



Delta Regional Monitoring Program (RMP) Technical Advisory Committee (TAC) Meeting

March 30, 2016

1:30 – 4:00 PM

Sacramento Regional County Sanitation District Building
10060 Goethe Road, Sacramento, CA 95827

Summary

Attendees:

TAC (and/or Alternate) members present¹:

Stephanie Fong, Water Supply (State and Federal Contractors Water Agency)
Brian Laurenson, Stormwater – Phase I (Larry Walker Associates)
Stephen McCord, TAC co-Chair (McCord Environmental, Inc.)
Mike Johnson, Agriculture (MLJ LLC)
Vyomini Upadhyay, POTWs (Regional San)
Tim Mussen, POTWs (Regional San)
Debra Denton, Regulatory – Federal (U.S. EPA Region 9)
Tony Pirondini, POTWs (City of Vacaville)
Joe Domagalski, TAC co-Chair (U.S. Geological Survey)
Karen Ashby, Stormwater – Phase II (Larry Walker Associates)
Erwin Van Nieuwenhuysse, Coordinated Monitoring (Reclamation)
Hope Taylor, Stormwater – Phase I (Larry Walker Associates)
Danny McClure, Regulatory – State (Central Valley Water Board)
Janis Cooke, Regulatory – State (Central Valley Water Board)
Lisa Thompson, POTWs (Regional San)

Others present:

Patrick Morris, Central Valley Regional Water Board
Thomas Jabusch, SFEI-ASC
Selina Cole, Central Valley Regional Water Board
Cam Irvine, CH2M Hill
Rachel Kubiak, Western Plant Health Association
Linda Deanovic, UC Davis APHL
Phil Trowbridge, SFEI-ASC
Linda Dorn, Regional San, co-Chair of Steering Committee
Stephen Louie, CDFW
Erik Ringelberg, LAND
Jim Orlando, USGS

¹ Name, Representing Category (Affiliation)

Sam Safis, Regional San
Brian Bergamaschi, USGS

On phone:

Dave Senn, SFEI-ASC

Val Connor, SFCWA, SC representative (Water Supply)

1.	<p>Introductions and Agenda</p> <p>Danny McClure and Janis Cooke are the new alternates for Tessa Fojut (Central Valley Water Board).</p>
2.	<p>Approve Meeting Summary from November 16, 2015</p> <p>The meeting summary was approved with the minor edits previously made. The action items listed have all been addressed.</p>
3.	<p>SC Updates</p> <p>Stephen McCord and Meg Sedlak provided a brief overview of the key outcomes from the December 18 SC meeting. Topics relevant to the TAC included a power analysis to be funded by SFCWA and the Delta RMP external peer review process now underway.</p> <p>Debra Denton commented that all public documents of the Delta RMP should be made available on the Delta RMP website public and that the website should be kept up to date. She noted that a colleague could not find all public documents of the Delta RMP via the website. Selina Cole replied that all major (SC approved) program documents are posted. After the meeting, Debra further clarified that it would be helpful to have the past SC meeting agenda packages available on the website. Selina Cole said that she was already preparing the three most recent SC meeting agenda packages for posting on the website (which are now available), and plans to add more. However, future postings may not include <i>all</i> past SC and TAC agenda packages from prior years.</p> <p>The next SC meeting is on April 25 at Regional San in the Sunset Maple Room, 10060 Goethe Rd, Sacramento, CA.</p>
4.	<p>Review of Key Findings and Recommendations from Recently Completed Nutrient Work Products</p> <p>Brian Bergamaschi (USGS) provided an overview of the Delta RMP's first funded technical product: "Planning and operating a high frequency nutrient and biogeochemistry monitoring network: the Sacramento-San Joaquin Delta" prepared</p>

by USGS. The report provides both a summary of available high-frequency data and an overview of how to implement a sensor monitoring network and manage continuous sensor data. Brian gave an overview of how to use the report indicating that the first section that discusses sources, loads, and processes affecting nutrients provided a general overview. Subsequent sections discuss why high-frequency measurements are useful, why multi-parameter sensors are needed, and why high-resolution mapping is a good tool for characterizing distal locations such as the sloughs of the North Delta. The report also includes sections on how to conduct high-frequency monitoring and the cost of installing, operating, and maintaining high-frequency sensors. Lastly, the report synthesizes the current literature. The intention is to publish the report as a USGS series publication that could be updated over time. Monitoring results are presented within different contexts, mainly as example case studies that provide insight into how high-frequency data are useful. The synthesis does not provide a complete picture of sensor monitoring data in the Delta, as there are approximately 100 different continuous sensors that monitor parameters such as flow, stage, conductivity etc. However, only eight of these sensors monitor for nutrients. Brian characterized the existing network as “fragmented”. He suggested that there should be more coordination among stations and advocated a workshop. The presentation was followed by a brief Q&A. Brian addressed questions concerning ownership of existing stations and cost of implementation and maintenance. For example, a sensor for monitoring salinity, stage, and discharge costs approximately \$40K to implement. The time needed to implement such a sensor station (from planning to data generation) is approximately 6 months, including contracting and set-up.

Stephen McCord commented that the report focuses on concepts and advantages of continuous sensors, but does not address the RMP’s management questions or lead to specific recommendations as to whether (and if so for what and where) the Delta RMP should operate or support new or existing continuous sensor stations. Brian offered to meet with a TAC subgroup to discuss how to make the report more useful. Brian requested that TAC members review the draft report and provide comments to him by May 1. The report will be finalized in June.

Dave Senn provided an overview of a synthesis of IEP-EMP data recently completed by SFEI-ASC, in collaboration with USGS and RMA (Marianne Guerin for modeling support), through a contract with DWR. Dave recommended that future work should take more advantage of available modeling tools. For example,



	<p>hydrodynamic modeling of water sources, residence times, and water “age” could yield information on back sloughs and other areas where there are currently no data available. The proposed modeling would also help identify areas with sharp gradients that are currently “blind spots” and where more stations would be needed to characterize sources and processes.</p>
<p>5.</p>	<p>Recommendations for FY16/17 Workplan: Pesticides, Mercury, Nutrients, and Pathogens</p> <p>Funding for FY16/17 is not sufficient to fund all studies recommended by the current use pesticides (CUPs), mercury, nutrients, and pathogen subcommittees. In addition, there may be a shortfall due to reduced participation. ASC staff presented options for study elements to be included in the FY16/17 workplan that met the projected revenue. The recommended options were based on 1) level of priority given by subcommittees, 2) opportunities to address multiple program priorities (leveraging, coordinating, making better use of existing monitoring and data etc.), and 3) providing continuity for ongoing studies (such as pesticide monitoring). Staff presented two options (A and B) as a starting point for the TAC discussion: Option A assumes no shortfall costs \$759K total. It includes funding for CUPs (\$526 total = \$491K for Year 2 monitoring, \$15K to develop and implement a prioritization process, and \$20K for reporting), nutrients (\$120K for additional synthesis), and mercury (\$113K for sport fish and water monitoring). Option B assumes a budget shortfall and costs \$646K. Option B, as presented, does not include funding for mercury monitoring. The two main reasons why nutrients rather than mercury was included in Option B were 1) the high priority that was given to nutrients at the multi-year planning meeting of the Steering Committee and 2) the possibility that the Delta RMP could potentially apply for funding for mercury monitoring through another Prop 1 proposal. (Neither option includes additional funding for pathogens. Funding for year 2 of the 2-year pathogen monitoring study has already been approved as part of the FY15/16. The use of reserve funds was suggested to support a proposed follow-up study, should Basin Plan LT2 trigger levels for drinking water pathogens be exceeded.)</p> <p>Karen Ashby commented that grant funds for mercury are not guaranteed and recommended to direct program funding towards mercury, with or without a shortfall. She noted that mercury is a priority for the Delta RMP. Danny McClure and Janis Cooke stated that the Regional Board has an interest in mercury data because the review of the MeHg TMDL is approaching soon. Mercury monitoring could also help inform the mercury cycling model being developed by DWR. Upcoming policy actions, and the fact that the mercury monitoring was more well</p>

defined than the nutrient synthesis work, would make mercury a higher priority than nutrients for the coming year's budget. Janis Cooke expressed support for the updated mercury design, which pairs fish data with water data, and indicated that there is a need for paired data that are more recent than 2008. She also commented that the outputs of the proposed nutrients synthesis are not clear. Phil Trowbridge responded that the synthesis would extend the existing synthesis of IEP-EMP data beyond 2011 and include the more recent drought years. In addition, the proposed synthesis would have a large emphasis on modeling. Danny McClure recommended considering scaling back the nutrient synthesis if there was a budget shortfall, and that between scaling back nutrient synthesis and the CUP prioritization, there could be adequate funds for the mercury monitoring. Dave Senn responded that the proposed work would represent a very conservative approach. Tony Pirondini commented that mercury would be more of a priority to get started because plans are ready for implementation, whereas nutrients are not. Tim Mussen commented that there is a lot of interest in nutrients and that having the proposed synthesis work available would be an important step forward in planning the nutrient monitoring design. In particular, there would be a lot of utility in the proposed hydrodynamic modeling effort. Moreover, syntheses in general would be a very valuable vehicle for reporting out to the community.

Rachel Kubiak questioned the need for more synthesis. Dave Senn responded that the DWR monitoring represents a large data collection effort and that the recently completed synthesis (funded by DWR) barely scratched the surface of what can be learned from the existing data. Overall, there is a large amount of data that have not yet been evaluated. This includes data collected since 2011, which are not covered in the synthesis for DWR. He advised that the recommendation for more synthesis is consistent with the overarching goals of the Delta RMP, which places an emphasis on cooperation, coordination of data collection efforts, and making better use of existing data.

Several participants asked whether the CUP study effort could be scaled back or stretched out over a long time period. It was also suggested to push the pesticide prioritization off to FY17/18 (to coincide with a full evaluation of the first 2 years of data and the completion of the prioritization process for the ILRP) and scale back the annual reporting (since there will be a technical report on the first 2 years of data in FY17/18). Debra Denton mentioned that she consulted with DPR and they could run their prioritization model so the RMP would not have to spend that \$15K

on prioritization. TAC members also questioned the \$20K expense of annual reporting for the CUPs (especially when the workplan indicates that the final data will be collected in 2018). Phil Trowbridge responded that it might be difficult to scale back the pesticide-reporting task because of the requirement to report pesticide data annually and the complicated reporting structure for pesticides, which involves chemical-analytical data for more than 150 constituents as well as toxicity and TIE data. Karen suggested that the \$20K annual reporting task be confirmed with the SC, as to how it fits into the reporting schedule and if it should remain a priority funded at this level.

After a fruitful discussion, the TAC selected a hybrid of Options A and B, "Option C", which resembled "Option B" with the following modifications: 1) \$511 for CUP monitoring (does not include prioritization); \$113K for mercury; and nutrient synthesis with the remainder balance (currently \$33K) to be scaled up to \$120K, if additional funding becomes available.

In addition, the following concerns were expressed:

In a follow-up email, Debra Denton noted that the TAC should have articulated that "Option A" would be the preferred recommendation to the SC for consideration, and that "Option C" should be presented as an alternative in case of a potential budget shortfall.

Debra further noted in her email that reducing the dollar amount for CUPs would be more complex than reducing the percentage of total budget. One of the reasons is that a specific portion of the CUP funding for pesticides is from the Water Board's SWAMP program and tied to the use of UC Davis AHPL for toxicity testing. She also noted that there are no cost-savings in removing certain analytes that are already part of the scan. Lastly, she noted that the CUP element is evaluating more than 100 constituents and, through the toxicity testing approach, also the potential toxicity (as well as synergistic, additive, and antagonistic effects) of the active ingredients, their degradates, and/or other constituents present in the water.

Cam Irvine pointed out the planning challenges that are posed by the late arrival of the SFCWA funding in the annual cycle (funds are received in April of a fiscal year that begins July 1 of the previous year).

Karen Ashby suggested that the SC evaluate the costs of program administration and CUPs, to ensure that the RMP is maximizing its budget for all four focus areas. Val Connor responded that the Finance Subcommittee would meet before the SC meeting and look at administrative costs. The Finance Committee is a subcommittee of the SC and includes Val Connor, Linda Dorn, Adam Laputz, Dave Tamayo, and Mike Wackman.

Several TAC members suggested it would be helpful if the SC could first provide direction on the priorities for the FY and how much funding should be allocated to each focus area. Then the TAC could develop a technically sound monitoring plan based on the given budget for each priority. Several TAC members suggested in the future a joint SC-TAC meeting to reconcile fiscal priorities and technical limitations while developing the annual work plan.

SFEI-ASC will develop a more detailed work plan next.

Recommendations:

- Current Use Pesticide Monitoring totaling \$511K (i.e., Year 2 pesticide/toxicity monitoring (\$491K) and reporting (\$20K)).
- Mercury monitoring totaling \$113K.
- Nutrient synthesis at \$33K. If additional revenue is made available, additional nutrient synthesis tasks may be added up to a total of \$120K. The TAC requested that a more detailed scope of work for the nutrient synthesis tasks (for either funding level) be prepared and sent to the nutrient subcommittee and TAC.
- While consensus was reached at the meeting, meaning that all TAC members present “could live with” the recommendations, Karen Ashby requested that the following qualifiers be attached to the recommendations to communicate important points from the discussion to the SC:
 - o The SC should provide direction to the TAC regarding the priorities for the upcoming FY and how funding generally be allocated to each program area.
 - o For the 2016-2017 FY, the SC should evaluate the costs of program administration and CUPs, to ensure that the RMP is maximizing its budget for all four focus areas. If there are cost savings and/or reprioritization, the TAC will re-evaluate the recommendations as



	<p>directed by the SC.</p> <ul style="list-style-type: none"> ○ The TAC recommendations assume a worst-case funding scenario. The SC should allocate full funding to the program so that priority projects can proceed for all four focus areas.
<p>6.</p>	<p>Updates and wrap-up</p> <p>The next two TAC meetings will be on June 14 (Regional Board) and September 21 (Regional San). Proposed topics for the June 14 meeting include updates on sampling activities and analysis results, the detailed scope of the nutrient synthesis, an update on the Pyrethroid TMDL, and the QAPP.</p> <p>Val Connor informed the group that Adam Laputz (SC co-Chair) advised against making the SFCWA-funded power analysis of the current monitoring design an official program function. Therefore, SFCWA will proceed independently with the power analysis. Stephen indicated that he is organizing a symposium on mercury science in the Delta. Thomas Jabusch stated that the QAPP was in review by the State Board Office of Information Management and Analysis and that he expected comments by the end of the week (update: comments were received on Monday, 4/14). The QAPP will need to be updated to incorporate Hg, if this element is approved in the FY16/17 plan.</p> <p>Participants requested more time for discussion of agenda items in future meetings.</p> <p><u>Recommendations:</u></p> <ul style="list-style-type: none"> - Joint SC/TAC planning meeting to discuss the multi-year plan, priorities, and budgets
<p>10.</p>	<p>Action items:</p> <p>Agenda package</p> <ul style="list-style-type: none"> - Meg Sedlak: trouble-shoot PDF printing problems at Regional San (Agenda package does not print correctly)(by April 14, 2016). – <i>Done</i> (appears to be an issue within Regional San). <p>Delta RMP website</p> <ul style="list-style-type: none"> - Selina Cole: confirm that the Delta RMP website is up to date (by June 14, 2016). <p>FY16/17 workplan recommendations</p> <ul style="list-style-type: none"> - Meg: Send out to the TAC the consensus-based option for FY16/17 studies (by April, 2016) - <i>Done</i>. <p>Nutrients synthesis</p>



	<ul style="list-style-type: none"> - Thomas Jabusch: Revise scope of work for nutrient study for FY16/17 and send back to TAC (by April 14, 2016) – <i>Done</i>. - TAC: provide feedback before the workplan is sent to the SC on April 18th, 2016. If that timeline is too short, feedback on the scope can be given at any time before the SC meeting. (By April 18, 2016) <p>USGS Sensor Data Synthesis</p> <ul style="list-style-type: none"> - TAC: review USGS draft report and provide comments (by May 1).
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Parking Lot

- Recap the June 2 mercury science synthesis workshop
- Identify opportunities for Delta field experience by TAC members
- Pesticides
 - . Benchmarks
 - . Risk potential definition and prioritization process