

# Nutrients STAG (Stakeholder Technical and Advisory Group)

September 9, 2014

## Meeting Summary

**Note:** The list of attendees follows the meeting summary. The Central Valley Water Board has developed a webpage for the Nutrient Research Plan project, which can be found at: [http://www.waterboards.ca.gov/centralvalley/water\\_issues/delta\\_water\\_quality/delta\\_nutrient\\_research\\_plan/index.shtml](http://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/delta_nutrient_research_plan/index.shtml) Additional materials from the STAG meeting (e.g., agenda, presentations, background documents) have been posted to the project website at: [http://www.waterboards.ca.gov/centralvalley/water\\_issues/delta\\_water\\_quality/public\\_involvement\\_stag\\_meetings/index.shtml](http://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/public_involvement_stag_meetings/index.shtml) The summary captures the major issues presented and discussed during the meeting, though they are not intended as an exhaustive record of all comments made. Rather the summary is intended to provide participants and other interested parties with a general description of topics addressed and different perspectives on those topics, as well as to record commitments and decisions made by the Group and its members.

	<p><b>Meeting Objectives</b></p> <ul style="list-style-type: none"><li>• Provide background on the project</li><li>• Review and solicit comments on STAG charter and governance</li><li>• Familiarize the STAG with the priority nutrient-related problems in the Delta</li><li>• Obtain input on the makeup and functioning of the science workgroups</li><li>• Decide next steps</li></ul>
1	<p><b>Introduction and Announcements</b></p> <p>Brock Bernstein reviewed the agenda and meeting objectives. Board staff anticipates STAG meetings will be held once every two months in order to keep pace with the progress of the science work groups. STAG meeting agenda items will be grouped by general topic so that participants can attend all or only a specific portion of the meeting they are interested in.</p>
2	<p><b>Background</b></p> <p>Chris Foe reviewed the genesis of the project, which responds to Recommendation #8 in Chapter 6 (Water Quality) of the Delta Stewardship Council’s Delta Plan, i.e., develop a Nutrient Study Plan for the Delta, i.e., a research plan. This project may not meet the Plan’s deadline, but the Board must make significant progress because this is a high priority water quality issue for the Delta. The Board’s research plan is not likely to be able to address all problems potentially related to nutrients because of resource limitations and must necessarily focus on a subset of problems identified by the DSC’s Delta Plan and reiterated in the Board’s 2014 Delta Strategic Plan.</p> <p>Chris Foe plans to base the research plan on white papers produced by a series of science work groups convened for this effort. At the moment, groups are planned for macrophytes; cyanobacteria; nutrient forms, concentrations and ratios, and modeling. White papers are intended to summarize the state of the science, identify uncertainties and data gaps, and propose specific research projects to resolve these. The research plan and white papers could also serve as source material for solicitation packages released by funding entities. The science groups’ work will be reviewed by an Independent Science Panel, which may be</p>

	<p>based on the science panel the State Water Board has created for its Nutrient Numeric Endpoints (NNE) project.</p> <p>The proposed project schedule has the research plan completed in summer 2015, with Regional Board staff recommendations from the research tentatively scheduled for 2018. However, the schedule after 2015 depends on factors outside staff's control, such as the availability of funding.</p> <p><b>Discussion</b></p> <p>Chris Foe and Steve Camacho (State Water Board) clarified that the NNE independent science panel will be used for the Delta project. State Board staff has already made provisions for switching out two freshwater experts and replacing them with estuarine experts as needed.</p>
3	<p><b>Charter and Governance Document</b></p> <p>Brock Bernstein briefly reviewed the main elements of the draft document, clarifying and expanding a number of points in the process. This effort will focus on surface water and will ultimately move toward developing a nutrient management strategy; however, this first effort is focused on science and research. The STAG will assist in forming the science work groups and will function as a core communication hub, with the science work groups reporting to the STAG on their progress and receiving feedback and input on the direction of their efforts. Regional Board staff will work directly with the STAG.</p> <p>The STAG's structure and governance will be modeled on other successful analogs, such as the advisory committees for State Water Board policy development and the Delta RMP's Steering Committee. The STAG is a mechanism for improving two-way communication with the various interest groups and a key responsibility of STAG members will be to maintain such communication. Each interest group will identify a primary and alternate representative who will be responsible for attending meetings and keeping up with distributed background materials. STAG meetings will be open to all interested participants; however, the governance document describes a decision-making process that involves STAG representatives and may be used as needed in the future.</p> <p><b>Discussion</b></p> <p>Participants noted that agriculture was not included on the draft list of interest groups; that confined animal feeding operations (CAFOs) should be considered as a group; and that boating and waterways, and marine operators might be combined into a waterways-related group. Mosquito abatement was identified separately because increased macrophytes increase mosquito habitat, raising concerns about West Nile Virus health issues. Academics were proposed as a distinct interest group, but many academic scientists will be participating in the science work groups. Also in terms of macrophytes, this project will focus only on the relationship between macrophytes and nutrients and will not include other macrophyte control programs, such as exotic predators, being considered by other agencies. Participants raised the issue of whether all STAG members would have voting rights (in the event voting is needed) and requested this be clarified in the updated charter and governance document.</p> <p><b>Commitments</b></p> <p>Brock Bernstein will begin outreach to specific interest groups in order to identify additional STAG members. Brock Bernstein will also revise the draft charter and governance document based on discussion at this meeting and distribute it for review.</p>
4	<p><b>Break</b></p>

<p>5</p>	<p><b>Nutrient Related Problems in the Delta</b></p> <p>Chris Foe summarized current concerns about a subset of five water quality problems that have grown progressively more severe over the last half century. Four major changes in nutrient dynamics have occurred that raise the question of whether any of these shifts have caused the water quality problems seen now and whether reducing nutrient inputs will return the system to its earlier state. The four nutrient changes are: 1) nitrogen loads have increased, with most new nitrogen entering as ammonia because of increased population growth in the Central Valley, 2) this has caused a shift in the oxidation state of the major forms of nitrogen in the Delta; the system was nitrate dominated but now is ammonia dominated, 3) there has been a reduction in phosphorus loads because of the loss of canneries, 4) the increase in nitrogen and decrease in phosphorus has caused shifts in the ratio of N:P.</p> <p>The five main problems are:</p> <ul style="list-style-type: none"> <li>• Increase in abundance and distribution of macrophytes</li> <li>• Increased frequency and magnitude of cyanobacteria blooms</li> <li>• Changes in the biomass and composition of the phytoplankton community</li> <li>• Low dissolved oxygen in back sloughs</li> <li>• Negative impacts on drinking water quality</li> </ul> <p><i>Discussion</i></p> <p>Chris Foe clarified that this project is focusing on problems identified in the Delta Stewardship Council’s Delta Plan and the Regional Board’s Delta Strategic Work Plan. Because of resources limitations (i.e., only one and a half staff members), the list of issues has been prioritized and much of the work will be accomplished through the science work groups (see next item). Of these issues, only low dissolved oxygen is listed on the 303(d) list.</p> <p>About half the nitrogen entering the Delta is in organic form. There is quite a bit of uncertainty about nitrogen mineralization rates.</p>
<p>6</p>	<p><b>Science Work Groups</b></p> <p>Chris Foe reviewed the role of the science work groups in developing the research plan and summarized the schedule. The work group products will be provided to the STAG for review and comment and the work group leaders will also provide interim updates to the STAG at its bimonthly meetings. The work groups’ primary responsibility will be to produce white papers that will then be used to develop the research plan, which will be written by Regional Board staff. The work groups may use different formats or processes to accomplish their goals, and these have not yet been fully defined. A first step in this process is for the STAG to review the proposed white paper outlines.</p> <p>There is funding for two of the four white papers (macrophytes, cyanobacteria), which will be prepared by Drs. Kathy Boyer and Mine Berg, respectively. Regional Board staff will prepare the white paper on nutrient forms and ratios with input from the science work group.</p> <p>There is also no funding at the moment for the modeling white paper, which will include not only the specifics of model questions and properties but where the model will ultimately be housed and maintained. Chris Foe presented the draft list of science work group candidates, received additional suggestions, and asked STAG members to provide additional suggestions.</p>

	<p><b><i>Discussion</i></b></p> <p>Models are an important part of the research plan because the nutrient background in the Delta is changing and current conditions cannot be expected to persist in the future.</p> <p>STAG members may attend and participate in work group meetings, but the core membership of the two entities should remain separate because the STAG’s primary role at this point is to review and sign off on the work group products.</p> <p>The anticipated level of effort for the science work groups is three meetings, with the expectation that work group members will complete homework consisting of reading a prepared selection of the scientific literature. STAG members and others interested in attending and participating in the work group meetings should also complete this homework.</p> <p>There was extensive discussion about the format and governance of the work group meetings. On the one hand, the work groups will include invited experts whose knowledge and input should be maximized and there were concerns that a large group of other participants could dilute the discussion. On the other hand, there are members of the stakeholder community with significant expertise in these issues and their input would be valuable. Participants discussed options that included restricting input from “guests” to specific portions of the meeting, leaving the discussion open to all, or a hybrid alternative in which the group leader could manage the discussion as needed depending on the number of participants. Some participants suggested this may not be an issue, given experience with similar processes. It was also suggested that the work group meetings be noticed on the Lyris list to avoid any implications in the future that the process was not transparent.</p> <p>There was some concern that drinking water was not included on the list of high priority items. However, Regional Board resources are extremely limited.</p> <p>There are several other nutrient-related efforts in the Bay-Delta and it will be important for this effort to ensure coordination and cross fertilization with those.</p> <p><b><i>Decisions and commitments</i></b></p> <p>The science work group meetings will be noticed to the larger community on the Lyris list. The governance of the work groups will be better defined in the revised charter and governance document. Participants agreed to forward names of potential science work group members to Chris. Tom Grovhaug volunteered to investigate the possibility of forming a drinking water work group. The project team will create a list of other related efforts in the Bay-Delta and develop a coordination plan.</p>
7	<p><b>Wrap Up</b></p> <p>Brock Bernstein summarized the main takeaways and next steps:</p> <ul style="list-style-type: none"> <li>• The charter and governance document will be revised based on discussion</li> <li>• Chris Foe will develop a draft charge for each science work group</li> <li>• Staff will identify other related efforts and develop a draft coordination plan</li> <li>• Participants will send Christine Joab additional suggestions for STAG and science work group members</li> <li>• Regional Board staff will get the project website online and loaded with background materials</li> </ul>

## Attendees

<i>Staff</i>	
Chris Foe	Central Valley Regional Water Board
Christine Joab	Central Valley Regional Water Board
Brock Bernstein	Facilitator
<i>Participants (in person)</i>	
Elaine Archibald	California Urban Water Agencies
Paul Bedore	Robertson-Bryan
Mark Cady	CA Dept. Food and Agriculture
Steve Camacho	State Water Board
Richard Connon	UC Davis
Joe Domagalski	US Geological Survey
Linda Dorn	Sacramento County Regional Sanitation District
Dick Dugdale	Romberg Tiburon Center
Stephanie Fong	State and Federal Contractors Water Agency
Tom Grovhaug	Larry Walker Associates
Sam Harader	Delta Stewardship Council
Mary Junqueiro	Western Plant Health Association
Stephen Louie	CA Dept. Fish and Wildlife
Terrie Mitchell	Sacramento County Regional Sanitation District
Timothy Mussen	Sacramento County Regional Sanitation District
Renee Pinel	Western Plant Health Association
David Senn	San Francisco Estuary Institute
Lynda Smith	Metropolitan Water District of Southern California
Lisa Thompson	Sacramento County Regional Sanitation District
Phil Troubridge	San Francisco Estuary Institute
Mike Wackman	San Joaquin Delta Coalition
<i>Webex Participants (on phone)</i>	
Lauren Bauer	Kern County Water Agency
Brian Bergamaschi	USGS California Water Science Center
James Dana	Crop Productions Services
Brian Laurenson	Larry Walker Associates
Peggy Lehman	Department of Water Resources
Martha Sutula	Southern California Coastal Water Research Project