxicity are priority issues for the Water Boards and, at this time, staff recommends that they be addressed primarily by the San Francisco Bay and Central Valley Regional Water Quality Control Boards (Regional Boards) as part of their water quality control programs for control of point and non-point sources of waste. The State Water Board and Regional Boards will continue to coordinate their efforts on these issues through the Water Boards Bay-Delta Team, which consists of representatives from the Division of Water Rights, the Division of Water Quality, the Division of Financial Assistance, and the Regional Boards. Ammonia and toxicity effects on beneficial uses will also continue to be considered during the State Water Board's review of various flow objectives.

   The existing narrative salmon protection objective (salmon doubling) has also been suggested for review but is not discussed separately in the staff report. Instead, recognizing that salmon production is linked to flow and water quality conditions, staff proposes to consider the narrative salmon protection objective as a part of the State Water Board's further review of flow and water quality objectives. Protection of fish and wildlife resources such as salmon, steelhead, sturgeon, and the POD species is the primary purpose of most of the objectives recommended for further consideration in the water quality control planning process. For example, review of the Delta Cross Channel gate closure objective is recommended for review largely because of the cross

channel's potential effects on the survival of juvenile salmon. Consideration of biological information (including salmon production numbers) will be an essential part of the flow and water quality objective development process. Staff also recommends that the State Water Board explore using biological indicators in the program of implementation as an adaptive management tool for implementing water quality and flow objectives.

This Staff Report identifies priority issues and recommends further review of these issues. In preparing this report, staff conducted an initial review of the scientific literature and summarized the conclusions therein; staff did not independently analyze data or draw independent scientific or regulatory conclusions from the literature. The summary discussion of the preliminary literature review is included in the Staff Report to assist the public in understanding the key sources of information supporting the staff recommendations. The Staff Report does not establish findings of fact. Nor does the summary of the scientific literature represent the final conclusions of the State Water Board on these issues. The information on which the report is based will be subject to further review and evaluation during the next phase of the water quality planning process in which the State Water Board considers potential amendments to the 2006 Bay-Delta Plan. Interested persons will have an additional opportunity to provide input and comment on potential amendments and the science underlying such amendments in this next phase. To ensure that staff continues to evaluate information contained in the comments received during this periodic review, those comments are appended to this report as Appendix B.

3. Water Quality Control Plan Process:
Comments Received

Page 11, amend list of comments received at the periodic review workshop held on October 8, 2008 by removing the following commenter

- ~~**South Delta Water Agency**~~

Page 11, Add new paragraph, below bullet identifying United States Department of the Interior

The State Water Board received comments in response to the May 15 Notice of Adoption Hearing for the 2009 Draft Periodic Review Staff Report of the 2006 Water Quality Control Plan for the San Francisco Bay/ Sacramento- San Joaquin Delta Estuary from the following organizations:

- **The Bay Institute and National Resources Defense Council**
- **California Farm Bureau Federation**
- **California Water Impact Network and California Sportfishing Protection Alliance**
- **Central Delta Water Agency**
- **Central Valley Clean Water Association**
- **City of Tracy**
- **Department of Water Resources**
- **Sacramento Regional County Sanitation District**
- **San Francisco Bay Conservation and Development Commission (Late)**
- **San Joaquin River Group**
- **San Luis & Delta-Mendota Water Authority and Westlands Water District**
- **South Delta Water Agency**
- **State Water Contractors**
- **Stockton East Water District**

- **United States Department of the Interior**
- **United States Environmental Protection Agency**

Page 11, amend paragraph below new paragraph inserted pursuant to item 3, and above Next Steps heading

The periodic review notice, fact finding request, transcript from the October 8, 2008 workshop, ~~and~~ the written comments in response to the periodic review notice and the fact finding request**, and the written comments in response to the May 15 Notice of Adoption Hearing on the Draft Staff Report** are posted on the State Water Board's Division of Water Rights' website at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/periodic_review/index.shtml. In addition, Appendix A to this report includes a summary of the comments **received in response to the October 2008 workshop notice and fact finding request** and responses to ~~those~~ comments ~~as they apply to the periodic review of the Bay-Delta Plan~~ **that are relevant to the periodic review of the Bay-Delta Plan**. **Appendix B to this report includes the comment letters received in response to the release of the May 2009 Draft Staff Report.**

4. Delta Outflow Objectives:

Page 16, Para. 2, Line 4.

Freshwater flow is an important cue for upstream migration of adult salmon and is a ~~significant~~ factor in the survival of smolts moving downstream through the Delta.

Page 17, Para.2, Line 7.

~~Water temperature and s~~**S**alinity ~~are~~ **is** directly related to outflow.

5. Suisun Marsh Objectives:

Page 23, last paragragh, Line 6.

A public draft is expected in ~~mid~~ **late** 2009, with a final EIS/EIR in early 2010.

6. Floodplain Flow Objectives:

Page 26, Para. 2, Line 3.

Sommer et al. (2001a) and Opperman (2006) found that floodplain habitat promotes rapid growth ~~and increases survival~~ of juvenile Chinook salmon.

Page 26, Para. 4.

Declines in fishes and other aquatic species have been linked to reduced phytoplankton production and abundance (Baxter et al. 2008a). ~~Due to the lack of river-floodplain connectivity throughout much of the Delta and its watershed, restoration~~ **Inundation** of floodplains and other shallow-water habitats **increase the production of organic matter including phytoplankton** ~~have been proposed to maintain biodiversity of native aquatic species and restore fisheries in the San Francisco Estuary by increasing phytoplankton abundance~~ (**Jassby & Cloern 2000,** Schemel et al. 2004). ~~Declines in fishes and other aquatic species have been linked to reduced phytoplankton production and abundance~~. Sommer et al. (2001b) suggests that floodplain restoration could support the downstream food web as a result of enhanced production of phytoplankton and detritus material ~~(Sommer et al. 2004)~~. Phytoplankton-enrich~~ment~~**ed floodplain drainage** has been documented following **a** high-flow year~~s~~ when the Sacramento River inundates**d** ~~its~~ **the Yolo Bypass** floodplain~~s~~**.**

~~thereby stimulating the food web of fisheries and other biological resources~~ (Schemel et al. 2004).

7. Biological Indicators:

   Page 46, Conclusion,
   Conclusion: Staff does not recommend establishing specific biological indicators or triggers as enforceable water quality objectives in light of the following factors: (1) the biological complexity within the estuary; (2) a need to consider indicators for other essential attributes and functions; (3) multiple causes of declines in estuarine species; (4) multiple causes in the decline of habitat; and (5) the interaction between the complexities above and the causes themselves. With respect to the decline of conditions within the Bay-Delta, it is important to gather more information on each specific ~~driver~~ **factor** before using biological indicators as objectives. For these reasons, staff recommends using biological ~~and other indicators~~ **information (including the salmon doubling objective)** to: (1) inform the process of setting numeric flow and flow-related objectives; (2) evaluate the efficacy of numeric flow and flow-related objectives; (3) use as triggers for defining when and how a numeric objective is applied, to facilitate adaptive management**; and (4) develop recommendations to other agencies in the program of implementation regarding actions for the attainment of water quality objectives and to obtain additional information (e.g. recommendations regarding invasive species management and harvesting regulations to assist in achieving the salmon doubling objective).**

   Page 46, below the last paragraph, add a new paragraph.
   It is important to note that this recommendation solely addresses the use of biological indicators in the State Water Board's water quality planning efforts for the Bay-Delta. There are other State Water Board efforts related to establishing biological goals and objectives in the State (e.g., the Water Quality Control Plan for Enclosed Bays and Estuaries - Part 1 Sediment Quality), and as these efforts progress and information is further developed, staff will continue to evaluate the merits of establishing biological indicators as objectives in the Bay-Delta Plan.

8. Bibliography:

   Page 51, add a new citation.
   Jassby, A.D. and Cloern, J.E. 2000. Organic Matter Sources and Rehabilitation of the Sacramento-San Joaquin Delta (California, USA). Aquatic Conservation: Marine and Freshwater Ecosystems 10:323-352.

9. VI. APPENDIX A:

   Page 58, top of page, add heading.
   VI. Appendix A**: Summary and responses to comments received in response to Notice of Public Workshop on Review of the 2006 Bay-Delta Plan and Request for Written Input on Factual Issues**

10. VII. APPENDIX B:

    Page 72, new page, add heading.
    VII. Appendix B: Comment letters received for Notice of Adoption Hearing of 2009 Draft Periodic Review Staff Report