

RMP Technical Review Committee Meeting
December 9th, 2008
San Francisco Estuary Institute
Draft Meeting Minutes

Attendees:

Bridgette DeShields (Arcadis/WSPA)	Jay Davis (SFEI)
Eric Dunlavey (City of San Jose)	Cristina Grosso (SFEI)
Tom Hall (South Bay Dischargers (EOA))	Rainer Hoenicke (SFEI)
Mike Kellogg (CCSF)	Katie Harrold (SFEI)
Trish Mulvey (SFEI Board of Directors)	Jen Hunt (SFEI)
Francois Rodigari (EBMUD/BACWA)	Susan Klosterhaus (SFEI)
Karen Taberski (RWQCB)	Lester McKee (SFEI)
Luisa Valiela (US EPA)	John Oram (SFEI)
	Meg Sedlak (SFEI)
	Sarah Lowe (SFEI)
	Don Yee (SFEI)

1. Introductions and Approval of Agenda and Minutes

Meg Sedlak congratulated Rainer Hoenicke on his new position as Interim Executive Director and asked him to update the TRC on the plans for the transition. Rainer said that the SFEI Board met Friday December 5th. The Board anticipates filling the position of Executive Director within 6 months using a formal search process and an outside consultant. The Board of Directors has formed a subcommittee consisting of Chuck Weir, Jeff Haltner, and Jim McGrath for the search. They are developing a scope of work for the consultant who will be heading the search. Once the scope of work is complete it will be clear how to contact the consultant with recommendations and nominations. The subcommittee is expecting to have the process and scope of work defined by next week.

As a former RMP manager, Rainer is familiar with the RMP structure and goals and although he has not participated recently, he is working with Meg and Jay to remain in the loop and will be more active in the RMP.

Bridgette DeShields asked if anyone had any comments on the last meeting's minutes. There were no comments. Bridgette said her company is Arcadis not BBL. Mike Kellogg motioned that the minutes be approved, Francois Rodigari seconded, and the minutes were approved unanimously.

2. Information: Steering Committee Report

Meg reviewed the major items from the SC meeting on October 21st. The SC discussed the budget forecast for 2009. The RMP is expecting a tighter budget next year, with an expected shortfall on fees from dredgers and low interest rate returns. The January SC meeting will include discussions regarding the budget and fees. Meg noted that the RMP is continuing to work on getting prior year fees from CalTrans. Tom Mumley and Dyan Whyte have been instrumental in discussions with the State Board to work with CalTrans on securing these fees. The 2008 and 2009 CalTrans fees will be collected through the Aquatic Science Center and Meg noted that they expect fewer hurdles with this new option.

The SC also discussed and approved a definition of the Chair's role. Meg noted that this will be raised at the March TRC meeting and that she would like the TRC to approve similar language.

The SC approved the dioxin strategy. It will be funded through past unallocated funds; these funds come from the remainders of closed out contracts. The TRC will need to discuss and approve the dioxin QAPP.

Meg also noted that for 2009 her goal is to get minutes out within one month. Francois thanked Meg and said that the minutes are extremely important for his ability to relay TRC updates through committees, especially BACWA.

3. Information: Annual Meeting and 2009 Pulse

Meg reported that there was a much higher rate of Annual Meeting survey responses this year. She attributed this increase to the switch to an online survey. This allowed more attendees to respond after the meeting. The rating of the meeting was very favorable, 59% excellent and 35% very good. The comments and feedback on topics for future meetings and next year's Pulse were similar to the lunch time voting results with emerging pollutants, relevant policy/TMDLs, and sediment rated highest. The SC felt that global warming is not very close to the RMP goals and therefore may not be appropriate.

Meg said that she received variable feedback on the space. She thought that a better job was done getting attendees to fill in the lower rows and completely fill rows rather than leaving empty seats, which made the room feel less crowded. She asked the TRC how they felt about the space, noting that it may be difficult to find a space that is as centrally located, close to public transit, and within the budget of the program, but that she would be willing to look into other options. Karen Taberski said that she really likes the museum. Bridgette and Karen both noted that it is very convenient to BART.

Jay Davis asked for feedback on ideas for the next Pulse and Annual Meeting. He noted that at the last TRC meeting, which was before the most recent Annual Meeting, they had developed five top ideas. Feedback was also solicited from the attendees and included in the lunch time vote. The ideas receiving the most votes were emerging contaminants, green chemistry, and pollutant pathways. Jay said that the SC took the feedback from the Annual Meeting and TRC and thought that sediment would be the best theme. They felt that the Annual Meeting feedback was valuable, but not binding.

Jay presented a list of potential articles:

- Sediment quality objectives
- Sediment use in habitat restoration
- Decreasing suspended sediment – based on David Schoellhamer's research
- Erosion and deposition – based on Bruce Jaffe's research
- Sediment core study

And backup ideas:

- Sediment fate and transport
- Contamination on the Bay margin
- Sediment budget

And sidebar ideas:

- Mothball Fleet

He noted that the SC is concerned that an article about the sediment coring study may be ambitious. Authors for these proposed topics still need to be selected.

Meg indicated that Michele Jacobi at NOAA is willing to write a sidebar piece on the Mothball Fleet. NOAA will need to submit a report to Congress by January.

Karen indicated she thought the list was good. Bridgette agreed and suggested Coyote Creek and Castro Cove remediation/restoration activities for other sidebars. Karen said that BCDC is also doing work on sediment transport.

Jay then moved to discussing possible ideas for the 2010 Pulse. He noted that emerging contaminants and green chemistry were both popular with the TRC and attendees of the Annual Meeting. The SC is not sure that either topic has enough information yet. Meg noted that by 2010 the RMP will have completed a substantial number of studies on emerging contaminants including Susan Klosterhaus's work on Firemaster and Meg's work on perfluorinated compounds (PFCs) in seals and the upcoming white paper on emerging contaminants. The Green Chemistry Initiative will also have results.

Jay and Meg raised the concerns the SC had with this topic. The major concern was that there are not products yet, but this should not be an issue for 2010 as there will be several completed projects both within and outside of the RMP. Jay noted that Tom Mumley was concerned that management measures for emerging contaminants should also be discussed and that, at this time, there is no management strategy in place.

Jay said that the talks at the Annual Meeting are usually tied to the articles in the Pulse. He suggested Jim Cloern's work on phytoplankton concentrations. Tom Hall noted the disconnect between the trends in the Bay and the Delta. It would be interesting to have both stories presented. David Schoellhamer's research on sediment loads would also be an interesting comparison.

Jay noted that there is now a Master of Ceremonies vacancy. He asked the TRC to consider who would be a good replacement for Mike. It was suggested that perhaps Mike could come back for the day.

Possible dates for the 2009 Annual Meeting were discussed. The dates for State of the Estuary have been set, but are not public yet; Luisa Valiela said she thought it was in October (*The date of the meeting was later confirmed to be September 29th through October 1st*). CASQA will be November 1-4. Possible dates are September 22 and 29 and October 6.

Action Items:

- Meg to send full comment on microbial water quality indicators to Karen Taberski and Mike Kellogg.
- Meg/Jay to confirm Michele Jacobi as author of Mothball Fleet sidebar.
- Bridgette to send Jay contact information for the Castro Cove and Coyote Creek work.
- Karen to send Jay contact information for the BCDC work on sediment transport.
- Meg to look into dates for the 2009 Annual Meeting.

4. Action: Planning Update

Jay asked the stakeholders for their statements of interest. He asked them to send him their lists by December 22nd.

Bridgette said that WSPA does not have any input. Their only concern is receiving water sampling, which is already covered. She noted that dioxins were an issue of concern, but a strategy has been developed and their concerns are being addressed.

Mike Kellogg and Francois both said that their organizations' concerns were covered by Dave Tucker's comments.

Karen said that she, Richard Looker, Naomi Feger, and Barbara Baginska had a meeting discussing modeling and information needs. She is hoping to finalize and merge the two lists and receive internal WB feedback soon so that she can get a final version to Jay before Christmas. Jay said that Richard Looker also did a very useful prioritization of tributary loading needs. He'll send a copy to Karen. Karen asked if a list with priorities would work; Jay said it would.

Tom Hall relayed Chris Sommers' message that he will have BASMAA's input to Jay next week. Tom Hall also indicated that nutrients/ammonia is being discussed as a potential issue and it would be good to have a white paper or workshop on the current state of knowledge. Jay asked that the question be formalized so that it can be included in the Master Plan.

Tom also asked what the status of Andy Cohen's shellfish survey work is. BACWA has a need for information on shellfish surveys. Tom said their need is to either protect the beneficial use or show that it doesn't exist. The Bay's sediment deficit may lead to improved shellfish habitat. From a water quality standpoint, the concern is for bacterial contamination. Mike asked if the state is doing a survey. Tom said the state survey is looking for good beds and habitat, not habitat that needs to be protected. Meg indicated she would follow up with Andy and report back to the TRC regarding future surveys and if he is also looking at submerged beds and/or noting habitat. Karen said that one of the most popular places she has seen is Oakland Inner Harbor. She noted that probably wherever there is hard substrate there will be mussels, but access and other issues will influence if people are harvesting.

Jay noted that it is difficult, but very important, to develop the right questions.

Tom noted that, as the RMP has developed, stakeholders have become more comfortable asking questions and getting the data, the ability to have a conversation has improved.

Tom noted that other than the mercury/selenium work in terns he does not know of any research looking at the antagonism between the two contaminants. He suggested a special study literature review of human and wildlife health effects.

Jay presented an update on the development of strategies for high priority topics:

- The Mercury Strategy has been completed and was approved by the SC in October, 2007; the TRC approved the various elements.
- The Dioxin Strategy has been completed and was approved by the SC in October 2008.

- The Modeling Strategy is being developed. The CFWG met in early 2008 to discuss it and the Water Board developed a statement of modeling needs. Jay asked for volunteers from the TRC to participate in the development prior to the presentation to the CFWG. Trish volunteered.
- The Small Tributary Loading Strategy is also being developed. The SPLWG likes the questions that have been developed so far. A small group including Eric Stein, Mike Stenstrom, Arleen Feng, Chris Sommers, Lester McKee, and Jay is developing a draft strategy. The draft strategy will be reviewed by the Small Tributary team and then go to the SPLWG. Trish asked what the timeline is and Jay said that the subgroup will be meeting in January with the goal of having the strategy developed to influence the study plans for 2010.
- The PCB Strategy has not been developed and will be developed in consultation with the Water Board. Goals include a better linkage analysis. The strategy will come back to the TRC at the March meeting.

Action Items:

- Stakeholders need to send a short statement of information needs to Jay Davis by December 22nd.
- Jay to send a copy of Richard Looker's table of tributary loading needs to Karen.
- Meg to follow up with Andy Cohen regarding questions about his shellfish work and future plans.
- Jay to work with WB to develop PCB Strategy and present to the TRC at March meeting.

5. Action: Dioxin QAPP

Don presented on the development of dioxin data quality objectives and a QAPP. The dioxin strategy defines the management questions, which are similar to questions for other contaminants. Now that the questions have been formulated the question is can we get data capable of answering these questions. Because we don't yet know many of the qualities of the data, e.g., variability and concentrations, it is difficult to say whether or not the data will be able to answer questions such as can we detect a 20% change in concentrations over 20 years with 100 samples. But we can evaluate the data that already exists from other studies and current capabilities. Because we can't know what future advancements will allow in terms of detections we can only evaluate capabilities now. Once we have initial data from the first year of sampling it will be possible to reassess what we can detect and how variable the data is.

Don presented data from previous studies. In 2000 sport fish were analyzed for dioxins. He highlighted the congeners with SRM accuracy or blank detection greater than one-third of the mean concentration. Although many of the congeners had problems with SRM accuracy or blanks detections, he noted that they contributed a very small percentage of the TEQ. The key congeners did not have problems with blank detection or SRM accuracy. Don also presented data from sport fish analyzed in 2006, which had fewer problems. Again, the congeners with detection problems contributed very little to the TEQ, less than 1%.

The challenges of tissue analysis are 1) blank contamination, especially hepta and octa congeners, but the sample concentrations are less than the tetra and penta congeners, 2) recovery issues for some congeners, especially hexa, hepta, and octa CDFs, and 3) previously some precision issues. However, hexa, hepta, and octa congeners contribute less than 5% of TEQs in tissue.

Don also presented data from analysis of 100 L water samples by Axys. The samples were collected by pumping 100 L through XAD columns. The challenges with water samples are blank contamination, lack of standard reference material, and detection limitations. The blanks tend to be contaminated with hepta and octa congeners even with higher sample concentrations. The XAD columns are not very conducive to matrix spikes, which make reference materials difficult. Axys has conducted analysis of blank spikes, but this only captures the extraction recovery. Collection efficiency for PCBs is known to be approximately 50-60% and is assumed to be similar. But, without the preconcentration possible with XAD, all but the hepta and octa congeners are non-detects.

Don presented data from NOAA's analysis of sediment samples. Susan Klosterhaus and Don said that the most sample Axys can analyze is 20 g, which is twice the amount they normally analyze. Francois said that there is a new sample vessel that can hold 40 g. Don noted that blank contamination for sediment samples is probably less of an issue because of the relatively higher concentrations. However, NOAA had non-detects for many congeners, especially tetra, penta, and hexa congeners. Don noted that his estimates were a worst-case scenario because he assumed that NOAA's non-detects were truly zero, but since they are likely not zero and Axys has lower MDLs, it is likely that more of the congeners can be quantified.

Don summarized the DQO needs as specific enough to detect an unknown percent change with x samples. He noted that we cannot predict all of the uses for the data, but can explicitly warn users in the QAPP and data access pages about the uncertainty. He noted that there are also many limitations. If there are lots of non-detects the best that can be said is that the TEQ is less than the sum of MDLs. But, with water preconcentration non-detects are reduced but with only partial recovery, which means that the TEQ is greater than the reported results. There are some alternatives, such as semi-quantitative/experimental methods like semi-permeable membrane devices, but they are also not ideal.

Francois noted the need to keep in mind what the goals of the data are and to reevaluate our ability to address those needs once we have current data. Without the main congeners of interest the data are of limited value. He said it would be prudent to either confirm that we can get the data of interest or reevaluate after the first year of sampling. Don noted that there is enough sediment from 2008 to conduct multiple extractions. Francois noted that there is a new sample vessel that is substantially larger. He also noted that traditional methods of analysis have involved wet sediment and by air-drying sediment and then pulverizing it to increase the surface area there may be better recovery.

Tom Hall asked if there were plans to analyze for dioxins in the sediment cores. Don and Meg noted that the cores are quite precious and that although there are plans to analyze for dioxins, they would prefer to wait until the ambient samples have been analyzed and then decide if it makes sense to proceed with the analysis of cores. Francois also suggested it might make sense to wait on the results of PCB analyses from the cores.

Tom also asked who within SFEI would take on the role that Mike Connor filled in regards to facilitating dioxin monitoring (loading?) communications between the Water Board and the Air Board(s).

Francois suggested that the QAPP include defined needs to allow for easier reevaluation.

6. Action: Joint Meeting of CTAG and TRC

Meg said that Steve Weisberg of SCCWRP suggested a meeting between SCCWRP's Technical Advisory Group (CTAG) and the TRC. SCCWRP conducts similar work as the RMP and Steve thought it would be interesting and useful to have the two groups meet and share ideas since they share mutual goals.

Meg noted that several SCCWRP staff participate in RMP activities, including sitting on workgroup advisory panels.

Mike Kellogg said he thought the meeting is great idea. Bridgette added that all the email correspondence she saw on the topic was very positive.

Francois said that there used to be an inter-lab exercise between EBMUD and SCCWRP that was very useful and would be great to revive.

Luisa asked how similar the organizations' budgets are. Meg said that the monitoring of the Southern California Bight, which occurs every five years, is approximately \$31 million, but that much of that is in-kind services. Jay said that much of SCCWRP's activities are coordinating the efforts of their participants. Many of their dischargers have boats and labs.

Tom Hall said that Chris Sommers had some questions about logistics and suggested meeting somewhere in the middle. Karen noted that the cost of flying would be the same if it was the middle or all the way to SCCWRP. Meg stated that SCCWRP has a new facility that it might be interesting to see. Francois suggested a video conference. Mike asked if it would be a repeating event, in which case travel could be switched. Meg agreed that she thought Steve was envisioning an annual meeting.

Steve suggested several dates, including May 28th, which is when they have one of their regular meetings. Jay said he thought it would be valuable to have an additional meeting, so that the two groups could talk, and not just have the TRC observe a regular CTAG meeting. It was suggested that it could be a two day trip, with a second meeting either before or after the regular CTAG meeting.

Meg said that Steve is looking for volunteers to coordinate the meeting, he has identified two people on their end. Meg said she would be happy to help facilitate the coordination. Bridgette and Karen both volunteered.

7. 2008 Highlights and 2009 Workplan

Meg introduced the topic and noted that this section would highlight the status of select 2008 activities and plans for 2009. She asked for input on strategies and data integration tasks. She asked that the TRC send her comments on the 2009 Workplan by January 15th.

Action Items:

- TRC members need to send comments on the 2009 Workplan to Meg by January 15th.

7a. Strategies

This was covered earlier in the meeting and is included in Section 4.

7b. Data Management

Cristina Grosso presented the data management highlights of 2008 and plans for 2009. The data management team has developed a new version of the web query tool with mapping and graphing abilities; it is not yet live, but is expected to be available soon. They have also moved all Status and Trends data and some Pilot and Special Studies data to SWAMP 2.5. This will allow additional studies' data to be available via the web query tool; currently only FMP and Status and Trends data are available but more are coming. New field data entry tools were developed and used in 2008. They included ancillary data for both the sediment and water Status and Trends cruises and a COC generating form. The data management team has also beta-tested the new data submittal tool, which will generate a list of errors for the lab to correct prior to submission.

For 2008 Status and Trends data Cristina is predicting that all the water, sediment, and bivalve data will be submitted less than 160 days after sample collection (the goal window).

Goals for 2009 are: report data within one year, implement web-based data submittal tool, incorporate additional QA checks into data submittal tool, and integrate pilot and special study data into database.

7c. Website & Annual Monitoring Results

John Oram gave an update on the new website and 2007 Annual Monitoring Results (AMR). The new website is both prettier and has improved functionality. He expects it to be live by the end of 2008. For the 2007 AMR graphics were not included in the report and will instead be available online through the web query tool. This reduced the time required for the AMR and will make the graphics more widely available.

John then demonstrated the new website. It will include functions such as password protected sections for the dissemination of meeting agenda packages.

7d. Information Dissemination: Newsletter

Jen Hunt presented the questions discussed at the previous TRC meeting regarding the RMP newsletter. These included target audience, the value of the newsletter, and possible changes to the frequency and format. The results show that the newsletter is valued and rather than reducing the frequency, higher frequency and switching to fact sheets should be explored.

7e. QA

Don presented quality assurance highlights from 2008. Intercalibrations were conducted between labs for analytes with lab changes. There was no apparent bias between copper samples analyzed by City of San Jose and Brooks Rand in 2008. Comparison of XAD vs whole water samples for PCBs, PAHs, and pesticides were continued. Archived tissue samples were analyzed by Axys for PAHs; the results look okay, which is an improvement over previous non-detects. Susan Klosterhaus has been working with labs on a PBDE intercomparison.

Specimen banking objectives and protocols were developed.

The QA/QC team has continued discussions with labs on the RMP QAPP revisions.

Don also presented goals for 2009. The comparison of XAD vs whole water samples for PAHs, PCBs, and pesticides will be continued. Switching to smaller whole water samples is being considered. Comparison of trace metals, especially copper, will be continued to confirm that the bias seen in 2007 is gone. Intercomparisons for PBDEs will also be continued. The Specimen Banking Protocol and QAPP revisions will be completed and incorporate new analytes such as dioxin.

Susan presented on the status of revisions to the QAPP. The goals of the revisions are to reflect new analytical methods, provide more detail on data objectives, and be consistent with the SWAMP QAPP. In 2008 the QA/QC team solicited feedback on latest version of SWAMP QAPP and held meetings with laboratories to discuss their comments and feedback. In 2009 the plan is to form consensus on definitions (e.g., MDLs, RLs), evaluate to what extent that historical data has met current acceptance criteria, draft QAPP revision and solicit comments, and the write the final QAPP.

Susan also presented on the status of the Specimen Banking Protocol. The goal of the protocol is to have an archiving strategy including protocols and storage details. In 2008 a draft of the "ideal" strategy (disregarding costs and only looking at sample integrity) was produced and reviewed by the Emerging Contaminants Workgroup. In 2009 the samples currently in storage will be re-assessed, options for storage at -80 °C will be evaluated, samples will be prioritized for storage at -80 °C, the strategy will be revised and presented to the ECWG and TRC for review.

7f. Data Integration

Jay presented data integration task options for 2009. Currently the budget is unclear because it is unknown how much labor carryover there will be from 2008. Jay asked that the TRC assume there is \$80,000 available for data integration, but that they also rank their priorities so that if the budget changes it will be possible to adjust accordingly.

Jay gave a brief overview of the possible tasks for 2009. He said he received feedback from the Water Board that 1 – Improved Linkage Analysis for PCBs and Dioxins - should be considered by the appropriate workgroups before being brought to the TRC. Jay described the other proposals: 2 – Development of Bay Margin Model: Phase I was developed with SPLWG, the SPLWG Small Tributaries Subgroup, and CFWG with strong support from the workgroups. 3 – Conceptual Model for Sediment Transport in the Bay was also developed with CFWG, but was not as strongly endorsed by the workgroup as 2. 4 – Improving Sediment Assessment Tools has been strongly endorsed by the EEWG. 5 – Update of the PCB Multibox Model was developed with the CFWG and is necessary for the work to be published.

Karen said that the Water Board ranked 2 the highest and then 4. They feel that 1 needs to be evaluated by a workgroup or strategy team, 3 needs to be further refined and scoped out to make sure that it is not repeating work being conducted by BCDC or USGS, and 5 is not a high priority.

Bridgette ranked the proposals from highest to lowest: 2, 4, 5, 3, 1.

Eric Dunlavey agreed with Karen. He said that San Jose wanted to see a road map or plan for 1, understand how 3 connected to ongoing USGS work, and wondered if 4 is appropriate for RMP work. Jay and Sarah Lowe said that the work on sediment assessment tools so far has focused on

the polyhaline regions, whereas 4 would be focused on mesohaline tools, which would be applicable to San Pablo Bay, the South Bay, and Suisun in the summer.

Tom Hall said that Chris Sommers would send his feedback to Meg and Jay.

Francois asked Karen why 5 was a low priority for the Water Board. She said that the Water Board felt that the multibox model was useful for telling us that we needed more work on sediment transport and Bay margin modeling and that it would be more worthwhile to start working on those projects. But, especially due to the low cost, they weren't opposed to 5, it just wasn't a high priority.

Jay noted that proposals 2 and 4 have a total cost of \$60,000, which would allow for 3 or 5 to also be included depending on the final budget. He said he would further develop 1 with input from the PCB Strategy Team.

Lester suggested analyzing long-term trends in the Status and Trends data. John noted that this was done in the 2006 AMR and that there were very few trends.

7g. Status and Trends

Meg presented an update on Status and Trends sampling in 2008. She noted that we had to rent two vessels because the Bureau of Reclamation's boat was unavailable. She is currently talking with the Bureau to determine if the boat will be available for 2009 sampling. Bivalves were collected in 2008, which went well except that it was difficult to collect clams at the river sites. They were very small and not many were collected. So, inorganics will only be analyzed for one of the river sites. Because the sediment vessel sits higher in the water than the Bureau's boat and because of high winds, the sediment sampling went into two extra days. Meg noted that Sarah Lowe conducted all of the benthic sampling and thanked her for her efforts. PAHs were analyzed for in 2008 because of the Cosco Busan spill. Meg said that initial results appear that the concentrations are not much different than 2007 Central Bay concentrations so it is likely that 2009 will be skipped.

Meg presented the 2009 sampling plan. Water sampling will include organics (e.g., PBDEs, PCBs, and pesticides) with the possible exception of PAHs (need to review data). Bivalves will not be sampled in 2009. Sediment sampling is scheduled for the summer at 47 sites and will include evaluating fresh water amphipod species at river sites and Suisun. Winter sediment sampling will begin in 2010 (alternate years) at 27 sites.

Meg presented on the switch to alternating sediment sampling between wet and dry seasons. The switch has been deferred to 2010 for cost savings. She asked for feedback from the TRC on when to start the wet weather sampling. She noted that because of the existing panel sampling design, starting with wet would result in more wet data over next 10 years. Sarah is discussing the possibility of switching to a six-year panel instead of the current five-year panel with Don Stevens at OSU. The TRC will also need to decide whether to emphasize trends or spatial coverage in the winter sampling. Because the wet weather sampling includes fewer sites, the options are more repeat stations (5 year and 10 year) or more spatial coverage (more random sites). Sarah noted that the samples will include the fixed historical sties and annual repeat sites.

Meg presented highlights from Small Fish. The UC Davis team collected topsmelt and Mississippi silversites from 46 locations with silversides from 35, topsmelt from 31, and both species at 22 sites.

Additionally, fish and sediment samples were collected at 10 locations for mercury isotope analysis by Joel Blum and Gretchen Gehrke from U. Michigan; sediment samples were collected at 19 sites for mercury, methylmercury, and grain size analysis by USGS; and diffusive gradients in thinfilm (DGTs) were deployed at 19 locations – water at 19 and sediment at 8. Initial results are expected in February and March of 2009.

Small fish plans for 2009 are to continue with the monitoring design of 10 fixed sites and 36 new random spatial sites. Sediment mercury and methylmercury analyses will be discontinued due to budget concerns. DGTs will be continued and the Small Fish team is looking for input on the design.

Meg presented an update on Zone 4 Line A. Water year 2009 will be the third year of sampling at the site. We are still awaiting year 2 results. The draft year 1 report is available. Meg highlighted the similarities between Z4LA and Guadalupe when normalized by surface area. Lester noted that the water years are different, so it is not a direct comparison. In 2009 there will be fewer samples and some analytes are going to be dropped.

Jay presented on bird egg monitoring. The monitoring will occur triennially and was deferred from 2008 to begin in 2009 because of logistical issues including birds nesting early and difficulty getting permits. The program includes monitoring of cormorant and tern eggs. The cormorant eggs are better for trend monitoring of average regional conditions in the Bay and will be monitored in three composites per site at three sites for mercury, selenium, PBDEs, PFCs, PCBs, and pesticides. Tern eggs are better for monitoring that is effects-focused high exposure, shallow habitat, and covers a TMDL target. The eggs will be collected from six colonies with three composites per site and analyzed for mercury, selenium, and PBDEs. The sites will be Eden Landing, Pond A16, Napa Marsh, Ponds A7 or A8, and Pond A1 or Charleston Slough, and a sixth site to be determined once the colonies are established, possibly Corte Madera.

Jay presented on Causes of Sediment Toxicity. The study has been completed and the final report will be available soon. The study found surprisingly little toxicity. Options for 2009 follow-on work are being developed and include LC₅₀ studies, a state-wide workgroup to discuss causes to toxicity at moderately toxic sites, and developing a scope of work for additional TIE characterization.

Jay presented an update on Sport Fish monitoring. The report of 2006 results was just released. The striped bass results will be released in a separate report because of a special study using otoliths to determine life history. The draft is expected in January. Plans for 2009 are to monitor the indicator species as well as anchovies. Analytes will be mercury, selenium, PCBs, OC pesticides, PBDEs, PFCs, omega-3 fatty acids, and otoliths. The project will also be coordinated with a SWAMP statewide survey of coastal waters. This will allow the Bay data to be placed in a statewide context and improve fiscal efficiencies.

7h. Coring Project

Don presented an update on the status of the coring project. The current status of analyses are:

- CCSF metals done (Cu, Ni, (+Se, Hg, Pb, others))
- MLML Hg half done
- MLML ancillary (TOC, grainsize) half done
- EBMUD PCBs half done

- USC radiodating Bay cores done, wetlands ongoing
- USGS Bay core model reconstruction done

Most chemical analyses are expected to be completed in approximately 1-2 months.

Jay asked if the technical report would be completed in time for a Pulse article. Don said that if it was just limited to organics and legacy issues it should be okay. Karen noted that if the Pulse is going to have a sediment theme the cores are critical. Tom suggested several side bars instead of one article if the report isn't ready. Karen noted that the legacy story is the big issue. Jay said they would wait one month and see where the legacy data are and reevaluate.

Don presented on the next steps for the study. First, the rest of the data needs to be available and then evaluated for possible normalization against grainsize or TOC. A model of accretion vs mixing needs to be developed. The discrepancies among data need to be evaluated. A strategy for future coring needs to be developed.

7i. Special Studies

Meg presented an update on the special studies for 2009. The mercury strategy studies from 2008 will be presented at the mercury coordination meeting and CFWG meetings February 5th and 6th. The 2009 special studies are: Guadalupe model (year two), a small tributary strategy (TBD), mercury in bird eggs, PAH effects on juvenile flatfish, whitepaper on emerging contaminants, and sources of perfluorinated compounds.

Mercury in Forster's terns has been monitored by USGS. The terns occupy a high trophic level, forage in Bay margins, and have high site fidelity. They also have the highest mercury concentration of 17 aquatic bird species studied in Bay and are included in the TMDL bird egg monitoring target (0.5 g/g fww). The objectives are to link mercury concentrations in down feathers to mercury concentrations in egg homogenate, develop an egg toxicity threshold, and determine effects of mercury on chick mortality by analysis of feathers. They found a strong correlation between egg and down mercury concentrations. They found nest success declined with mercury concentrations, but there are many influences on nest success. The 2009 goals are to refine egg hatchability thresholds using egg micro-sampling techniques and a larger sample size of failed-to-hatch eggs, establish toxicity thresholds for mortality and growth rates, and evaluate mercury interactions with other contaminants, such as selenium.

PAH effects on juvenile flatfish are being tested by NOAA. The objectives of the study are to analyze the effects of individual PAHs and mixtures on a model fish (zebra fish) and determine the threshold for effects of PAHs in sediment-exposed larvae of resident SF Bay flatfish (California halibut).

The emerging contaminants white paper on contaminants of concern from WWTPs will focus on a literature review to identify compounds that pose the greatest concerns for Bay water quality, including consideration of the expected degree of mixing in the Bay.

The sources of perfluorinated compounds (PFCs) study grew out of a study of PFCs in harbor seals. There are many possible sources including consumer and industrial products, aqueous fire-fighting foams, and aviation hydraulic fluids and pathways including wastewater treatment facilities, refineries, and runoff from airports, military installations, landfills, and other source areas. The

proposal is to collect wastewater from five sites (3 South Bay, 1 Central, 1 North Bay) to determine hotspots and loads and 10 grab samples from Status and Trends sites to evaluate a baseline of concentrations. Meg is also considering targeted sites such as refineries, unlined landfills, airports, and military facilities. Tributaries could also be sampled including Z4LA in WY 2009, Guadalupe in WY 2010, and San Joaquin/Sacrament Rivers in WY 2010 for loading information. Food web samples to complement the harbor seal data could be collected from small fish, sport fish, and bird eggs.

7j. Special Studies

John presented an update on his special study of remote observations of episodic sediment transport in SF Bay. The objectives were to utilize moderate-resolution MODIS satellite imagery to develop an episodic sediment budget for San Francisco Bay. In 2007 they identified high-flow events and examined probability of getting images. In 2008 they obtained images, tested and applied algorithms for estimating TSS, estimated loads using DAYFLOW and MI observations, and compared loads to satellite estimates. There were 11 events identified as high flow events (defined as greater than $1,500 \text{ m}^3 \text{ s}^{-1}$). Based on a vertical TSS profile they assumed a 5 m maximum depth of plume and tested uniform, increasing, and decreasing profiles, which affected results by $\pm 50\%$. The key uncertainties are the shape of the vertical TSS profile and TSS algorithm. The project's recommendations for further work are collection of field observations to inform key uncertainties. USGS and UC Berkeley have projects underway but have not yet been out during an outflow event. The RMP may want to consider supplementing the projects. The next steps of the project are a RMP technical report expected in December 2008 and manuscript for *Estuary and Watershed Science*.

John also presented an update on the special study Guadalupe Watershed Model Year 1. The objective of the study is to understand the sources, release, and transport of suspended sediment, mercury, and PCBs from Guadalupe watershed to San Francisco Bay. In year 1 (2008) a hydrologic model was developed and in year 2 (2009) the sediment and contaminants will be modeled.

The Guadalupe watershed is very data rich, with many meteorological stations and flow gages.

The model captures general watershed hydrology and storm events, but needs improvement for annual flow volume, base flow, and storm event peak flow and timing. To improve the model, they plan to extend the calibration period, add urban irrigation into model, revise imperviousness estimates, adjust meteorological segmentation, and re-evaluate calibration parameters.

8. Action: Set Date for Next Meeting

The next TRC meeting is scheduled for Tuesday, March 10th, 2009.

Summary of Action Items

ACTION	WHO	STATUS
Send full comment on microbial water quality indicators to Karen Taberski and Mike Kellogg	Meg Sedlak/Katie Harrold	Complete
Confirm Michele Jacobi as author of Mothball Fleet sidebar for 2009 Pulse	Meg Sedlak	
Send Jay contact information for restoration/remediation work at Castro Cove and Coyote Creek	Bridgette DeShields	
Send Jay contact information for the BCDC work on sediment transport	Karen Taberski	
Dates for the 2009 Annual Meeting	Meg Sedlak	
Stakeholders need to send a short statement of information needs to Jay Davis by December 22 nd	Jay Davis	
Send Richard's table of tributary loading needs to Karen	Jay Davis	
Follow up with Andy Cohen regarding questions about his shellfish work and future plans	Meg Sedlak	
Jay to work with WB to develop PCB Strategy and present to the TRC at March meeting.	Jay Davis	
TRC members need to send comments on the 2009 Workplan to Meg by January 15 th	TRC & Meg Sedlak	

ACTION	WHO	STATUS
Develop a data integration task description to examine PCB congener fingerprints in tributaries, bay, and fish	Jay Davis	To be discussed at December TRC meeting
Revise ten-year plan to include unallocated reserves	Meg Sedlak	
Evaluate whether a strategy is needed for the issue of persistent sediment toxicity	Meg Sedlak	Discussed at November 6 th Toxicity workgroup meeting. Consensus that this is needed and will be developed through workgroup.
Stakeholders need to send a short statement of information needs to Jay Davis by December 9 th	Jay Davis	Jay is working with stakeholders to obtain this information
Develop a PCB strategy for TRC comment and schedule meeting	Jay Davis	
Develop strategy for small tributary loading including management questions	Jay Davis, Richard Looker, Chris Sommers	To be reviewed by SPLWG advisory panel and workgroup at December 8 th meeting.
Develop a modeling strategy	John Oram and Jay Davis	
Provide an update on statistical element of redesign at TRC meeting	Sarah Lowe	
Send summary of mothball fleet to Richard Looker	Meg Sedlak	Done
Develop pollutant-specific links on the website. Include management questions and reports of interest.	John Oram / Meg Sedlak	To be considered as part of the RMP redesign of the website
Update on the scope of work for the QA/QC portion of the dioxin strategy	Susan Klosterhaus/ Francois Rodigari	To be discussed at December 9 th meeting
Get feedback on the factsheets from the Steering Committee	Meg Sedlak	
Find out if CCSF can analyze sediments for selenium	Meg Sedlak	CCSF can analyze selenium in sediments
Identify SFEI staff member to facilitating dioxin monitoring (loading?) communications between the Water Board and the Air Board(s)?	Meg Sedlak	Susan Klosterhaus has met with Mike Connor to discuss this and will contact BAAQMD and CARB to follow up.
Follow-up with Chris (BASMAA) on ideas for website development.	John Oram/ Meg Sedlak	

