



Bay RMP Technical Review Committee Meeting

March 14, 2019

San Francisco Estuary Institute

Meeting Summary

Attendees

TRC Member	Affiliation	Representing	Present
Nirmela Arsem	EBMUD	POTWs	
Mary Lou Esparza	CCCSD, BACWA	POTWs	yes
Tom Hall	EOA, Inc.	POTWs	phone
Heather Peterson (alt)	SFPUC	POTWs	yes
Anne Hansen	City of San Jose	POTWs	yes
Bridgett DeShields*	Integral Consulting	Refineries	yes
Chris Sommers	BASMAA, EOA	Stormwater	yes
Shannon Alford	Port of SF	Dredgers	
Ian Wren	San Francisco Baykeeper	NGOs	yes
Richard Looker	SFBRWQCB	Water Board	yes
Luisa Valiela	USEPA	US-EPA IX	yes
Shelah Sweatt	USACE	USACE	yes

*Chair

Guests and Staff

- Jay Davis - SFEI
- Melissa Foley - SFEI
- Nina Buzby - SFEI
- Ila Shimabuku - SFEI
- Cristina Grosso - SFEI
- Dave Senn - SFEI
- Ryan Mayfield - City of San Jose
- Karina Nielsen - SFSU
- Paul Salop - AMS (phone)
- Don Yee - SFEI
- Tom Mumley - SFBRWQCB (phone)

1. Introductions and Review Agenda

Melissa Foley welcomed the members of the Committee and time was given to allow for introductions. Melissa noted that this meeting would include a presentation previously planned for the last meeting (December 2018) by Karina Nielsen. Additionally, Melissa noted that Scott Dusterhoff was sick and would be unable to present the sediment monitoring item, though she would summarize the topic in his place.

Decision:

- Ian Wren motioned to approve Bridgette DeShields as TRC chair for the next year. Luisa Valiela seconded the motion. The motion for approval was carried by all present members.

2. Decision: Approve Meeting Summary from December 13, 2018, and Confirm/set Dates for Future Meetings

The Committee members had no comments on the meeting summary and no additional changes were made to the December 13th meeting summary before approval.

The TRC confirmed the planned future meeting dates for the rest of 2019. Ian Wren noted that he would be unable to attend the June meeting and would appreciate the agenda packet as early as possible so he can provide his funding suggestions for special studies. He later noted that Jon Rosenfield (Baykeeper) would also attend the June TRC meeting in his place.

Decision:

- Richard Looker motioned to approve the December 13, 2018, TRC meeting summary. Luisa Valiela seconded the motion. The motion for approval was carried by all present members.

3. Information: SC Meeting Summary from January 23, 2019

Melissa Foley summarized the topics of the January Steering Committee meeting. She highlighted the approval of the Multi-Year Plan (with minor edits that would be shown at the April SC meeting) as well as the 2019 Pulse outline. Melissa noted the presentation of South Bay Margins work by Don was quite similar to the presentation the TRC heard in December. The SC had some discussion on the value of doing margins sampling in the North Bay, but did approve future work to occur in 2020.

The TRC was also informed of the presentation and discussion concerning the Delta RMP. Matt Heberger presented on the evolution of the program as well as various points of comparison to the Bay RMP. The SC meeting participants then talked about strategies of how to interface between the two programs such as sharing meeting agendas and inviting Delta RMP members

to the Bay RMP Multi-Year Planning Workshop. The TRC had a few questions about the Delta RMP meeting schedule and governance members. Melissa and Jay noted the growth of the Delta RMP Steering Committee and the resulting greater challenge in consensus-based decision-making.

Action Items:

- Create slides that compare membership of Delta and Bay RMPs as well as the difference in geographic reach of the two programs (Melissa Foley/Matt Heberger, 6/13/19)

4. Information: Workgroup Dates and Special Studies Budget

Melissa informed the Committee that all the 2019 Workgroup meetings have been scheduled and noted their dates. The first meeting is next week and the rest will occur throughout April and May. The March meeting will be the first of two Sediment Workgroup meetings, given 2019 is only the group's second year. The first meeting would ensure that all members are reminded and aware of the group's priorities and allow for proposal assignments and preparation.

Melissa noted that the agenda package for the June TRC meeting would be sent out 10 days prior to the meeting given the final WG meeting date (5/30/19). Melissa informed the Committee that if any delay occurred the RMP would get portions of the agenda out earlier to allow for enough time for Committee members to review the WG proposals.

The TRC discussed guidance to communicate to WG leads to help ease the proposal evaluation process happening in the summer. Bridgette DeShields noted that WG members should definitely prioritize proposals and be aware that while the planning budget amounts to 150% of available funds, groups aren't guaranteed funds at the 100% level. The distribution of the special studies budget will be subject to discussion. Ian Wren encouraged that proposals are written succinctly and Luisa Valiela suggested that the study's urgency be added into the description. Understanding the timing of projects will help the TRC determine if a proposal would be a better candidate for future years or as a SEP proposal.

Meeting participants then discussed SEP projects and the possibility of getting a better understanding of what projects would have a stronger chance of getting SEP funding. RMP staff noted that it is difficult to form predictions concerning SEPs, but did provide information on the number of studies and range of funding amounts from 2018.

The conversation moved on to the prioritization terminology used to distinguish WG projects. The Committee members noted that the "must do" label for projects was misleading, given that they amount to the full 150% of the planning budget and can't all be funded. The TRC noted that "must do" would relate more to multi-year studies and strategy/management costs, while other studies currently included in the "must do" category would actually be more like "high priority

studies.” Bridgette DeShields and Luisa Valiela noted it would be helpful if proposals included a statement explaining why the study needs to be funded in the present year.

The item finished with a short discussion reminding the TRC members of the status of the EEWG. The EEWG is currently dormant because many of its former topics have been incorporated into Status and Trends or other workgroups (ECWG and Sediment WG, mainly).

Action Items:

- Include statements in proposals about the urgency of the study and whether or not the work can be postponed or spread across multiple years (WG Leads, 5/30/19)

5. Information: Short-Term Archive Purge

Nina Buzby presented the outcome of the short-term RMP archive purge that occurred in late February. She reminded the Committee members of the number and type of samples that were discarded (bivalve, fish, and non-historic site sediment samples older than 10 years) and the resulting \$1000 /month savings due to the archive consolidation. The storage of Bob Risebrough’s sample archive was also discussed - specifically the donation of some bird samples to the California Academy of Sciences and Golden Gate Raptor Observatory.

The next steps for the short-term archives were also presented to the Committee. Further consolidation and organization of existing archives will likely offer more cost-saving opportunities. RMP staff communicated that the current hurdle is communicating with Bob Risebrough about the cost distribution (between SFEI and Bob) of storing his samples and that SFEI will be working to iron out the details in the coming weeks.

Ian Wren noted that it would be useful to keep a record of why archive samples were discarded, so that their lack of viability, age, etc. would be communicated to those assessing the archive resources in the future.

Action Items:

- Write a memo on the reasoning behind short-term archive purge to be included in the next TRC agenda package (Melissa Foley and Nina Buzby, 6/13/19)
- Add Paul Salop to email correspondence with Bob Risebrough (Jay Davis, 3/15/19)

6. Discussion: Coordinated Sediment Monitoring for Bay RMP and Wetland RMP

In place of Scott Dusterhoff, Melissa Foley gave a quick overview of the status of sediment monitoring discussions happening between the Wetland RMP (WRMP) and Bay RMP. Currently four different groups are planning and implementing sediment-related activities around the Bay:

the Bay RMP, WRMP, Healthy Waters Resilient Baylands (HWRB), and the Bay Conservation and Development Commission (BCDC). Given the number and variety of actions happening, Melissa noted the importance of coordination and strategic alignment. Specifically, conversations between the RMP and WRMP offer an opportunity to maximize benefits from possible collaboration since they are both in early stages of planning and strategy.

Melissa presented the management questions for the Bay RMP Sediment Monitoring Strategy and WRMP monitoring questions and asked the TRC members for suggestions and advice on how to further coordinate between groups. Ian Wren commented that BCDC may be misinformed of the funding being allocated to the RMP sediment efforts and Richard Looker brought up the importance of having some sort of standardization of suspended sediment monitoring methods. Additionally, meeting participants agreed that modeling efforts could be an important resource to guide monitoring efforts.

Chris Sommers thought it would be important to make sure other RMP efforts are being utilized. Namely, the NMS water modeling and STLS watershed modeling could offer helpful insights. Melissa noted that the timing and data needs of these efforts may be different and should be kept in mind. It is important for WG leads to attend one another's meetings so that the various perspectives can be included in the dialogue and efforts can be coordinated.

7. Discussion: Data Visualization Challenge Update

Cristina Grosso gave an update on next steps for the second Data Visualization Challenge and the outcomes of the subcommittee recommendations at the December meeting. She noted that the subcommittee (Cristina Grosso, Richard Looker, and Chris Sommers) met and discussed possible strategies to improve outreach efforts for high school and university groups. These strategies include contacting science leads, department heads, and school districts. Cristina also showed the TRC a proposed timeline for this year's Challenge that would allow more time for outreach and submissions and also prevent school-year and holiday conflicts. Roughly, the Challenge would be announced in September and run through January/February and winners would be announced after the March TRC meeting.

Cristina and subcommittee members Chris Sommers and Richard Looker asked for input from the meeting participants on the project goals as well as outreach strategies. Ian Wren commented that one of the goals from the previous year was to increase traffic to the CD3 database, which happened. Jay Davis noted that the challenge may be more of an opportunity for education and outreach, as well as encouraging students to engage with the data. Luisa Valiela mentioned that the submission goals and challenge tasks should be categorized into two tiers related to the high school and university level participants.

Don Yee suggested there should be questions or prompts for this year's challenge, such as drivers of variation within the Bay; common sources of pollutants; predicting trends of pollutants

over time. Richard Looker added on to Don's ideas by suggesting that other themes be provided to allow participants to choose. He suggested these could be organized around the following questions: (1) is something changing over time? Are things getting better or worse? (2) are things related? (3) is something a problem? Richard also noted he is interested in getting the participants to think about how to use data to answer questions. Along these lines, Chris Sommers suggested providing links to background materials to help guide hypothesis generation.

Jay Davis noted that one of the past winning submissions included an interesting visualization of fish data. He thought fish contaminants would be a good topic to build upon given that participants would be working on and learning about an important human health concern in the Bay, helping enhance our communication of this information to the public. Chris Sommers shared this sentiment, adding that people are likely to relate well to the fish as species that they may interact with. Richard Looker then suggested the following possible scenario:

The participants need to figure out where people fishing in the Bay are at greatest risk. Conduct some sort of analysis to figure out where the problems are the worst and what species are affected, and possibly which species and contaminants would be of most concern for public health.

Richard noted that providing hints that guide participants to get more than just baseline information (i.e., what species are most commonly consumed, how would one address a multi-lingual public) would help guide students in a constructive direction. Further investigation would be awarded extra credit. The meeting participants agreed that Richard's scenario would be a good prompt for high schoolers, and Don's questions or added tasks to the fish scenario may work well for university students.

The discussion then returned to outreach strategies. Anne Hansen, Sheila Sweatt, and Chris suggested also reaching out to community colleges, science fairs, St. Mary's College, and the California Academy of Sciences. Jay Davis noted that it might be advantageous to announce the challenge in August, instead of the proposed time in September to better align with teacher schedules. Finally, the meeting participants discussed the possible distribution of cash prizes, noting that the split between academic levels should also be reflected in the prize amounts.

Action Items:

- Schedule another subcommittee meeting (Cristina Grosso, 3/31/19)
- Craft challenge task description and come up with additional components and more complex requirements for college students (Cristina Grosso & Subcommittee, 6/13/19)
- Discuss and determine prize amounts (Melissa Foley and Cristina Grosso, 8/1/19)

8. Discussion/Decision: USGS Water Sampling Cruise End

Melissa Foley started by giving an overview of the situation surrounding Jim Cloern's retirement. Given the RMP cannot absorb all the costs of his USGS position, there is a need to think about long-term and short-term options to continue Jim's program of bimonthly cruises. Dave Senn presented the scenarios for continuing the long-term monitoring work with and without USGS support. He noted that the RMP currently contributes approximately \$250k for moored sensor and ship-based monitoring work and another \$250k for Status and Trends work.

The possible external partners Dave has spoken with include Karina Nielsen at the Estuary and Ocean Science Center with SFSU and Alex Parker at the California Maritime Academy. Dave noted the benefits to partnering with these other groups, such as supporting new research opportunities and possibly discounted access to ships. Ryan Mayfield also pointed out that the monthly DFW cruises could be a helpful resource to consider.

There was also discussion of the complexities of USGS funding, specifically that there are multiple aspects to the monitoring work: Jim Cloern's position, boat research technicians and other lab group members, and facilities and resources (i.e., boat). Each element is funded by a different USGS mission area and thus it is difficult to know whether certain elements will be funded or not. Additionally, Dave noted that their current contacts at USGS are advocates for the program but aren't actually the decision making authority. These factors contribute to the uncertainty and importance of putting together a list of RMP and NMS desires and boundaries that the USGS can take into their internal conversations.

Because the monitoring work is slated to end in August 2019, Dave suggested it might be helpful to present the USGS with considerations and thresholds of what the RMP would be willing to agree to before USGS decides that for the RMP. Chris Sommers noted that if the partnership with USGS continued, it would be worthwhile to establish a clear agreement that helps establish an understanding of how rates would increase over time, as well as the opportunity to have some flexibility for including other water and sediment collections (in order to be more cost-effective). Chris Sommers and Richard Looker noted two points that the agreement should include: (1) a longer period of time for breaking the agreement (longer than a typical 30-day period) and (2) meeting on a yearly basis to amend and add extra work based on the year's projects.

Dave noted that having terms established by SFEI's governance groups (SC, TRC, Nutrient Management Strategy) may be more well received by the USGS than coming from Dave himself. Ian Wren suggested bringing more TRC and SC members into the planning conversations to help develop concrete guidelines to give to USGS.

The discussion had to be cut somewhat short to maintain the meeting schedule, however Chris Sommers and Jay Davis had two final points. Chris brought up the fact that federal funding is

somewhat unpredictable, and it would be helpful to have a program that is self sustaining over time. One option could be looking into SWAMP funding as there is statewide interest in nutrient work and all National Pollutant Discharge Elimination System (NPDES) permits require dischargers to pay into SWAMP. Jay noted that it would be helpful for Dave to create a draft of what the “RMP message” to USGS might look like (i.e., guidelines and thresholds) and send it out to the TRC and SC for comment.

Action Items:

- Invite TRC and SC members to help craft the terms of agreement that will be sent to the USGS (Dave Senn, 3/31/19)
- Create draft of USGS guidelines and share with TRC and SC (Dave Senn, 4/5/19)

9. Science Presentation: Dr. Karina Nielsen (SFSU)

Melissa introduced Dr. Karina Nielsen, the Director at the Estuary and Ocean Science Center (EOS) at SFSU. Her work focuses on the ecology of coastal systems; she co-organized a workshop on ocean acidification (OA) with SFEI in 2016. Melissa described that Karina would be presenting data from moored sensors within SF Bay and why we should be thinking about ocean acidification within the ecosystem.

Karina began her presentation by discussing the importance of studying coastal systems, specifically in the Pacific, and the general processes and drivers of OA. She then discussed the pathways of OA in the San Francisco Bay, including a conceptual model of how low pH, undersaturated waters enter and influence the Bay. Data and models currently suggest that low pH water will enter the Bay at depth, primarily be seen in the deep channels of Central Bay, and be more prevalent during the spring and early summer when upwelling is strongest and river outflow is highest.

In order to measure the influence of low pH ocean water in the Bay, SFSU has established monitoring stations within the Bay using surface (Bay Ocean Buoy - BOB), 20 m depth (Marine Acidification Research Inquiry - MARI), and fixed depth sensors. This equipment was deployed during the spring/summer of last year at two locations: by the EOS pier in Tiburon and the California Maritime Academy by Carquinez Strait. Results from these stations show that pH measurements were noisy due to instrument failures/issues, but were somewhat correlated to DO and temperature. The presence of distinct water masses with differing pH values was best observed when superimposing pH data onto temperature/salinity graphs.

Karina concluded her talk with plans for a second season of sensor deployment along with the hope to be able to hindcast carbonate system scenarios from existing biogeochemistry data. In order to do so, Karina noted the need to build a more robust understanding of the salinity-alkalinity relationship within the Bay. Ideally, she would like to be able to correlate

temperature, salinity, and DO to pH and alkalinity because those sensors are better and more robust than pH sensors.

Meeting attendees had a few final questions for Karina, including one from Chris Sommers about the fate of contaminants given a change in pH within the Bay. Additionally Melissa Foley brought up the point that OA influence in the Bay may also be more than just deep water intrusion and that there may also be more local drivers that we can actually control (i.e., local nutrient sources that contribute to phytoplankton and/or harmful algal blooms that can draw down DO and pH).

10. Discussion: Communications Update

Jay Davis informed the Committee that not many developments have occurred with the 2019 Pulse to date. During the last SC meeting more contributing authors to various articles were recommended. Shelah Sweatt agreed to be involved for USACE. Jay also noted that RMP staff would soon be reaching out to co-authors to discuss the details of the article contents.

The conversation then shifted to a brainstorm for the annual meeting, particularly the opportunity to invite outside speakers. Jay asked the TRC to send any ideas of possible speakers or topics.

Jay told the TRC about the 2019 calendar of Estuary News topics established by the SC at their last meeting. This quarter's topic would be on Jim Cloern's USGS work, followed by an article on stormwater POC (pollutants of concern) loads and green infrastructure in the summer, bisphenols in the fall, and microplastic in the winter following the Microplastic Symposium in October.

11. Information: Status of Deliverables and Action Items

Melissa Foley noted that with Workgroup season approaching there are many reports that are coming out soon for TRC comment. These reports include topics such as current use pesticides in Bay margins, neonicotinoids, bisphenols, OPFRs, and non targeted analysis work. Melissa reminded the TRC that comments on the non-targeted analysis (NTA) work as well as the South Bay sediment margins reports were due in the coming days/week.

Chris Sommers had a question about the NTA report, noting that the fact sheet was coming out concurrently and that the report itself felt somewhat short compared to other RMP technical reports. Melissa Foley noted that the report is being written as a manuscript for journal publication, so it's actual publication will take some time. The fact sheet is therefore something that can come out during this interim period and still provide information on the project's findings. Chris would like the workgroups to discuss their outputs and determine if journal articles meet the needs of TRC or if there should be a technical report (longer) AND a journal article. This is how SCCWRP manages their publications.

12. Discussion: Plan Agenda Items for Future Meetings

The meeting participants brought up topics that had been discussed previously in the meeting, such as reviewing materials for the Data Visualization Challenge, looking over the memo on short-term archives, as well as the USGS cruise updates.

The TRC agreed that the majority of the June meeting will be focused on evaluating special study proposals. Bridgette DeShields and Ian Wren noted the importance of coming prepared (i.e., attending WG meetings, reading the proposals in advance) so we don't use up time summarizing and going over each proposal prior to the evaluations.

13. Discussion: Plus/Delta

The TRC noted a big plus to Melissa running her first successful meeting. Meeting attendees also appreciated the festive pies. TRC members also provided Melissa with tips on how to prepare for the June meeting and advised her to speak with RMP staff that has been at these meetings in the past.