

**RMP Technical Review Committee Meeting
December 19th, 2006
San Francisco Estuary Institute
Meeting Minutes**

Attendees: Brian Anderson (UC-Davis)
Dave Tucker (City of San Jose)
Chris Sommers (Stormwater Agencies (EOA))
Karen Taberski (RWQCB)
Luisa Valiela (USEPA)
Saskia van Bergen (EBMUD)
Bryan Bemis (AMS)
Mike Connor (SFEI)
Jay Davis (SFEI)
Bridgette DeShields (BBL/WSPA)
Ben Greenfield (SFEI)
Tom Hall (South Bay Dischargers (EOA))
Rainer Hoenicke (SFEI)
Jennifer Hunt (SFEI)
Sarah Lowe (SFEI)
Jim McGrath (SFEI Board of Directors)
Lester McKee (SFEI)
Trish Mulvey (SFEI Board of Directors)
John Oram (SFEI)
Don Yee (SFEI)

1. Introductions and Approval of Agenda and Minutes

Dave Tucker opened the meeting with introductions. Ms. Sedlak gave a brief update on the action items from October TRC meeting. The development of a five-year plan for the RMP and a meeting of the workgroups with the TRC have been deferred until after the redesign of the Status and Trends (S&T) program is completed. The TRC recommended that the process for the development and review of the five-year plan be discussed with the Steering Committee. The remaining action items were included in the day's agenda.

Chris Sommers motioned to approve the minutes, and Karen Taberski seconded.

Action item: Include action items from the December 2006 meeting into the action items previously developed.

2. Information: October Steering Committee Report

Meg Sedlak provided a brief summary of the Steering Committee (SC) meeting on October 17th, 2006. Items discussed at the meeting included: the budget and

April audit, the October Redesign meeting, the RMP's relevance to the dredging community, and feedback on the Annual Meeting and Pulse.

The budget was generally on track. No significant financial issues were identified as a result of the external financial audit of SFEI accounts. Ms. Sedlak reconciled the RMP accounts to the audit and to SFEI's accounts.

The Steering Committee discussed the RMP fees and the potential impact that the LTMS policy on reducing in-Bay disposal will have on RMP revenues. The consensus of the group was that there would be no renegotiation of fees. With regard to the relevance of the RMP to a specific sector or discharge, Dyan Whyte reminded that the purpose of the RMP was to conduct regional monitoring of the Bay.

3. Information: 2007 Pulse and Annual Meeting

Jay Davis presented an outline for the 2007 Pulse. The management section would include articles from each industry sector describing significant changes in the loadings over the last 20 to 30 years.

It was suggested that the workgroups also develop ideas for articles, particularly as the workgroups prepared the five-year plans and discussed lessons learned and new areas of inquiry. Jay should send a request to the workgroups on this topic. Jim McGrath asked who would write the Hamilton report; Jay indicated that RMP staff was reviewing a summary report on the Hamilton facility for the US Army Corps and that mostly likely one of the authors of this report would write a summary article for the Pulse.

David Tucker suggested that an article on the South Bay Salt Ponds restoration work might be appropriate. Luisa Valiela indicated that John Callaway has conducted several studies in the South Bay Salt Ponds examining deposition before and after the ponds were breached. The EIR will be released in January and there is a potential for developing articles based on the EIR. David Tucker indicated that he was interested in an overview article, less interested in the specifics. SFEI has collected biota in the South Bay Salt Ponds and analyzed it for mercury; however, these data will not be available in time for the Pulse.

Several people suggested that Lynn Trulio or Steve Ritchie write a side bar or article on the South Bay Salt Ponds.

Jim McGrath suggested an accompanying sidebar or article on the North Bay restorations. Carl Wilcox or Steve Rodriguez would be possible authors. Lester McKee suggested an article on the pilot study he is conducting examining loads from a small industrial watershed – since the data are not yet available this will be considered for a later Pulse.

Jay Davis should update the Pulse outline and include it in the Steering Committee agenda package, highlighting the desired contributions from the RMP participants.

The group recommended that the Annual Meeting occur on October 2nd. Dave Tucker suggested that alternative venues be considered in an effort to attract different RMP participants and to get more play in the news media. Mr. Tucker offered to pick up the costs for renting a facility if the meeting were held in the South Bay. Other suggested locations included: Stanford; USGS-Menlo Park; and San Francisco. One advantage of the Oakland location is its central location to all RMP participants and its close proximity to the Regional Water Quality Control Board.

Action items: Update Pulse outline and include in the Steering Committee agenda package. Investigate alternative venues for the 2008 Annual Meeting.

4. Information: Update on the November Redesign Meeting

Meg Sedlak reviewed tables summarizing the September and November Redesign meetings. The September meeting focused on the current elements; the November meeting focused on potential new elements that could be included into Status and Trends. The meetings followed similar formats; for each element, the regulatory context, important concepts, and highlights were presented.

Under existing elements, a reduction in number of water sites (31 to 20), sediment chemistry sites in the winter (47 to 14), and sediment toxicity sites in the winter (27 to 14) were recommended. Tom Hall requested that SFEI staff contact Richard Looker of the RWQCB to assure that a reduction in the number of sites would not adversely affect comparisons to trigger levels established for copper and nickel – the triggers were based on sampling 31 stations. Also, the triggers are expected to increase.

Under new elements, sediment cores, winter water sampling, benthos, small fish, bird eggs, and river loading studies were discussed. It is anticipated that at the March TRC meeting, the group will develop a redesign plan based on these two meetings.

The TRC recommended that a column be included on the tables that presented the justification for the reductions or expansions that were made.

Action item: Meg Sedlak to contact Richard Looker to assure that the reduction in water sites does not impact the copper/nickel trigger levels and report back at the March TRC meeting. Revise the tables to include justifications for the reductions or expansions made. Email the Redesign minutes to the TRC.

5. Discussion: Review of the S&T Chemical Analysis

As requested at the Redesign meeting, Jay Davis presented a table of organic chemicals that are analyzed by the RMP, which media they are present in, and the current and proposed frequency. For PCBs, PAHs, and pesticides, Jay recommended that the program consider going to biennial analyses. For water, this recommendation was largely based on the fact that these compounds are hydrophobic and tend not to be in the water column. In addition, for many of these compounds, there is a substantial data set from which trends and exceedances can be derived. For PBDEs, little information is available and the recommendation was made that these chemicals should be analyzed more frequently (e.g., annually or in the case of the bivalve sampling which is likely to be reduced to biennial sampling, biennially).

Karen Taberski requested that with regard to the recommendation on PCBs that the RMP staff follow up with Fred Hetzel at the RWQCB to confirm that this is acceptable for his data needs. David Tucker asked whether the RMP should consider going to a longer time horizon. Jay Davis indicated that the RMP has just begun the process of collecting randomized data and we do not at this point have much data from the randomized design.

Karen Taberski asked whether a probabilistic design would be used for the winter samples. This will be discussed in more detail at the winter sampling meeting scheduled for January 17th. Chris Sommers noted that if the RMP is collecting sediment samples in the winter with the goal of determining acute toxicity, it may not be necessary to analyze the samples for PCBs.

Jim McGrath observed that it is important to understand what you are sampling. Wind, shear stress, and extreme tidal excursions can all dramatically affect the concentrations of contaminants observed.

The table noted that exceedances of the pesticides CTR objectives were observed. The group commented that this occurred in the early 1990s and was associated with high TSS. Karen Taberski recommended that SFEI work with RWQCB to decide the frequency of pesticide analysis and how much more sampling is needed.

It was noted that EPA criteria for PBDEs are in the works.

The Committee requested that SFEI bring a revised organics table back to the group in March after following up with the Regional Board.

Meg Sedlak indicated that the RMP was also evaluating the cost to conduct inorganic analyses. The RMP was investigating the potential of having a commercial lab conduct inorganic analyses rather than UC-Santa Cruz (UCSC).

This would free up UC-Santa Cruz to conduct studies on metal cycling within the Bay. One option could be mercury isotope analysis to determine source of mercury that is being methylated in the Bay and accumulating in the food web. In 2007, UCSC would be involved in S&T to assure data comparability.

The group commented on how useful it is to have academics involved with the program and that this had been a direct recommendation of the Program Review. Several individuals rhetorically asked why the funds should be directed to UCSC, and not potentially to other universities in the region? The group suggested that the Steering Committee discuss the contributions made by the academic community and how to include them into the program. One possibility to consider is targeting a percentage of the program that should go to university subcontractors. The Committee thought that there were many benefits of working with universities.

Action item: RMP to contact Fred Hetzel to confirm that a reduction in the frequency of PCB analysis will not adversely affect his data needs. SFEI to work with the RWQCB to determine suitable frequency of pesticides and the need for continued sampling. Steering Committee to address the contribution of the academic community and how to include them in the RMP.

6.0 Discussion: Recommendation of the EEPS workgroup for bird egg monitoring

Jay Davis indicated that the Exposure and Effects Pilot Study (EEPS) workgroup had discussed bird egg monitoring at the most recent meeting in December. The consensus of the workgroup was that cormorants and terns represent very different habitats and foraging and therefore, both were extremely useful and important to include in the Status and Trends program. For example, terns forage in the shallow areas of the Bay, they are specifically called out in the mercury TMDL, there is substantial variation in terns, and there is a high potential for adverse effects. In contrast, cormorants forage in the deep waters of the Bay, are better indicators of trends, and are less sensitive than terns to effects of contaminants.

Jay Davis recommended that the 2006 cormorant eggs be analyzed in 2007 and that the next collection occur in 2009. The EEPS program has just funded an effects study to be undertaken by USFWS. The results of this study will likely be available in 2008. Jay Davis recommended that tern sampling be deferred until after this work was completed, most likely 2009.

Karen Taberski strongly endorsed the sampling of both terns and cormorants. David Tucker did not believe that this was a high priority for the program and that this element should be evaluated in the context of the other elements that are being proposed for Status and Trends. Jim McGrath was also uncertain about

funding this and asked whether the Forster's tern was a good proxy for the Least tern. Regional Board staff, however, all agreed that they need tern monitoring. It was noted that in the TMDLs a priority has been placed on biota, particularly endangered species. A better plan for tern monitoring should be developed for the March meeting.

Action item: Address cormorant and tern monitoring in the March TRC meeting in the context of other program elements to be included in Status and Trends.

7.0 2006 Highlights and 2007 Workplan

RMP staff presented the highlights from 2006 and goals for 2007 for each of the major program elements. A summary of each of these presentations is presented below.

7a. Program Management

Program management includes internal and external coordination, financial management, and program management. Meg Sedlak highlighted some of the achievements and commented that the budget was largely on track. She noted that a new workgroup had been added in 2006 on Emerging Contaminant and that several workshops had been convened (e.g., benthos, pyrethroids, PAHs, etc.).

7b. Data Management

Cristina Grosso introduced herself as the data manager for the RMP and outlined some of the major accomplishments of the data management staff in 2006, including validation of two years data in time for the Annual Meeting. Cristina also highlighted the lab status sheet which tracks the turnaround time of the laboratories.

Chris Sommers acknowledge that substantial effort goes into data validation and thanked the data management staff.

7c. Information Dissemination and Annual Reporting

Meg Sedlak stated that RMP staff had been active this year with numerous presentations at a variety of venues including: the National Water Quality Monitoring Council Meeting; State of the Estuary; and SETAC. Other means for disseminating RMP data included written technical reports, the Pulse of the Estuary, and the Annual Monitoring Results.

Jennifer Hunt coordinates the RMP newsletter which is typically distributed twice a year. Ms. Hunt proposed that the newsletter be distributed once a year and that it focus more on results, rather than proposed work. Ms. Hunt distributed a table with potential topics for the next newsletter.

The Committee approved the reducing the frequency to one newsletter per year plus an insert into the Estuary newsletter.

7d. QA

Don Yee, the RMP QA officer, summarized QA events in 2006. The QA group worked with the labs to trouble shoot some of the issues associated with selenium (Brooks Rand laboratories) and the implementation of a HRGC/MS (EBMUD). In addition, the QA officer assisted AXYS in implementing a new ambient extraction method for water filters to reduce the potential for PAH formation. Chris Sommers asked whether the improvements to laboratory techniques should be disseminated to the group through an e-mail or web posting.

RMP staff will continue to revise the QAPP in 2007 and to conduct intercomparison exercises.

7e. Data Integration

Jay Davis explained that as a result of the plethora of other activities in the RMP, that relatively small advances were made on the data integration task. In 2006, the multibox model documentation was completed as well as a sensitivity analysis by Tetra Tech. A summary sidebar article on the contaminant index was published in the Pulse.

Chris Sommers indicated that the TRC and others will need to be involved in evaluation of a contaminant index. A discussion ensued about the advantages of an index (ability to demonstrate progress, to track key parameters, to easily reflect the condition of the Bay) and disadvantages (oversimplification, potential to bias the results). David Tucker indicated that the Australian government (New South Wales) was developing an indices which might serve a good foundation for work in this area. Rainer Hoenicke indicated that SFEP had allocated funding toward the development of an index.

In 2007, the data integration task will address the incorporation of total mercury (or another particle-associated pollutant) into a multibox model, assessing the sediment quality objectives, developing a mercury synthesis for the Bay, and looking at pesticide trends in sediment.

7f. Status and Trends

Meg Sedlak stated that the 2006 cruise had been successful although two bivalve stations were compromised due to mortality and loss of a mooring. In 2007, the redesign group is recommending that the number of water sites be reduced from 31 to 20 and that the bivalve sampling be conducted on a biennial basis (no sampling in 2007).

Chris Sommers motioned for approval of a biennial bivalve program and the reduction of water stations 31 to 20. Karen Taberski seconded this motion, provided Meg Sedlak discuss with Richard Looker whether the copper/nickel triggers would need to be recalculated based on 20 sites rather than 30. The TRC approved the change unanimously.

John Oram presented the results of a preliminary analysis of seasonal variation in contaminant distribution in the Bay. Higher TSS was observed in the winter which resulted in many of the metal concentrations being higher in the winter (e.g., nickel, copper). It was noted that some of the months presented in the graphs had very few samples (e.g., May). A suggestion was made to include sample size on the graphs. Jim McGrath asked whether confounding effects such as runoff, wind, storms, and tides had been evaluated. Trish Mulvey noted that these elements have a substantial impact on contaminant distribution.

Meg Sedlak presented the proposed benthic sampling for 2007 under Status and Trends; two of the options involved collaboration with DWR which will be sampling benthos in the North Bay and the Delta. A discussion ensued about the Sediment Quality Objectives and the need for sampling in 2007. In addition, there was some confusion as to whether SCCWRP was also sampling in the North Bay. The TRC requested that this program element be evaluated together with the other proposed elements in March and that the roles of DWR and SCCWRP be elucidated.

Action item: Re-evaluate this program element in March. Elucidate DWR and SCCWRP's programs in the North bays.

7g. Triennial Sport fish Monitoring

The 2006 triennial sport fish monitoring was successfully completed. Jennifer Hunt distributed a table of fish collected and the respective analysis selected for the fish.

The TRC requested that the 2006 sport fish report be reviewed by the TRC and SC. Committee members complimented the staff on the new report format.

7h. Causes of Toxicity

Sarah Lowe presented an overview of the episodic toxicity program and explained that the program had evolved in response to changing pesticide usage (OP pesticides to pyrethroids) and toxicity observed (water column toxicity to sediment toxicity).

Ms. Lowe stated the goal of the proposed program for 2007 was to determine the causes of toxicity in the Estuary. The proposed study will develop a list of toxic sites based on previous studies. From this list, samples will be collected at eight

sites in 2007 (four at a time). Sediment toxicity will be performed on the eight samples. Those sites demonstrating significant toxicity will be revisited to collect sediment for TIE and chemistry. This will be conducted at two sites.

Jim McGrath asked whether toxicity had been observed at these sites. Sarah confirmed that the sites were selected based on known toxicity. David Tucker asked whether the method would be reproducible at other sites (i.e., if it works at one toxic site, is the method transferable to others). Sarah confirmed that the goal of this work was to develop a tool that could be used a multiple sites to identify toxicity.

There was a short discussion on whether benthic sampling should be included in this project. Brian Anderson indicated that it was a phased approach and that perhaps in the future they might look at benthic ecology.

Chris Sommers motioned for approval; Karen Taberski seconded and the project was approved unanimously.

7i. Exposure and Effects Pilot Study

Meg Sedlak presented the results of the 2006 EEPS studies that included: a study of effect of contamination on the growth, fitness, and reproductive success of shiner surfperch (2nd year of a two-year study); a study of endocrine disruptors and chemical contamination in Bay fish (1st year of a two-year study); application of benthic assessments to the Bay; and a study of mercury concentrations in small fish (part of a four-year study). The EEPS advisory panel stated that they recommended no further pilot studies of the benthic assessments for the 2007. Studies recommended for 2007 were continuation of the endocrine disruption in Bay fish and additional studies of the effects of mercury in terns. The small fish project will be funded in 2007 through the pilot and special studies funds and not through EEPS.

Trish Mulvey questioned how useful tern monitoring would be. Karen Taberski indicated that this information was very helpful to the RWQCB. David Tucker was less interested in funding biological studies.

David Tucker also asked what happens to EEPS after 2008 (EEPS is funded as a set line item through 2008 at a level of approximately \$200,000.). Ms. Sedlak indicated that it could be renewed and that the work group was developing a five-year plan for long-term biological studies. David Tucker suggested that it could continue as a set aside or that the pilot studies could be evaluated with other pilot studies as part of the PS/SS annual review. It was recommended that this issue be discussed in the Steering Committee.

7j & k. Loads from the Delta, Guadalupe, and Hayward

Lester McKee presented the recent results from the three loading studies. The Guadalupe and Delta studies will finish in 2006. In 2007, a two-year study of a small industrialized watershed in Hayward will commence. Lester McKee indicated that the Sources Pathway and Loading workgroup had been active in 2006 and had met twice. Two new science advisory panel members had been appointed; Dr. Eric Stein (SCCWRP) and Dr. Barbara Mahler (USGS).

Lester McKee indicated that the record rainfalls early in 2006 had provided new insight into the phenomenal increase in loading that occurs during heavy precipitation.

7l. RMP/CEP Coring Work and the Contaminant Fate Workgroup

Don Yee updated the group on the coring project. Collection of the 17 cores is now complete and the samples are being radio dated before being sent to the laboratory to be analyzed.

Don Yee indicated that the workgroup had met twice to discuss the multi-box model and pilot and special studies. In 2007, the workgroup will update the five-year plan.

7m. Food Web Modeling

At the October TRC meeting, a food web model was proposed for the remaining \$20,000 of the pilot and special studies funding allocated for 2007. The TRC requested further refinement of this project.

Ben Greenfield outlined the goals of the project: to determine how the San Francisco Bay food web is organized; the relative contribution of contaminant uptake from sediment/water; the connection of observed spatial variation to different food webs. Mr. Greenfield proposed a literature review; field collection of biota (collaborating with existing studies); analysis of fish gut contents to determine what fish are feeding on; and a summary report.

Chris Sommers indicated that the study would help to clarify the reasons why we see high concentrations of contaminants in fish. Karen Taberski indicated that RWQCB staff was very interested in this project.

Karen Taberski motioned for approval; Luisa Valiela seconded the motion and the project was approved.

7o. Detailed Workplan Approval

David Tucker indicated that the benthic component of the detailed workplan and reduction of water sites would be deferred to the March TRC meeting. All remaining portions of detailed workplan were approved (David Tucker motioned; Chris Sommers seconded.)

7p. SWAMP Update

Karen Taberski gave a short overview of current SWAMP activities. She indicated that an advisory panel had met to review the program. In response to their recommendations SWAMP has been significantly revised. The statewide components of the program will be increased to include monitoring of water quality in wadeable streams and bioaccumulation of contaminants in sportfish in lake and reservoirs. Jay Davis is leading the sportfish component. SWAMP is also contributing to other statewide efforts to monitor other types of water bodies including sediment quality studies in estuaries, CRAM in wetlands and an EPA study of lakes. The regional program has completed water quality monitoring of 37 watersheds in the region. Two reports describing the results in 12 of these watersheds will be available in July. Regional SWAMP has also completed reports on contaminants in fish in Bay area reservoirs and trash in creeks. SWAMP data will be evaluated for the "Integrated Report," which includes the 303(d) list and the 305(b) report. Regionally, SWAMP's main goal is to contribute to a watershed monitoring coalition so that watershed monitoring can be conducted in a consistent and collaborative manner.

The program is working collaboration with other monitoring programs such as BAMBI, and RMP. They are developing SWAMP templates that will be available to the public such as QAPPs and data formats.

The next TRC meeting will be on March 20th. The meeting was adjourned at 4:10 pm.

ACTION ITEMS

ACTION	WHO	STATUS
Develop a Five-Year Plan for the RMP that addresses management objectives and questions	Jay Davis	To be conducted after preparation of all workgroup five-year plans.
Convene a meeting of the workgroups with TRC to discuss long-term plans	Meg Sedlak/Jay Davis	To be conducted after completion of a five-year plan for RMP
Identify alternative Annual Meeting locations	Meg Sedlak	
Determine whether the reduction in water sites will adversely affect the trigger levels (e.g., moving from 31 to 20)	Meg Sedlak	
Clarify the benthic research that is occurring in the Northern reaches of the estuary and bring this element back to the TRC in March	Meg Sedlak	
Determine whether the Pulse is published in an ecologically-sensitive manner	Jay Davis	
Contaminant Fate Workgroup to develop a five-year plan to be presented at the CFWG meeting on October 30 th .	John Oram	CFWG will address this at its next meeting in the Spring 2007.