

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

May 7, 2014

9:00 AM – noon

Sacramento Regional County Sanitation District Building

Sunset Maple Room

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)

Meghan Sullivan, Regulatory – State (Central Valley Regional Water Board)

Joe Domagalski, TAC co-Chair (U.S. Geological Survey)

Vyomini Upadhyay, POTWs (Sacramento Regional CSD)

Claus Suverkropp, Agriculture (Larry Walker Associates)

Stephen McCord, TAC co-Chair (McCord Environmental, Inc.)

Debra Denton, Regulatory – Federal (U.S. EPA Region 9 Water Division)

Tony Pirondini, POTWs (City of Vacaville)

Erwin van Nieuwenhuyse, Coordinated Monitoring (U.S. Bureau of Reclamation)

By phone:

Karen Ashby, Stormwater – Phase II (Larry Walker Associates)

Others present:

Thomas Jabusch, SFEI-ASC

Jay Davis, SFEI-ASC

Tessa Fojut, Central Valley Regional Water Board

Betsy Elzufon, LWA

Linda Dorn, Sacramento Regional CSD

Lisa Thompson, Sacramento Regional CSD

Dave Tamayo, Sacramento County Stormwater Program

On phone:

Rachel Kubiak, Western Plant Health Association

Doug Dowden, City of Stockton

¹ Name, Representing Category (Affiliation)

1.	<p>Introductions A quorum was established.</p>
2.	<p>Approval of Agenda – Stephen McCord The main purpose of the meeting was the subgroup updates. A secondary purpose was the identification of potential logistical issues to mutually resolve between groups. Desired outcomes included deciding on a) what needs to happen at the TAC and subgroup level in next steps of the monitoring design, b) the need for a power analysis to inform the design, c) organizing and timing a peer review, and d) the key messages for the update from the TAC to the SC.</p>
3.	<p>Announcements from Committee Members There were no announcements.</p>
4.	<p>Ambient Monitoring Group Activities – Linda Dorn, Betsy Elzufon Linda Dorn and Betsy Elzufon presented and explained a map of potential RMP sites proposed by NPDES permittees. Linda also asked the TAC to consider what would be good sites for permittees when finalizing their monitoring design proposal. Many other programs are already monitoring the Delta. Thus, the 1st tier sites proposed by permittees represent key places in and upstream of the Delta that are already being monitored and reflect certain types of inputs into the system in terms of pathways and geography. For example, the proposed sites along and upstream of the Sacramento River include Discovery Park (represents inputs from upstream urban areas and industrial dischargers along the American River), Veteran's Bridge, Hood (lots of monitoring by ongoing programs), Freeport, and Rio Vista. CVCWA is currently collecting and analyzing existing compliance monitoring datasets representing POTWs in the Delta and identifying sites, parameters, and sampling frequencies that could be exchanged. Permittees and regulators agree that upstream sites will remain as individual permittee-required monitoring sites due to their importance for reasonable potential analyses.</p> <p>A subgroup of NPDES holders and Regional Board staff is drafting NPDES permit language that would accompany the change in how permittees would conduct monitoring. The subgroup is trying to finalize language that can be included in a general order for the August meeting of the Regional Board. The proposed new permit language does not dictate the monitoring frequency for permittees, recognizing that monitoring frequencies vary among permits and that the RMP with its collaborative design approach would represent an improvement over current requirements. The proposed new permit language would allow for special studies, which are routinely part of current permit requirements, to be conducted through</p>

	the RMP.
5.	<p>Monitoring Design – Subgroup Updates</p> <p><i>Mercury (Stephen McCord, Jay Davis):</i> The Status & Trends monitoring design approach corresponds to an interest in subareas and various specific sites. The effects of hydrology and ecology (especially effects on fish and fish consumers) are important considerations in focusing the effort. Matrices of main interest are fish and water. Sediment is of interest in terms of sediment bed flux and downstream transport. Sediment bed concentrations <i>per se</i> are not a strong driver of fish tissue concentrations. Important considerations for selecting monitoring sites include historical sport fish monitoring sites, the sites proposed by the NPDES permittees, and a wish list” of flux sites proposed for collection of additional parameters to support model development. The “wish list” includes key sites such as Vernalis (which is to be granted by the NAWQA program, according to Joe Domagalski). Planned next steps are to finalize and consolidate the monitoring designs, conduct power analyses, review the consolidated monitoring design and estimate costs (June/July), and coordinate with other monitoring efforts (June – August).</p> <p><i>Nutrients (Joe Domagalski):</i> There is no clear regulatory driver yet for nutrients. Joe presented the revised assessment questions as:</p> <ol style="list-style-type: none"> 1. Do nutrient concentrations result in drinking water problems? 2. How much N and P are exported out of the Delta? 3. What are the ranges and trends in chlorophyll-<i>a</i> and algae in Delta sub-areas? 4. How do nutrients affect algal abundance and composition and how do other factors correlate? 5. How do nutrients affect the occurrence of harmful algal blooms and what factors are correlated to blooms? <p>The assessment questions were derived by assuming drivers of monitoring to be undesirable changes in conditions corresponding to topics of interest for the Delta Science Plan such as aquatic macrophytes and changes in algal assemblages (including Harmful Algal Blooms, HABs). Key elements of the proposed approach are evaluating existing data, assessing whether and what types of critical data gaps exist, and closing them by augmenting the existing monitoring efforts. For example, there are only a few continuous nitrate sensors in the Delta that also measure color and organic carbon. An important first step would be an initial mass balance. The Central Valley Monitoring Directory provides information on parameters,</p>

frequencies, and other details that would inform the monitoring gaps analysis. The California Estuaries Portal has links to access nutrients data, such as IEP EMP or CDEC. The WARMF nutrients submodel was recently peer reviewed for application in the Delta and found insufficient.

Pesticides (Debra Denton, Stephanie Fong): The pesticides subgroup is focusing on a toxicity-based approach. Toxicity in the Delta is already being monitored, so its status and spatial trends are being documented. Because toxicity is not a pollutant *per se*, there is a need to monitor pesticide active ingredients (AI) plus to understand how the combination of AIs+ AI degradates + formulation “inert” ingredient(s) + their degradation products + any other potential toxicants overlying in the water and sediment (e.g., heavy metals) contribute to toxicity. Toxicity testing would provide a holistic picture of toxic effects.

The proposed sampling approach is based on the existing wealth of knowledge about the Delta. The 13 proposed targeted sites very closely match those proposed by the NPDES permittees. Critically important sampling locations include major inflow and outflow points to and from the Delta.

The RMP should include the six Delta sites currently monitored by the Stream Pollution Trends (SpOT) program, which monitors pesticide toxicity statewide. Additional opportunities would be sought to coordinate with monitoring by permittees and the coalition supporting the Irrigated Lands Regulatory Program (ILRP).

The proposed testing approach would be multi-species testing, include sublethal and lethal endpoints for both sediment and water tests, following EPA methods. Statistical analyses for determining toxicity would use EPA’s Test for Significant Toxicity.

The timing of sampling would favor wet over dry sampling, knowing that wet weather is more important. For example, winter and fall first-flush events are important. The subgroup still needs to discuss the timing and logistics of sampling. Chemical analyses could be performed by USGS at \$1,750 per water sample to evaluate ~ 80 pesticides expected in Delta waterways.

Debra suggested more discussion by the TAC about costing and what level of effort

for cost estimates. The high-cost effort would include both chemistry and toxicity at all 13 sites, continuous exposure monitoring at Hood and Vernalis, and an intensive sampling frequency. Debra emphasized the need to understand exposure, direct effects, and indirect effects. Furthermore, toxicity test species selection depends on the pollutant of interest. Claus Suverkropp suggested being strategic in the use of fish testing and not necessarily testing all sites with fish.

Pathogens (Brian Laurensen): The driver for this effort from the discharger side is a Basin Plan requirement for understanding conditions at the intakes in relation to agricultural and urban runoff sources. The main interest is determining if worsening conditions at an intake results from a change in pathogen sources. Understanding the Delta's complex hydrodynamics would help to prioritize potential sources.

The aim for the RMP should be to synchronize the pathogen study with LT2 water quality sampling at all the intakes by the drinking water agencies. Monthly intake sampling will begin this summer and continue for two years. The pathogens subgroup has been encouraged to sample on different days to prevent overloading the lab. DWR's Municipal Water Quality Investigations (MWQI) is part of the subgroup and interested in sampling for pathogens but wants to see where the RMP would go with that effort. For this and other reasons, the timing needs to be figured out. MWQI currently monitors 30 sites at varying frequencies.

The proposed focus of the pathogen analyses would be primarily on *Giardia* and *Cryptosporidium*, along with all essential ancillary measurements and microbial source tracking. The fate of pathogens is of interest to the group.

Spatially, the North Delta is of particular interest, because the co-occurrence of several intakes and pathogen sources. Other areas of interest are the North Bay Aqueduct and around Stockton.

Year 1 of the pathogens monitoring would be focused on status using a network of programs for sampling. The subgroup will also develop a decision tree for monitoring and response. Year 2 would be focused on detection criteria for infectivity—the viability of spores.

Developing a cost range will require the subgroup to determine the monitoring objectives. Costs are \$600/sample for collection and \$375/sample for *Giardia*-

	<p><i>Cryptosporidium</i> analyses. Sampling is time-consuming and requires a trained field crew.</p> <p>Coordination with other efforts is an important aspect of pathogens monitoring. Potential collaborations include MWQI, DWR, drinking water agencies, source categories (dischargers), labs, and UC Davis.</p> <p>The wrap-up discussion revealed various design aspects that would benefit from a peer review. Next steps should involve the identification of peer reviewers and a funding source/mechanism.</p> <p><u>Outcomes:</u></p> <ul style="list-style-type: none"> - Specific questions need to be developed to be addressed in a peer review
6.	<p>Review Monitoring Design Development Schedule <i>Stephen McCord, Thomas Jabusch</i></p> <p>A revised schedule to be proposed to the Steering Committee on May 19 is:</p> <ul style="list-style-type: none"> • Draft Monitoring Design (design & costs tables): May-Aug • ID coordination efficiencies: June-Aug. • SC decisions to be made... • Final Monitoring Design: fall? • Peer review: recommended timing TBD
7.	<p>Wrap-up– <i>Stephen McCord</i></p> <p>The next meeting is tentatively scheduled for June 16, 9am-noon, again hosted by the Sacramento Regional County Sanitation District.</p>
8.	<p>Action items:</p> <ol style="list-style-type: none"> 8.1. Consolidate constituent monitoring designs in tabular format (Thomas, by May 30) 8.2. Seek out dates and location for next meeting (Stephen, done) 8.3. Permittees subgroup to finalize (1) preferred “exchangeable” RMP monitoring sites, and (2) permit language for RMP participation. 8.4. Update Central Valley Monitoring Directory (Thomas, by June 16) 8.5. Nutrients Subgroup perform mass balance estimates for major nutrients in the Delta (Joe/Dave, by August 29) 8.6. Pesticides Subgroup apply DPR’s prioritization model and USGS’ tools from its co-occurrence study (Thomas/Debra, by August 29) 8.7. Each subgroup consider definition of “subareas” in assessment questions (all leads, by June 13)

	8.8. All subgroup meet to review monitoring design table (all leads, by June 13)
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