

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

January 6, 2015
1:00 PM – 4:00 PM
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)
- Joe Domagalski, TAC co-Chair (U.S. Geological Survey)
- Claus Suverkropp, Agriculture (Larry Walker Associates)
- Stephen McCord, TAC co-Chair (McCord Environmental, Inc.)
- Tessa Fojut, Regulatory – State (Central Valley Regional Water Quality Control Board)
- Debra Denton, Regulatory – Federal (U.S. EPA Region 9)
- Tim Mussen, POTWs (Sacramento Regional CSD)

By phone:

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

Others present:

- Patrick Morris, Central Valley Regional Water Board
- Thomas Jabusch, SFEI-ASC
- Hope McCaslin Taylor, LWA
- Cristina Grosso, SFEI-ASC
- Phil Trowbridge, SFEI-ASC
- Selina Cole, Central Valley Regional Water Board

On phone:

- Tony Hale, SFEI-ASC

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| 1. | Welcome and Introductions |
| 2. | Announcements from TAC Members There were no announcements. Stephen McCord also presented a list of TAC action |

¹ Name, Representing Category (Affiliation)

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| | <p>items and requested updates. Thomas Jabusch gave an update on the IEP coordination meeting. IEP has a fixed schedule and it would be challenging to add more stations, clean trace element sampling methods, or schedule changes to accommodate targeted wet weather sampling events. Given that sampling costs are small compared to analytical costs, and that sampling coordination may require substantial effort, coordination of in-kind sampling is not recommended this year. Thomas is in communication with Val Connor about obtaining SFWCA’s database for the nutrients data synthesis.</p> |
| <p>3.</p> | <p>Steering Committee Updates</p> <p>The Steering Committee agreed to start implementing the Delta RMP over the next six months, even though the proposed available funds amount to less than would be needed to fund all activities of the initial monitoring design recommended by the TAC. The total proposed budget for all Year 1 activities of the initial monitoring design is \$1.6M. The total pledged funds for Year 1 presently amount to \$1.3M, of which \$470K would become available before June 30, 2015. The initial funds include the current ASC contract and planned contributions by Regional San and the City of Tracy. The priorities to get started on over the next 6 months are: 1) current use pesticides monitoring (including both chemical analyses and toxicity testing); 2) a nutrients data synthesis, and 3) getting a special study underway with a focus on characterizing pathogen (<i>Cryptosporidium</i> and <i>Giardia</i>) levels throughout the Delta. ASC was requested to prepare a budget and workplan for this first six-month period in FY14-15. Mercury monitoring will be included as an option (pending available budget) for FY15-16. The SC elected its first co-Chairs, Adam Laputz and Linda Dorn. The SC did not formally approve the monitoring design summary but will be voting on it at their Jan. 22, 2015, meeting.</p> |
| <p>4.</p> | <p>Approval of Agenda</p> |
| <p>5.</p> | <p>Review ASC Draft FY2015 Detailed Workplan</p> <p>Stephen gave an introduction, noting several desired outcomes from the discussion. Thomas Jabusch provided a review of key discussion points of the proposed initial 6-month workplan and budget of the Delta RMP, to be vetted with the TAC. The detailed workplan does not provide a detailed monthly breakdown of the cash-in, cash-out flow because ASC does not anticipate specific cash flow issues if funds arrive as pledged. The RMP will use a July-June fiscal year and that the 6-month budget is the FY14-15 budget. The target audience of the workplan is the SC, not the TAC.</p> <p>The desired outcome was to obtain input from the TAC to make sure the use and</p> |

timing of the 6-month program funds are optimal in terms of the bigger picture of having a sound formal plan and budget for implementing the Delta RMP. The TAC supported the key recommendations of the proposed plan but also provided a number of comments and suggested revisions that staff would address and incorporate prior to meeting with the SC.

Current Use Pesticides (CUPs). The approach recommended by the TAC is that a) the USGS Pesticides Fate Research Laboratory will be contracted for the pesticides and copper (Cu) chemical analyses, b) available SWAMP contract funding (up to \$200,000) will be applied to fund a major portion of the toxicity testing, which is tied to using UC Davis Aquatic Toxicology Laboratory (ATL) and cannot be used for other purposes such as field sampling, and c) an RFP will be issued for field sampling. USGS will provide a workplan (“proposal” in USGS parlance) for the analytical work. SFEI-ASC will seek cost savings and/or provide alternatives to the TAC on work reductions to meet the available budget.

Using ATL: A complication is the higher unit cost for toxicity testing at UCD. The current proposed budget for toxicity testing (including TIEs) is \$246K, which means that the \$200K available from the Regional Board’s SWAMP contract would cover ~80% of all proposed toxicity testing. The higher cost is presumably due to UC’s high overhead rate. UCD lab is the only lab that has done all of the proposed testing.

Field sampling: proposed costs are reasonable for land-based sampling but will not support boat sampling. USGS field crews may be able to conduct the field sampling. Benefits would include avoiding the administrative effort of an RFP and a more streamlined chain-of-custody.

RFP: RMP participants can respond to the RFP. It is confusing to have the RFP in the Quality Assurance System section of the budget. There was discussion of whether an RFQ (Request for Qualifications) was more appropriate, but the TAC did not determine so.

Nutrients. The schedule is to have the synthesis done by Mar 2016 and the monitoring plan by June 2016. The timeline is constrained by other projects (Delta Nutrients Research Plan white papers, IEP-EMP data analysis, subregions project). The RMP would still be able to start no regrets sampling before the synthesis is

done. ASC will very likely pass the proposed initial allocation of \$35K (of a total of \$225K proposed for data synthesis and monitoring plan development) through to contributors for getting priority analyses of high-frequency data started.

Pathogens. The pro-rated 6-month budget of \$18K covers the additional laboratory analysis cost for the first three months of ambient sampling (April-June). MWQI has an existing QAPP and only needs a few weeks of lead-time to update it. Since multiple water contractors collect intake samples, the RMP cannot require all of them to use the same methods, but would need to document any deviances. An idea is to send out a simple list of protocols and see if there are any problems. Most of the money would be going to BioVir and a smaller portion to a secondary lab in Indiana for an inter-laboratory comparison. A discussion is still pending whether the RMP would also be asked to pay for courier expenses. Brian Laurenson will request copies of each intake facility's Standard Operating Procedures for sample collection, and the QAPP for the primary and secondary analytical labs. The TAC will review these documents and suggest revisions, if warranted.

Hyalella

In anticipation of a discussion at the January 22 SC meeting about the inclusion of *Hyalella* as a test species for water toxicity, ASC staff and TAC co-Chairs asked the TAC for technical input. The TAC agreed on the following list of pros and cons to be presented to the SC, if needed:

Pros:

- Standard USEPA method since 2002
- SWAMP QAPP includes MQOs and this program has been using this species for many years
- Standard sediment toxicity survival test for SPoT
- Most sensitive to pyrethroids

Cons:

- Ecological relevance of lab vs. in situ species [not in situ testing]
- Phenotype variation in sensitivity [but controlled by labs]

There was no disagreement about the pros, but some discussion about the cons. For example, there are concerns whether observed toxicity in laboratory tests represents actual impacts on species in the watershed. The focus of *Hyalella* testing is on the presence of pyrethroids at concentrations exceeding toxicity thresholds

(which are below analytical detection limits) rather than demonstrating impacts to water bodies. Note: the use of toxicity (and similarly with analytical testing) is to predict effects rather than to have effects occurring in the environment. However, the issue is that certain *Hyalella* clades in the Delta may have developed a resistance (a negative change), whereas the *Hyalella* used in the lab tests are not collected from the wild and have been/can be tested for clade identification. It has been argued that the toxicity sensitivity observed in such lab cultures may not necessarily translate into observable ecological impacts in resident wild populations. SC meeting summary notes indicate that there are concerns about how the data will be interpreted for compliance.

Among the numerous technical reasons for including *Hyalella* testing is the advantage of a weight-of-evidence based approach that is based on toxicology and analytical chemistry results complementing each other. There are equally good technical reasons for including a species known to be sensitive to pyrethroids, which are abundantly present in the watershed, as well as a species with lesser sensitivity to CUPs of concern, such as the fathead minnow. U.S. EPA's Freshwater Manual (Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th edition, 2002) lists *Hyalella*. Some members of the SC believe there are concerns because it is listed as an alternative species. Main reasons why some alternative species are listed as such rather than as standard test species are that they are either not available nationwide from commercial sources, more difficult to cultivate, or not as easy to test. Another concern is that there are no interlab comparisons for *Hyalella* testing. Being that this is a non-compliance program - we are not bound by 40 CFR Part 136 methods, so, if we wish to use an ASTM method, we can. More importantly, this same logic is not being applied to the chemistry methods. We are not proposing Part 136 methods for chemistry, in fact, we are using USGS methods because we scientifically desire methods at lower detection levels to be environmentally relevant. And the same logic needs to be applied to the toxicology methods.

Recommendations:

- *Hyalella* acute water toxicity testing is a useful toxicity testing method. The discussion between the TAC and SC should stay technical and make a case why the test is needed based on the management questions. Pyrethroids are known to occur throughout the watershed, and *Hyalella* is sensitive to pyrethroids. Thus, acute water toxicity testing provides a useful tool to

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| | <p>indicate the occurrence of pyrethroids above toxicity thresholds in the water column. The point is to use a variety of test species and analytical tools (both toxicology and chemistry) to identify different classes of pesticides.</p> <ul style="list-style-type: none"> - Revise cost estimate for dissolved Cu, which is currently underbudgeted - Preselect UC Davis ATL as the designated contractor for conducting the tests, based on available SWAMP funding and expected quality of work. Since the unit costs are higher than those provided in the Monitoring Design Summary, preferred options are to either shift funds to toxicity testing from another budget or reduce the number of sites to be sampled. - SFEI-ASC to seek cost savings and/or provide alternatives to the TAC on work reductions to meet the available budget. - Use SWAMP protocols for land-based sampling. - USGS provide the list of pesticides to be analyzed, and compare that list to DPR's prioritization model output. - Pursue the plan for the nutrients data synthesis as it stands, i.e. get high-frequency data analysis started within the next 6 months. - MWQI's QAPP for the pathogen sampling and analysis will not need to be incorporated into the RMP QAPP. - For pathogens, collect and review SOPs from intake facilities and the QAPP from the analytical labs. |
| <p>6.</p> | <p>Sampling & Analyses RFPs</p> <p>Thomas Jabusch outlined the reasons why a RFP process is needed and the 11-step process. The scope of services for an RFP will be the initial scope for a contract. The Bay RMP follows the same steps but is still working on the process for deciding when to go back out to bid. The Bay RMP has a list of current contracts but does not maintain a list of preferred vendors.</p> <p><u>Recommendations:</u></p> <ul style="list-style-type: none"> - Keep the option for as-needed external review (as described in the 11-step process) |
| <p>7.</p> | <p>RMP Data Management</p> <p>Cristina Grosso presented an overview of RMP data management and existing state infrastructure for managing and visualizing water quality data. In the Bay RMP, SFEI-ASC's Data Services Team works closely with participating analytical labs. The data management flow involves the following steps:</p> <ol style="list-style-type: none"> 1. Receive data templates 2. Review format and validate codes |

3. Perform QA/QC and completeness review
4. Upload final data to database
5. Once data are in the final, centralized database, the data are ready to share with other organizations and visualize with online access tools.

SFEI-ASC also provides programmatic review over the entire process to ensure all of the data have been submitted, reviewed, qualified, and uploaded.

California has 4 Regional Data Centers (RDCs): SFEI for San Francisco Bay, MLML for the Central Coast, SCWRRP for Southern California, and Michael Johnson for the Central Valley. All RDCs have some or all of the following infrastructure components:

- Standardized data templates
- Comparability ensured by statewide database
- Detailed user documentation
- Data checker and upload tools
- Data access and visualization tools

SWAMP vs. CEDEN:

- SWAMP is a monitoring program like the RMP, but much larger and statewide. It is one of the many monitoring programs that exchange data with CEDEN.
- SWAMP data are contained in CEDEN.
- CEDEN is based on SWAMP and uses the same database structure.
- CEDEN and SWAMP have similar data templates and business rules.
- CEDEN and SWAMP have the same fields, but SWAMP requires more of them.
- SWAMP has program-specific data quality objectives, based on its QAPP.

It is a requirement for Delta RMP data to ultimately end up in CEDEN. CEDEN has a centralized statewide database and a query tool. The CEDEN database is updated weekly and has a variety of water and sediment quality data, including toxicity. EcoAtlas (ecoatlas.org) displays statewide toxicity data from CEDEN by 4 levels of toxicity, and users can explore these data on an interactive map. There are several other data portals that display CEDEN data, including the theme-based, questions-driven My Water Quality portals, Bay-Delta Live, and the San Joaquin River

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| | <p>Monitoring portal. SFEI-ASC recently released CD3 (cd3.sfei.org), a tool that allows for download and map-based exploration of Bay RMP data and all public data stored in San Francisco Bay's RDC. CD3 also features analytical and graphing tools that allow users the generation of dynamic graphs such as histograms. Through CD3, data can be downloaded as tabular, shape, or kml files. Any data in the San Francisco Bay RDC can be visualized by CD3. They do not need to be place-based in the Bay. Cristina will present the CD3 tool at the California Estuary Monitoring Workgroup meeting on 1/14/15. At this time, CD3 cannot pull data from the Central Valley RDC. However, CD3 can be expanded, if desired. All the other visualization tools presented pull data from CEDEN, and therefore include public data stored in the Central Valley RDC's database. It is much more efficient to have data managers and scientists working together rather than compartmentalizing scientific work and data management.</p> <p><u>Pesticides analytical data:</u> The USGS will by default upload data to NWIS. Additional effort will be required to make the USGS data available through CEDEN, because there is no direct link between NWIS and CEDEN. The My Water Quality Estuary Portal pulls data directly from NWIS, but only for specific questions.</p> <p><u>Recommendations:</u></p> <ul style="list-style-type: none"> - Use the San Francisco Bay RDC for data management and visualization, because it will provide access to a full range of integrated tools, including CD3 as a useful tool for scientists. Thus, data will be uploaded by SFEI into the San Francisco Bay RDC, and then exchanged with CEDEN. This option will maximize the number of available visualization tools, yet does not preclude the use of other portals. - There is no need for a data subcommittee. The full TAC can address all data-related issues. |
| <p>8.</p> | <p>TAC Roles and FY2015 Objectives</p> <p>The TAC reviewed key sections of the Roles and Responsibilities document and suggested edits. The group also discussed the timing and topics of upcoming TAC meetings until June.</p> <p><u>Recommendations:</u></p> <ul style="list-style-type: none"> - Dissolve subcommittees for CUPs, nutrients, mercury, and pathogens - Schedule TAC meetings in March and late May/early June. - Form TIE Subcommittee, with initial tasks to finalize a decision flow chart |

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| | <p>and determine communication protocols</p> <ul style="list-style-type: none"> - Next TAC meeting agenda: <ul style="list-style-type: none"> ➤ Review Pesticides/Toxicity SOPs and QAPPs ➤ Assign TIE Subcommittee members, outline initial tasks ➤ Review Nutrients Data Synthesis Workplan ➤ Recommend sampling contractors ➤ Review data management plan ➤ Decide on TAC Chairs - Late May/early June <ul style="list-style-type: none"> ➤ Review FY15-16 workplan ➤ Review draft Communications Plan ➤ Adaptive management based on initial monitoring experiences |
| <p>9.</p> | <p>Wrap-up</p> |
| <p>10.</p> | <p>Action items: By March 2015</p> <p>Current Use Pesticides</p> <ul style="list-style-type: none"> 10.1. Send output from the DPR prioritization model to Joe Domagalski (Completed – Jim Orlando already has the output) 10.2. Develop options for making up the \$46K difference between available SWAMP funding and proposed toxicity testing budget (Thomas Jabusch) 10.3. Develop an internal workplan for pesticides and Cu to make sure that analytical work stays within our budget numbers (Joe Domagalski/USGS) 10.4. Check math in section 5A for field sampling (Thomas) 10.5. Check on costs for sampling coordination and logistics (line F), since there is already funding allocated for the RFP separately. 10.6. Research whether a RFP or RFQ is better for the field sampling work and recommend better option to the SC (Thomas/Phil Trowbridge) <p>Nutrients</p> <ul style="list-style-type: none"> 10.7. Talk to potential collaborators for nutrients data synthesis (Thomas/Phil/Dave Senn) <p>Pathogens</p> <ul style="list-style-type: none"> 10.8. Obtained QAPPs/SOPs from MWQI, individual water agencies collecting samples, and labs (Brian Laurenson) 10.9. Poll the drinking water workgroup about sending around a field sampling SOP to the individual agencies (Brian) |

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| | <p>10.10. Subcontract with BioVir for the MWQI ambient samples (ASC)</p> <p>Program Management</p> <p>10.11. Update SC and TAC rosters, and update Delta RMP Committee Roles document (Thomas)</p> <p>Data Management</p> <p>10.1. Provide CEDEN template to USGS (ASC)</p> <p>Steering Committee</p> <p>10.1. Present and discuss <i>Hyaella</i> issue consistent with TAC recommendations (Stephen McCord)</p> <p>10.2. Distribute SC presentation to TAC for review (Stephen)</p> |
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