

San Francisco Estuary Institute

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RMP Technical Review Committee September 27th, 2011 10:00 AM to 3:00 PM DRAFT Meeting Summary

Meeting Participants

Antoine Chamsi, EBMUD
Arleen Feng (ACCWP for BASMAA)
Tom Hall (EOA, Inc. (South Bay Dischargers))
Rod Miller (SFPUC)
Karen Taberski (SFB RWQCB)

Rachel Allen (SFEI)
Jay Davis (SFEI)
Meg Sedlak (SFEI)
David Senn (SFEI)
Don Yee (SFEI)

Mike Connor (EBDA)
Naomi Feger (SFB RWQCB)
Dave Schoellhamer (USGS)
Ian Wren (Baykeeper)

Via Telephone:

Bridgette DeShields (Arcadis (WSPA))
Trish Mulvey (SFEI Board)

1. Introductions and Approval of Agenda and Minutes, Review of Action Items

Bridgette DeShields called in via telephone, so Karen Taberski agreed to serve as chair for the meeting to more easily facilitate discussion. Tom Hall made a motion to approve the minutes from the June 2011 TRC meeting, and Karen Taberski seconded it. The minutes were approved by consensus.

Meg Sedlak reviewed the action items from the previous meeting, noting that the Steering Committee (SC) will be discussing the benefit of continuing to hold joint TRC and CTAG (Commission Technical Advisory Group) meetings with the Southern California Coastal Water Research Project (SCCWRP) at the Master Planning meeting in October. This was brought up at the last SC meeting after poor attendance at the 2011 Joint TRC-CTAG meeting.

2. Steering Committee Report

Meg Sedlak reviewed the minutes from the Steering Committee (SC) meeting. She noted that the special study recommendations for 2012 from the TRC were approved by the SC, and that modeling work may be proposed pending the plans for Status and Trends reductions. Kevin

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Buchan will be retiring from the SC, so the group will be electing a new chair at the next meeting. Adam Olivieri, Tom Mumley, and Karin North have been nominated for the position, and other recommendations would be welcome.

The SC also discussed three options for RMP program review. The SC endorsed the third option (outlined in a memo to the SC), which calls for a continuation of the ongoing internal review with external oversight from workgroups. The SFEI Board of Directors approved of this plan, and indicated that at some point there should be an external review conducted to validate the program and bring in new ideas. This should be part of the Master Planning discussion.

Meg Sedlak noted that the triclosan factsheet will be distributed as the RMP insert for the Estuary Newsletter (published by the San Francisco Estuary Partnership). Dave Schoellhamer of USGS is also interested in distributing information more quickly and accessibly, and is considering RMP factsheets as a possible format.

3. Optimizing Status and Trends

Meg Sedlak reviewed the considerations about reducing the frequency of the Status and Trends monitoring program.

Water

She noted that her recommendations for the water component are not based on a power analysis, because it has been determined that water concentrations are not useful as trends indicators. Because the stakeholder groups do not need annual data, they all approved moving to biannual data collection. Jay Davis noted that the TRC is not expected to make a recommendation today. Rather, RMP staff will write up a recommendation which will be sent to the TRC for comments and approval, and then forwarded to the SC at their November meeting.

Arleen Feng noted that the stormwater program considered this conceptually acceptable, however they would need to see the whole package before making a decision.

Meg Sedlak outlined 5 options for reducing the water component of the Status and Trends program:

Water Option	Cost per year
1. Status Quo	\$140K/year
TE and modified Organics	
2. Biennial Premium	\$90K/year
Organics/TE every other year	
3. Biennial Select	\$70K/year
BDE/TE every 2 years	
PCBs/PAHs/Pesticides every 4 years	
4. Biennial Select 2	\$64K/year
BDE/TE every 2 years	
PCBs/PAHs/Pesticides every 6 years	
5. Biennial Select 3	\$56K/year
BDE/TE every 2 years	
PAHs/Pesticides every 6 years - No PCBs	

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She also noted that additional funding would be saved each year the cruise was not performed because of a reduction in RMP staff time on the boat and the cruise logistics coordination conducted by Applied Marine Sciences. However, this would be the same for all options, except option 1. Given that the dredgers, refineries, and stormwater agencies were all comfortable with a reduction in the water program, Jay Davis suggested discussing how far the group would be willing to make cuts.

Karen Taberski indicated that she supports options 3 or 4, as the PCB and legacy pesticide data are not being used. Bridgette DeShields was concerned that a reduction in PCB data collection would affect permit requirements on the refineries; however, if the Water Board supported the proposal, then the refineries would as well. Naomi Feger suggested that sampling reductions could be made in stages, with a reduction to option 2 made immediately and subsequent cuts made later. Jay Davis replied that he would prefer to address the issue completely in one step. Karen Taberski and Tom Hall suggested option 3, with BDEs performed every 4 years. Naomi Feger indicated she would support options 2 or 3.

Sediment

Regarding sediment sampling, Meg Sedlak noted that the program has just recently implemented a seasonal component to sampling, whereby wet season and dry season data are collected in alternate years, with wet season data starting in 2010. Karen Taberski noted that it is still unclear how the benthos data will be interpreted within the Sediment Quality Objectives (SQO) framework, and more data is important for developing this understanding. Mike Connor suggested that monitoring funding could be better directed to research that is evaluating what is driving sediment toxicity (in places like Oakland Harbor), as this is currently poorly understood. Tom Hall noted that inadequate TIE protocols make identifying the causes of toxicity time consuming and difficult, as well as difficult to manage.

Naomi Feger asked about the SQO data report, which Meg Sedlak indicated has been drafted by Sarah Lowe, and needs additional review. Naomi noted that it will be important to have this report before making a decision about sediment monitoring; however, Jay Davis suggested that it is more appropriate to discuss sediment toxicity with the Exposure and Effects Workgroup, as the report will not address this issue. Beth Christian will be able to address how SQO data is used in dredging decisions.

Meg Sedlak noted that the sediment monitoring could reduce the number of sites per segment from 8 to 6 sites, however this would not result in large cost savings. Mike Connor suggested getting Beth Christian, Brian Ross, Brenda Goeden, and Rob Lawrence together to determine what their data requirements are, and how they can use this data to make better decisions. He indicated that the current approach to deciding whether to dispose of sediment in the Bay should be re-evaluated in a special study. Given that most navigational dredging is clean for contaminants, Mike Connor suggested that a new protocol not require testing of all dredged materials, in order to encourage faster reuse of dredged materials.

Karen Taberski and Naomi Feger indicated that they might be comfortable with reduced frequency and number of stations of sediment sampling, pending the finalization of the SQO report and further review of data needs.

Bivalves

Meg Sedlak noted that bivalves seem to be a good indicator for contaminant trends in the Bay. She recommends continuing with the current design, and possible expansion to emerging contaminants, based on the results from 2010's pilot study with AXYS in preparation for the NOAA National Mussel Watch. Mike Connor suggested that the RMP could perform the National Mussel Watch sampling within the Bay for NOAA, and potentially receive some funding from them for this work. Meg Sedlak noted that the RMP uses transplant bivalves, while the NOAA program uses resident species.

Sport Fish

Meg Sedlak suggested coordinating the sport fish monitoring with the Southern California Bight monitoring, which occurs every 5 years. Jay Davis noted this could include joint reporting, as well as incorporation of more samples and analyses. They will bring this proposal to the fish committee.

Bird Eggs

Meg Sedlak suggested that because the bird egg monitoring is a relatively recent addition to the program, it should remain at a 3-year interval for sampling. Jay Davis noted that while bivalves are an important trends indicator, there is a disconnect between bivalves and the rest of the food web, including sport fish and small fish as well as bird eggs.

Action Items:

- RMP staff will write up a recommendation for reducing the Status and Trends program and distribute it to the TRC.
- RMP staff will finalize the SQO report and distribute it to TRC members.
- Get clarity from the dredging community on how much and of what type of sediment data they require.
- Discuss coordinating the National Mussel Watch sampling with RMP Bivalve monitoring with Dominic Gregorio.
- Discuss coordinating sport fish monitoring with the Bight program with the RMP fish committee.

4. Dissolved Oxygen Profiles in San Francisco Bay

Don Yee reviewed dissolved oxygen (DO) profiles in the Bay in response to a request as an outgrowth of the Nutrients discussions. In general, most of the Bay is well oxygenated. He noted that the spatial patterns at the bottom do not differ greatly from the near surface patterns. The results are comparable to the USGS observations along the spine of the Estuary, which are conducted more frequently (monthly). Mike Connor suggested that the super saturation (140% DO) occurring in San Pablo Bay may be linked to shallow areas with lots of light.

Dave Schoellhamer noted that the RMP DO data confirm the Polaris observations, and indicate that lateral variability is not occurring. Dave Schoellhamer noted that the low DO observed this spring

was a result of dense oceanic water upwelling and cold entering the Bay. This phenomenon occurred well into July.

5. Nutrient Strategy and Proposal for 2012

David Senn presented the context and plans for the Nutrients Strategy and the proposal for a RMP Nutrients Special Study in 2012. He noted that while nutrient loading to the Bay is not changing significantly, the Bay's historic resilience to these high loads may be decreasing. Therefore, the scientific and monitoring agencies in the area are interested in developing a strategy to determine if and when the Bay has a nutrient problem. At a stakeholder meeting, there was general agreement on the key management questions and the main goals of the five-year strategy. However, the partners in the larger nutrients strategy, of which the RMP is only one, are still unclear. The Master Planning meeting will discuss the role of the RMP within the Nutrients Strategy.

David Senn noted that the proposal to the RMP, designed based on feedback from the Nutrient Strategy meeting on September 15th, is intended to support the Nutrients Strategy in whatever form it ends up taking. The proposal comprises three tasks:

Task 1) Nutrient/Water Quality Conceptual Model and Scenario Building

Task 2) Quantifying External Nutrient Loads and Data Gaps Analysis

Task 3) Management of Nutrient Strategy Development Activities

Regarding the management component, Arleen Feng indicated that based on challenges in other strategy development, such as the Small Tributaries Loading Strategy (STLS), that the cost for this management will be significant and that a steward within the RMP may be required to defend the RMP's interests within the development of the overall strategy. Given that the other potential funders for the strategy have not yet been identified, she suggested creating a "plan B" for funding. Mike Connor noted that BACWA and the Water Board will likely contribute chunks of money, just as the Stormwater Agencies contributed to stormwater monitoring required by the Municipal Regional Stormwater Permit. He also noted that getting the strategy started will be messy, complicated, and unclear, simply because it is uncharted territory. Arleen reiterated that the SC will need a full summary of dollar amounts and the expectations from the RMP in order to make informed decisions. Mike Connor suggested that Lester McKee could provide an estimate of the management costs for strategy development based on the STLS process, and then pursue other sources for funding the remaining pieces of the management task. Naomi Feger indicated that the coordination aspect of the strategy development needs to be more fully laid out, to include coordination with work in the Delta and other areas, and specify critical checkpoints for stakeholders. Karen Taberski stated that the TRC approved of the proposal for funding, given the amendments discussed.

Action Items:

- Amend task 3 of the Nutrients proposal to more clearly articulate internal and external coordination, other funding sources, and critical checkpoints for stakeholders.

6. Options for the Temporary USGS SSC Station

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Dave Schoellhamer reviewed the current monitoring stations where continuous suspended sediment concentrations (SSC) are measured in the Bay: Dumbarton Bridge, Alcatraz Island, Richmond/ San Rafael Bridge, Benicia Bridge, Mallard Island, and a temporary station at the Hamilton Disposal Site. The Hamilton Site has been discontinued due to repeated vandalism and loss of instrumentation, so he is looking for input from the TRC and the LTMS on how to reallocate the funding from this site. He suggested 1) a site such as Alviso Slough, SF2 Mudflat, or Corte Madera Creek along the Bay margins; 2) a Central Bay deep site off of the pier at the new Exploratorium location; or 3) using the funds to analyze data collected near the Golden Gate Bridge to develop a better estimate of sediment fluxes through the Golden Gate, instead of deploying a new site.

Dave Schoellhamer noted that the Golden Gate sediment flux estimate would fill an information gap needed for numerical modeling of the Bay, and could reduce the uncertainty in this flux from a factor of 5 (currently) down to a factor of 2. The group supported the proposal to estimate sediment flux at the Golden Gate, and Dave Schoellhamer indicated that he would bring this recommendation to the LTSM meeting on October 6th. *At the LTMS meeting, it was agreed that the funding for the 6th monitoring site in 2012 would be used to develop an estimate of sediment flux at the Golden Gate. This would be a one-year endeavor.*

Karen Taberski asked about adding DO probes to the existing sites. Dave Schoellhamer indicated that probes have been ordered, and that 5-6 probes will be attached to a few sites, such as the Benicia and Richmond Bridge sites. He is also considering adding a sensor to a deep station in the Central Bay, as well as a chlorophyll probe near the surface at the Dumbarton Bridge. Mike Connor suggested putting 2 probes at one station, such as San Mateo or Benicia, one at the surface and one near bottom. Jay Davis suggested having Jim Cloern and Dick Dugdale be contacted and that Dave Schoellhamer report back to the TRC.

Action Items:

- Discuss the placement of DO probes at moored sensors within the Bay at the next Nutrients meeting.

7. Ambient Sediment Concentrations

Rachel Allen gave an overview of the work that RMP conducted to assist NOAA NMF and USEPA on the Essential Fish Habitat. The RMP was asked to help calculate “ambient” sediment concentrations for the Bay that would be used to determine whether additional biological testing of dredged material was necessary. Rachel indicated that ambient means different things to different people. Part of the challenge was to assist the agencies in the selection of an appropriate threshold definition. The group agreed that “ambient” would be based on the randomized sites, with outliers removed using nonparametric methods. The threshold would be a Bay-wide value calculated using weighted segment factors based on 10-years of data, and recalculated with each new year of data. The agencies agreed to set the threshold for bioaccumulation testing at the 90% upper tolerance level on 90th percentile of the data. The RMP has developed a web page for dredgers that shows these values. Rachel also indicated that RMP staff are calculating the three-year rolling averages for copper.

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The group asked how the threshold values calculated using the new methods compared to the values in Water Board report from 1998.

Table per TRC request:

Contaminant	2010 DMMO Bioaccumulation Threshold (90% UTL of 90th percentile)	2010 TMDL Disposal Limit (90% UTL of 99th percentile)	1998 WB Report Ambient Sediment Threshold
Hg (mg/kg)	0.33	0.472	0.43
Sum of 40 PCBs (µg/kg)	16	19.5	21.6
Sum of 25 PAHs (µg/kg)	4,800		3,390

8. Aquatic Toxicity

Per a request from the TRC, Meg Sedlak reviewed the history of water toxicity testing within the RMP. Species used for the tests included a diatom (*Thalassiosira pseudonana*) in 1993, bivalve embryos (*Mytilus sp. and Crassostrea gigas*) from 1993 to 1997, and Mysid shrimp (*Americamysis bahia*) 1994 to present. The Mysid shrimp are more sensitive to organic contaminants, while the bivalve embryos are sensitive to metals, however the bivalve tests were discontinued because no toxicity was observed with to that organism. The current procedure dictates toxicity testing every 5 years, at 9 stations throughout the Bay, using only the shrimp. In 2002 and 2007, greater than 90% survival was seen.

9. Update on Pulse and Annual Meeting

Jay Davis noted that the Pulse will be distributed after the Annual Meeting this year – the electronic version will be final within a few weeks, and the printed version a few weeks after that. He is asking for comments from the TRC by Friday, Sept 30th.

Regarding the “Trends at a Glance” section, Mike Connor suggested that the Wastewater Treatment facilities provide flow information annually along with their contaminants reporting. Johnson Lam at the Water Board maintained a database until recent years with this information. Tom Hall indicated he was meeting with Meredith Williams and Amy Franz of SFEI on how to maintain this database in the future.

Mike Connor suggested adding other important species to the population trends, including salmon and clapper rails. Jay Davis indicated that next year’s section would include clapper rails. Jay also noted that the annual meeting audience participation activity would give audience members a chance to suggest other possibilities for Trends at a Glance figure.

Mike Connor suggested that it may be worthwhile to skip a year of the Pulse, or narrow the focus, in order to alleviate the workload and be timely with its publication. He thought that a smaller

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page limit would be beneficial, because the current version is too large for managers to use. However, it does serve as a useful tool to justify the dues paid annually by stakeholders.

Jay Davis indicated that he thinks next year will be less busy, but he will bring the alternate year idea to the SC.

Mike Connor considered that the articles had more set up than necessary. They were all good summaries, but read more like a proposal justification than an explanation of what effects mean for the Bay.

Jay Davis noted that next year's Pulse will be on Emerging Contaminants, and will include the mussel data as well as the results from the PBDEs in terns egg injection study. Tom Hall suggested that the State Water Board emerging contaminants panel would make a good sidebar.

Action Items:

- Determine how to get flow data from the WWTPs annually for Pulse reporting.
- Discuss limiting the size of the Pulse or producing it every other year with the SC.

10. Program Update

Tom Hall asked about the causes of sediment toxicity collaborative statewide effort. Meg Sedlak noted that this has been put on hold, although SCCWRP and Chris Vulpe have made some progress with Molecular TIEs. Mike Connor noted that a toxicity strategy will be needed, because various groups are spending \$3-5 million a year, and sediment toxicity is common within the Bay. Tom Hall asked that a summary paper be developed, that reflects the fact that the vast majority of TIEs are inconclusive and gives an honest appraisal of what can be done to understand sediment toxicity. Jay Davis indicated he would bring this idea of a summary paper and strategy for sediment toxicity and benthos to the EEWG, with the possibility of funding it in 2013.

The next meeting date was set for Tuesday, December 13th.

Action Items:

- Discuss proposing a summary and strategy for benthic data and sediment toxicity with the EEWG.

Notes:

1. Richard Looker substituted for Karen Taberski
2. Saskia van Bergen substituted for Francois Rodigari
3. Francois Rodigari resigned from EBMUD in August 2011, replaced by Antoine Chamsi
4. Arleen Feng substituted for Chris Sommers

P = present

C = call-in

X = not present

Chair

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RMP Water Qual represented	MEMBER	Affiliation	2008				2009				2010				2011			
			1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
POTWs	Francois Rodigari (3)	EBMUD	P	P	P	P	P	P	P	P	P	(2)	P	P	P	P	-	
POTWs	Antoine Chamsi (3)	EBMUD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	
POTWs	Rod Miller	SF PUC	X	P	P	X	X	P	P	X	X	X	P	X	X	X	P	
South Bay Dischargers	Tom Hall	EOA, Inc.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
CCSF	Mike Kellogg	City and County of San Francisco	P	P	P	P	P	P	X	P	P	P	P	P	P	P	X	
City of San Jose	Eric Dunlavey	City of San Jose	P	P	X	P	P	X	P	P	P	P	P	P	P	P	X	
Refineries	Bridgette DeShields	Arcadis/ WSPA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
Industry	Dave Allen	USS POSCO	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Stormwater	Chris Sommers	BASMAA (EOA, Inc.)	P	P	P	X	P	P	P	P	P	P	X	P	P	P	(4)	
Dredgers	John Prall	Port of Oakland	P	P	X	X	P	P	X	P	P	X	X	X	X	X	X	
Corps of Eng.	Rob Lawrence	Army Corps of Engineers	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SF- RWQCB	Karen Taberski	SF-RWQCB	P	P	(1)	P	P	P	P	P	P	P	P	P	P	P	P	
US-EPA IX	Luisa Valiela	US EPA	X	P	X	P	X	C	X	C	P	X	C	C	P	X	X	