



**RMP
Technical Review Committee
June 29th, 2012
San Francisco Estuary Institute
Meeting Summary**

Attendees

Rod Miller, San Francisco Public Utilities Commission
Mike Kellogg, San Francisco Public Utilities Commission
Amy Chastain, San Francisco Public Utilities Commission
Tom Hall, EOA (South Bay Dischargers)
Eric Dunlavey, City of San Jose
Karen Taberski, San Francisco Bay Regional Water Quality Control Board
Naomi Feger, San Francisco Bay Regional Water Resources Control Board
Chris Sommers, EOA (BASMAA)
Diane Griffin, GenOn (Industry)
Josh Grabameyer, Arcadis (Alternate for Bridgette DeShields/ Refineries)
Ian Wren. Baykeeper

Paul Salop, Applied Marine Sciences
Rachel Allen, SFEI
Meg Sedlak, SFEI
David Senn, SFEI
Jay Davis, SFEI
Lester McKee, SFEI
Emily Novick, SFEI

Via Telephone

Robert Lawrence (USACE)

1. Introduction and Approval of Agenda and Minutes [Meg Sedlak]

Meg Sedlak introduced all attendees and asked for approval of 3/13/2012 Technical Review Committee meeting minutes. Mike Kellogg motioned to approve, the motion was seconded and the minutes were unanimously approved. Chris Sommers asked whether there would be time in today's meeting for an update on current projects, beyond the 5 minutes currently scheduled. Meg Sedlak said there was a handout in the agenda package with work group updates, but she will try to make more time. Jay Davis said that items 5 and 6 on the agenda could go faster to

help make more time. Meg also noted that there were several RMP staff changes. Rachel Allen has been accepted to a doctorate program at UC-Berkeley; however, Ms. Sedlak noted that the latest addition to the nutrients team, Emily Novick, is a recent Cal Master's graduate so on balance it seems like an even swap. Ms. Sedlak noted that in addition to being a key RMP staff Emily will be also assisting David Senn in the nutrients area.

2. Information: Steering Committee Minutes [Meg Sedlak]

Meg Sedlak shared updates from 4/30/2012 Steering Committee meeting. The Steering Committee is continuing to evaluate the Program based on the multi-year plan. Meg noted that the SC had reviewed two of the last elements of the multi-year plan, data management and program management. Other items discussed at the Steering Committee meeting were on the day's agenda, such as the Pulse Lite and the CTAG meeting.

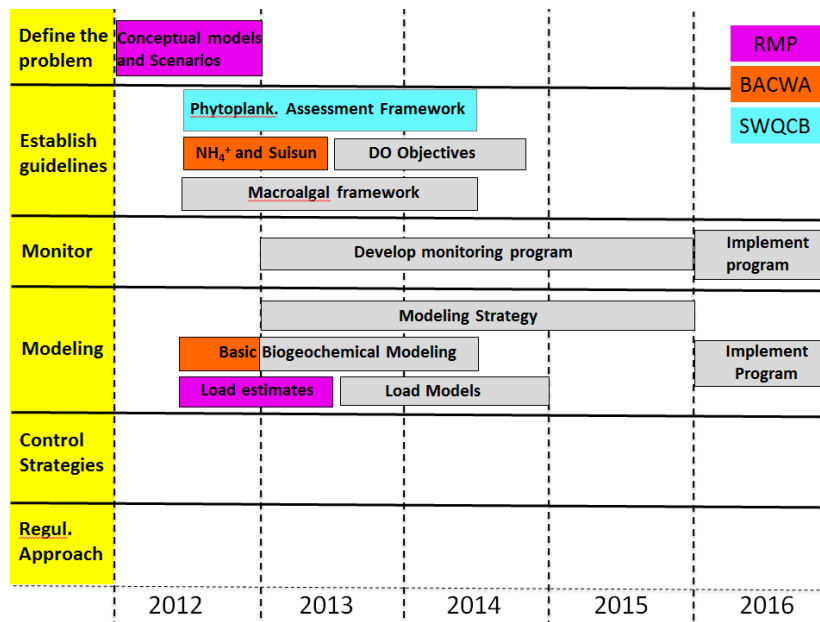
3. Updates on Nutrients and Modeling [David Senn, Jay Davis]

David Senn gave an update to the group on the following items:

- Nutrient Strategy Activities
- RMP funded Nutrient Projects
- Nutrient Priority Projects in 2013
- Update on modeling strategy
- Modeling proposal for 2012-2013

Nutrient Strategy Activities

In 2012, the RMP funded three nutrients projects (conceptual model, loading study, and stormwater nutrients monitoring); additional elements of the nutrient strategy were funded by Bay Area Clean Water Association (BACWA) and the State Water Board. David Senn indicated that the goal of the nutrient strategy is to lay out a well-reasoned and cost-effective program to generate the scientific understanding needed to fully support management decisions. He indicated that given the uncertainty surrounding this issue it will be important to have a sound scientifically-based strategy. He also outlined the five-year timeline of the nutrient strategy, indicated which projects are not yet funded, and showed projected costs for each year.



Nutrient Strategy timeline presented by David Senn

Updates on current projects

David Senn gave an update on the three RMP funded projects.

I. Problem Definition (Developing a conceptual model and possible future scenarios)

The conceptual model is a key part of the project. The critical questions to be answered are:

- What are the current problems of future scenarios that are most concerning?
- What information do we need to evaluate these problems and scenarios?
- How do we detect current problems or the onset of future problems?

Recent progress on the conceptual model included a two-day meeting on May 7, 2012 and May 8, 2012 where a technical team developed conceptual model sketches for dissolved oxygen, phytoplankton biomass, community composition, nitrogen cycling and harmful algal blooms. In addition, the technical team identified important data gaps and uncertainties. David Senn said that the conceptual model for community composition was particularly interesting to the technical team because of the number of factors to consider including growth rate, pelagic grazing, benthic grazing, sedimentation and burial, and germination of resting stages. A draft of the conceptual models will be complete by September 2012 followed by a month-long comment period and a final conceptual model by December 2012. The technical team will reconvene in August 2012 and October 2012 to provide input on the draft and final conceptual models. Following completion of the final conceptual model, there will be external review and the process of this needs further definition. Chris Sommers asked how far we expect to get on this task, and David said we will be able to say “what will the problem look like if one is going to occur”

II. Nutrient Loads Quantification

The purpose of this project is to assess major nutrients loads and composition (i.e. Delta sources, flux through Golden Gate, POTW sources, etc.), to characterize variations in temporally and spatially, and identify major uncertainties and data gaps. David Senn showed a preliminary estimate of POTW loads. Rod Miller asked for clarification on whether these calculations were based on actual data, and David said they were just estimates based on design flow and type of treatment occurring at the facility. In 2012, estimates of Delta, stormwater and Golden Gate loads will be made, and POTW load estimates will be refined using the newly acquired effluent data from the recent 13267 request to WWTPs. Additionally, uncertainties will be identified and recommendations will be made for additional monitoring and modeling work. A draft report will be completed by February 2013 and a final report will be completed by April 2013. Lester McKee commented that internal (recycling) loads are not included in this preliminary loads assessment.

III. Nutrients stormwater monitoring

Stormwater monitoring was conducted in 4 watersheds in 2012 and will occur in 6 watersheds in 2013 for 6 nutrient parameters (i.e., NO₂, NO₃, NH₄, TN, PO₄ and TP). Preliminary review of the RMP data has begun and a technical memo will be completed that summarizes the data and makes recommendations for 2013 sampling. This project is only partially funded by the RMP and the exact timeline of full analysis of stormwater data is to be determined.

Funding Priorities for 2013

David Senn said there are a number of projects to consider for 2013 based on feedback from the model technical team and stakeholder input. Some projects have already been prioritized, 4 of which are being proposed to the RMP, and an additional 7 which are still seeking funding from non-RMP sources. These projects address the following RMP Multi-Year Plan Nutrient Priority Questions:

- Is there a problem or are there signs of a problem with respect to nutrient enrichment?
- What are appropriate guidelines for assessing SF Bay health?
- What is the relative contribution of nutrient loadings pathways, and how do loads vary seasonally and between Bay segments?

I. Moored Sensor Pilot Study

David Senn said there are currently many questions related to a monitoring program for nutrients in the Bay, particularly given the uncertainty of USGS funding for continuing their monitoring program.

- Which parameters should be measured and what are most efficient approaches?

- What is spatial/temporal frequency?
- What combination of approaches is needed?
- What is the cost for running the program?
- What institutional agreements need to be established?
- What is the transition timeline?

This project is being proposed to the RMP for \$120,000, and the total budget for the project is \$270,000. The principal investigators would be Jim Cloern (USGS) and David Senn (SFEI). The objective is to deploy a moored multi-sensor platform and develop regional capacity for use as part of monitoring program. The product would be an operational manual and a technical memo. David emphasized that the purpose of this study would be to see the feasibility of developing a moored sensor program, not simply the installation of a sensor. If additional funding is needed for this project, then there are two options: (1) shift these funds towards biogeochemical modeling and monitoring program development, or; (2) continue with this project but divert funds from the algal biotoxins project.

II. Algal Biotoxins monitoring

This project is being proposed to the RMP for \$65,000. The principal investigator would be Raphe Kudela (UCSC). The objective is to characterize the distribution of algal biotoxins in SF Bay, calibrate the sampler for quantification of ambient concentrations and develop an approach for use in the monitoring program using Solid Phase Adsorption Toxin Tracking (SPATT) samplers at fixed and flow-through locations. The deliverable is a technical memo. David Senn said this project relates to Chris Sommer's earlier question about the problem statement because the problem statement will likely include harmful algal blooms and biotoxins.

III. Stormwater Nutrient Monitoring

This project is being proposed to the RMP for \$41,000. The principal investigator will be David Senn. This study is similar to what was proposed in 2012 and will build our knowledge of nutrient loadings. The objective will be to characterize nutrient concentrations and quantify loads in diverse watersheds by monitoring 6 watersheds for 4 storms and 6 nutrient analytes (i.e., NO₂, NO₃, NH₄, TN, PO₄ and TP). The product will be a technical memo. This project will significantly leverage existing funds allocated for storm water monitoring for POCs.

IV. Assess Nutrient Loads to the Bay – Continuation

This \$30,000 project is a continuation of an existing 2012 project. The principal investigator will be David Senn. The objective will be to assess major nutrient loads and contributions, characterize variations in time and space and identify major uncertainties and data gaps. The approach will be to define POTW estimates with new effluent data, estimate stormwater and nutrient loads, make initial estimates of Golden Gate and Delta loads and identify major uncertainties and data gaps. The product will be a technical report.

Update on Modeling Strategy [Jay Davis, David Senn]

The modeling strategy is being developed under the guidance of the Contaminant Fate work group. There have been two meetings of the Contaminant Fate Work Group Modeling Team (May 1, 2012 and June 4, 2012) from which a strawman approach was developed by David Senn, Don Yee, Craig Jones and Jay Davis. The modeling approach will be driven by nutrients in the near term, but can be used to address other issues such as contaminant fate, sediment transport, and sea-level rise. The approach addresses primary management questions of both nutrients and contaminants. David Senn showed a 2012-2015 timeline of the modeling strategy. The first step is to develop a modeling plan that depends on one platform, such as Delft3D. A complex 3D hydrodynamic model and a simple biogeochemical model will be developed. David clarified that “simple” means less dimensions than the hydrodynamic model, and to do otherwise is not practical in the short term. The biogeochemical model would be used to decide the importance of relative processes and inform the next steps of modeling. This would be combined into a complex biogeochemical model by 2015. The 3D hydrodynamic model could also be combined with a simple contaminant model to create a complex contaminant model.

Discussion

Chris Sommers indicated that he remembered the CFWG emphasizing that the importance of having hydrodynamic and contaminant model linked in the development of the model plan, and that he doesn't see that the linkage articulated here. In addition, Chris was concerned that substantial funding was being allocated to nutrients with contaminants left off the table. David Senn said that the hope is that all of the money allocated to nutrients can be used to develop a complex hydrodynamic model that will also link to a contaminant model. If we were to apply what RMP is now funding for contaminant modeling, we wouldn't get past the complex hydrodynamics, so this is a strategic linking of nutrients and contaminants. Chris indicated that one of the hardest challenges associated with model development is working out the maintenance of the model. Meg Sedlak added that the CFWG agreed that was a hard issue. David added that some of these future costs include licensing fees of model platforms, costs of a consultant and cost of institutional agreements that will need to be established. Jay Davis indicated that this is a complex concept and the team has been very thoughtful with regard to the direction we are taking. In addition, the team has solicited comments from the Water Board, BASMAA, and BACWA. Jay indicated the focus is becoming clearer, with nutrients as the primary driver, then PCB's as the next tier and new contaminants after that. The Water Board would like to like to have a platform in place where when a new contaminant is identified, they can model it. Chris said that the problem is that some dischargers still have some PCB and Hg needs that aren't getting addressed and there are TMDLs for these contaminants. He wanted to make sure this isn't getting lost. Jay acknowledged that these are important points and will make sure that gets noted in upcoming proposals. Chris asked where the direction came from to make nutrients the primary driver, and Jay said it came out of the modeling team. Chris asked whether that decision was approved by the Steering Committee, and Jay said there has been some SC input thus far

(i.e. Tom Mumley) and this proposal will go to the SC at the next meeting. David indicated that there was substantial support for nutrients as the primary driver, but that there were several stakeholders who have a vested interest in seeing that contaminants still remain a high priority. Jay re-assured the group that as the modeling plan evolves, it will be taken back to the TRC and SC for feedback. Chris added that he sees this effort as very large and is wondering who is managing it. He thought that person needs to understand the project management aspect and how to engage stakeholders. Jay responded that David and Don Yee are managing, with support for Craig Jones and oversight from himself and Meg Sedlak. Naomi Feger added that the modeling workgroup is additional support. Jay also noted that Mike Connor and Jim Kelly are on the modeling team, and the TRC will ultimately need to provide approval. Chris asked if the CFWG is plugged in at a particular place or if they are providing general oversight, and Jay agreed that is not well defined and this will be clarified

Action Items

1. Clarify role of CFWG in providing oversight to modeling strategy
2. Obtain SC approval of preliminary modeling plan

4. Special Study Proposals for 2013

Meg Sedlak said proposals are only \$3,000 over the available funds. Naomi Feger asked if this impacts the process for today's meeting, and Chris Sommers said it does matter for the nutrient proposals because they are underfunded.

1: PBDE summary report

This proposal is for \$35,000 and has been ECWG reviewed and approved. The objective is to summarize 2002-2012 PBDE data sets (e.g., sediment, water, bivalve, eggs) and provide context by comparing to OEHHA thresholds and the results of the RMP tern study. The product would be a technical report and a manuscript.

Discussion

Mike Kellogg asked how Susan Klosterhaus's departure from SFEI will effect this proposal. Meg Sedlak said she has already begun looking for a replacement and believes this a project that the replacement can begin in the Fall. Jay Davis added this new person would have support from the institute and the ECWG (i.e. Meg Sedlak, Jay, Don Yee and other SFEI staff). Chris Sommers added that he thinks this product should be a summary report that is written in a way that managers can digest, and offered to provide examples of good reports to managers. Additionally, he asked that this project be completed by May 2013 to assist BASMAA with a permit requirement relating to PBDEs.

Action Items

1. Chris Sommers offered to provide examples of good reports to managers

2. Complete Summary Report in early 2013 (per Chris Sommer's request)

Voting:

When taken to a vote, all attendees voted in favor. Chris Sommers made a strong request that it be completed in the beginning of 2013.

2: Update EC strategy document

This proposal is for \$20,000 and is ECWG reviewed and approved. The objective is to track new emerging contaminant information and update/revise the EC strategy to develop a means for prioritizing contaminants to be monitored. Jay Davis said part of this funding would be dedicated to fostering relationships with researchers and staying abreast of recent findings in the literature.

Discussion

Eric Dunlavy expressed his concern about Susan Klosterhaus's departure and whether her replacement will have the wealth of prior knowledge to complete this task. Meg Sedlak responded that she is looking for a person with a wealth of knowledge and a green chemistry background, but that she can also provide guidance on this proposal. Jay Davis added that Meg and Susan have been working in tandem so there is a fair bit of redundancy. Chris Sommers asked if there will be recommendations coming out of this, and Meg responded that the purpose is to be able to make good recommendations to CFWG on what contaminants to monitor. Chris asked how the state CEC recommendation list plays into this, and Naomi Feger said that while the state screened what they could and made recommendations, the evaluation of chemicals was not comprehensive. Meg added that concentration and toxicity estimates may change and we may need to re-prioritize based on new information. Naomi added that previous attempts at this have been somewhat ad hoc and this would provide the framework. Chris said he thinks that the collaboration needs to extend to dischargers, and Meg said that this is included in the proposal.

Voting:

When taken to a vote, all attendees voted in favor.

3: Current use pesticides (CUP's)

This proposal is for \$15,000 and is ECWG reviewed and approved. The objective is to evaluate existing information on CUP's and organize and focus meeting with key individuals. A number of CUP's are not being monitored and there is a recommendation from the state CEC panel to monitor them.

Discussion:

Karen Taberski asked how Kathy Kuvilia's departure affects this, and Meg Sedlak responded that she expects both Kathy and Dave Schoelhammer to come down for workshops and to continue working on RMP projects.

Voting:

When taken to a vote, all attendees voted in favor.

4: Bioassays

This proposal is for \$70,000 in year 1 and \$56,000 in year 2, pending progress in year 1. The proposal has been EEWG/ECWG reviewed. While the science was felt to be very strong, there were concerns about the timeline and research orientation of this project. The object is to develop a tool to identify CEC's through common modes of action, per the recommendation of the state CEC report, and linking in vitro and in vivo responses. There is no research to date on estuarine organisms.

Discussion

Josh Gravenmeier said he thinks this proposal seems too research oriented. Chris Sommers agreed it is very research oriented, and although it could be a great tool, he wonders if its worth 10% of the RMP budget. He wondered what are the costs of not contributing to this project. Mike Kellogg said the downside is not being involved in this and the RMP name not being out there. He said although he voted against it at the ECWG due to points made by one of the science advisors, he now supports it. Ian Wren added that while everyone at the ECWG thought it was a great project, they doubted the longevity – are we willing to commit tens of thousands of dollars over the long term to make it work? Chris asked about the progress that can be made in 2-years. Meg Sedlak said SCCWRP has money for this and is paying a portion for the same study in freshwater, and RMP funding could transfer it to estuarine. Chris asked if we know enough about the freshwater efforts to know if it's a valuable tool, and Meg responded that if it works for freshwater it should work for estuarine. Chris asks what the alternatives are, whether we could be tracking the progress on this as opposed to funding a researcher, and Jay Davis said that level of tracking is part of proposal #2. Meg asked Naomi Feger about how the state is thinking about CEC's and support for these efforts, and Naomi responded that she hasn't really heard of anything. Chris said that he thinks the RMP is for answering management questions, not doing R&D, and he thought this as outside the scope of the RMP. Meg said that RMP has contributed money in the past to research projects. Jay added that it's important to recognize this would cover only a limited class of pollutants (endocrine disrupters) and it wouldn't work for all chemicals.

Action Items

1. Communicate the group's concerns regarding this proposal at the next SC meetings, even if SC approves additional \$80,000 for Nutrients proposal

Voting:

When taken to a vote, it was not supported by all attendees. Josh Gravenmeier, Chris Sommers, Mike Kellogg, Eric Dunlavey and Rod Miller objected. Rod Miller said he doesn't see how it fits in with moving forward, and Eric Dunlavey wondered about whether the funding will increase over future years.

5. Development of a Mesohaline index

This proposal is for \$75,800 in 2013 to add to the \$50,000 already allocated in 2012. The proposal has been EEWG reviewed and approved. The objective is to develop and calibrate a mesohaline index for the Bay, because none exists for low salinity and freshwater environments.

Voting:

When taken to a vote, all attendees voted in favor.

6. Follow up on Moderate Toxicity Workshop

This is just a placeholder, to be determined after November 2012 workshop.

7. Shared Modeling Proposal

Chris Sommers thought this money should be earmarked, but it still needs guidance and a lot of communication between RMP staff and SC/TRC. Naomi Feger responded that this is already included in the proposal, with a workplan being one of the deliverables.

Voting:

When taken to a vote, all attendees were in favor. Chris Sommers wanted the proposal (particularly task 4) to be further defined to make sure contaminants are included.

8. Stormwater monitoring

This proposal is for \$343,000. It is SPLWG and STLS reviewed and approved. The objective is to expand monitoring into 2 additional watersheds for 2013 to make 6 total (Pulgas and Richmond are additional watersheds).

Voting:

When taken to a vote, all attendees voted in favor.

9. Update Spreadsheet model

This proposal is for \$25,000. It is SPLWG/STLS approved. The objective is to develop and refine mass emissions for Hg and PCBs using a single watershed for calibration and verification and will build upon prior development of this tool.

Voting:

When taken to a vote, all attendees voted in favor.

10. Land use/source specific EMC

This proposal is for \$80,000. It is SPLWG/STLS approved. The objective is to generate even mean concentration data for the regional watershed spreadsheet model.

Voting:

When taken to a vote, all attendees voted in favor.

11. Management support for STLS

This proposal is for \$20,000 and is SPLWG/STLS reviewed and approved. The objective is coordination and meetings regarding monitoring, EMC development and input on Regional Watershed Model.

Voting:

When taken to a vote, all attendees voted in favor.

12: Nutrients

This proposal is for \$263,000. The project has five tasks and the objectives are to install moored sensors, develop a tool for monitoring harmful algal blooms, monitor stormwater in 6 catchments and continue to develop nutrients loads in North and Central Bay.

Discussion

I. Moored sensor

Chris Sommers asked about the location of the sensor, and that it only gives data about one spot. Ian Wren said the location is convenient for calibration and maintenance by USGS, and David Senn added that Jim Cloern thinks that south of Dumbarton is likely where we would first see a problem. Chris asked for clarification of the timeline, and David said it would be purchased in February 2013 and data analysis would start in May/June 2013. Chris expressed concern about data management for a sensor that takes measurements every 15 minutes, and whether the budget reflects this. David said this was considered in the budgeting of this project, but may be on the

low end of what it would take. There is about 1 month of full-time funding for data management and interpretation (outside of time for writing memo), which probably isn't enough to place the data into RMP's online database. Tom Hall indicated that his main concern was the project being about \$80,000 short. He wanted to discuss options for addressing this deficit and if this program has merit. Chris responded that the moored sensor monitoring is a no-regrets decision, but is concerned about the lack of funds. David mentioned that at the June 22, 2012 Nutrient Stakeholder meeting, there was one group that thought they could contribute some, but not all, of the funding. Other groups have interests in different parts of the Bay (i.e. since its not Suisun, the Regional Water Board is not as interested). BACWA has already given \$350,000 to nutrients, and some people believe this is an important project, but don't think they will fund this. USGS is matching within-kind labor for calibration and maintenance. Karen Taberski asked why this is so expensive. David said he thinks LOBO sensors are the best choice. They have high-quality components and prevent biofouling. Chris added that telemetry adds some cost. Naomi Feger asked how many sensors you would need to go from one location to a long-term monitoring program. David answered five, one for each embayment. Chris asked if we are making a commitment of this level of funding for several years, and David said yes, at least for 2014. Chris said he doesn't think there is a point to buying the equipment for just a few years, and Meg Sedlak said that there is an additional \$100,000 in the RMP Master Plan for Nutrients next year. Amy Chastain asked about whether the equipment is reliable enough to use more than one year, and Naomi Feger said that data for even a year is useful and the development of the program is also useful – that it's a pilot for effort, not just for technology. David Senn expressed the importance of building state and federal relationships, and Chris Sommers agreed we should keep looking for this. Naomi suggested shifting funding from the Bioassays project, and Jay Davis suggested you could ask for an additional \$80,000 to fund both this project and the Bioassay projects – unencumbered funds could possibly be used for this. Chris also suggested buying the instrument now, doing more planning and deploying in 2014. The estimates of maintenance, data management funding may be more developed in a year. David said he thinks there is a sense of urgency around figuring out a monitoring program. Naomi Feger summarized by saying there are a few options: (1) ask for full funding, but maybe spread out over two years (2) seek funding from other collaborators, (3) divert funding from Bioassay project or (4) obtain funding from the unencumbered reserves. Naomi Feger thought that if everyone is in favor of the idea, it should be pushed through and hope the funding comes. Chris Sommers suggested adding \$80,000 to the proposal and letting the Steering Committee make the decision.

II. Algal Biotoxins

Eric Dunlavey asked if harmful algal blooms are currently a problem. Naomi Feger said that the fact we are seeing them at all is a problem, and Karen Taberski added microcystins were detected in the North Bay and there were 21 sea otter deaths in Monterey Bay that were attributed to microcystins. Tom Hall agreed this was identified as a data gap and it's important to establish a baseline algal biotoxin level, but wondered if this is something that could be put off

for a year or if the state and federal water contractors are interested in funding it. Naomi said that Val Connor (SFCWA) might be, if the study included the Delta. Chris Sommers expressed concern about the ability to interpret the results of a SPATT, and David Senn pointed out that part of the project is calibration, and that even if calibration is off, continuous sampling can still show trends. David asked if despite the calibration and biofouling issues, does the group see this as a promising technique and part of a monitoring system in 5 years? Karen Taberski said she sees this as part of defining the problem.

III. Load characterization

Tom Hall asked if there are provisions to fund work to analyze effluent characterization data. David Senn said it needs to be built into 2013. Naomi Feger said the water board is going to contribute some to compile the new data and SFEI is working on the historical data as it comes in. Tom Hall said there was a proposal for BACWA to do some compiling of historical data, and Amy Chastain said she thought the database had been transferred to SFEI. *(Meg Sedlak confirmed tha the data base had been transferred to SFEI and that Data Management staff are working with BACWA to develop appropriate query tools)*

IV. Project Management

Chris Sommers asked if the funding (\$10,000) is too small. He wanted to make sure there is enough money to report back to stakeholders and get their input.

Action Items

1. Review project management budget to make sure it is adequate
2. Review data management budgeting for moored sensor project to make sure it is adequate
3. Redo proposal to request an additional \$80,000 and propose to Steering Committee.

Voting:

When taken to a vote, all attendees voted in favor of the proposal and agreed it should be re-writttten to request an additional \$80,000 before going before SC

5. Pulse Lite [Jay Davis]

Mike Kellogg asked for clarification on the purpose of Pulse Lite. Jay Davis said the full Pulse will come every two years, and the Pulse Lite will give stakeholders a quick overview the Program, updates on activities, changes since last year and where money is being spent. The Pulse is about the Bay, the Pulse Lite is about the RMP. Naomi Feger asked what is new in the document, and Jay said they've included a top 10 of RMP, updates to trends, recent publications and the multi-year plan. Most of the new content is on page 3-7. Naomi asked if it's worth just

publishing these pages, and Jay said that things outside of these pages (i.e. Multi-year plan) are new to stakeholders. Karen Taberski agreed its useful to synthesize what the RMP does for stakeholders. Chris Sommers asked whether the status and trends data is new, and Jay said it will include the most recent data. Jay said he wants production to start next week, but didn't get as much feedback as he would have liked on the draft. He asked for specific comments on permit conditions, help updating the 303(d) list and whether timing on pages 10-11 has changed. Rod Miller asked that page 13 about oversight structure be cleaned up because he found it confusing. He further added that the two pie charts on page 12 should be the same size, and requests and glossary of acronyms be added. Amy Chastain asked that the language about Se and Dioxin be changed to "management" from "permit". Naomi Feger, Karen Taberski and Chris Sommers all agreed to give feedback, but maybe not before July 2nd deadline.

Action Items

1. Elements of Pulse Lite related to permit conditions should be reviewed before final version of Pulse Lite is sent to Linda
2. Water Board needs to provide input on 303(d) list for Pulse Lite and if timing on page 10-11 has changed
3. Pg 12: the pie charts of funds and expenses should be equally sized
4. Pg 13 of Pulse Lite should be better organized and should have better explanation of oversight structure
5. Change language about Se and Dioxin from "management" to "permit"
6. Glossary explaining acronyms
7. Chris Sommers agreed to give comments by early next week
8. Naomi and Karen commit to give comments (jointly), but won't be done by Jay's Monday deadline

6. Small fish update [Rachel Allen]

Rachel Allen shares the results of the 2011 small fish sampling campaign, which addressed several mercury strategy questions, such as: what are sources of mercury? and where and when does uptake occur? As background, sampling also occurred in 2008-2010 for silverside and topsmelt, and 83% of fish sampled exceeded the TMDL target. 2011 sampling centered around 4 sites – 3 long term and 1 historical – and 4 dates: 10/2010, 1/2011, 5/2011, 7/2011. 99% of samples exceeded TMDL target, but Rachel commented that this may be due to site selection. Silverside showed general higher concentrations than topsmelt. There was significant seasonal variation in silverside at Benicia and Mallard Island, and at Alviso for topsmelt. Rachel said that the numbers are consistent with previous results – silverside higher than topsmelt, significant difference between sites and lower concentrations at POTW site. She said there remain some open questions about mercury, such as understanding these complex spatial and seasonal patterns, long-term temporal trends and the role of small fish during the period of exposure to

breeding birds. Potential future sampling could consider the annual index period. She said there are currently 3 manuscripts in preparations, with Ben Greenfield (formally SFEI) as the lead author: (1) PCB manuscript; (2) spatial trends in mercury and (3) temporal trends in mercury. POTW effects data has also been included in an environmental research manuscript, and results are being added to CEDEN.

Discussion

Chris Sommers asked if temperature data was collected for possible effect on methylation, and Rachel Allen said it was not. Amy Chastain asked the lifetime of silverside, and Rachel said 1-2 years, so the age of sampled fish is fairly consistent (based on minimum length). Jay Davis added there is a lot of control on age because it's a narrow size range that is sampled. Amy asked if this gives us a better idea of how big the sample size needs to be for future monitoring, and Jay said it does, as well as gives ideas about how to design a study in general. Chris said he is more interested in PCB, and Rachel said they have that data for previous years but not presented here. Paul Salop said there is some work done by USACE to set up test ponds to study methylation rate, and that might be of interest to people here.

There was also discussion about continuation of this project. Naomi Feger asked why no more data was collected after 2011, and Jay Davis said it wasn't refunded past 2011. He said it wasn't totally clear what to do with the data and how to proceed, and that further investment isn't a clear no-regrets option. Naomi added there is some question about what data to collect and what at spatial/temporal scale. Jay said there are some deliverables in the works, such as a manuscript he recently received feedback on, a technical report and a synthesis.

7. Annual Meeting Draft Agenda [Jay Davis]

Jay Davis said he plans to get together with a subgroup of the SC to finalize this, but wanted some feedback here. He said the topic would be modeling, based on the suggestion by Tom Mumley (RWQCB). It will be structured by workgroup with one science advisor to represent each, and then a discussion led by a management representative, in order to promote more participation and management perspective. Meg Sedlak or Naomi Feger could give the ECWG update.

Discussion

Karen Taberski noted that she will not be present and should be replaced on the agenda. Chris Sommers suggested restructuring the agenda. Everything before lunch could be Bay modeling and watershed modeling (SPLWG) and have one discussion about both. Then, after lunch, EEWG could present, including general updates and the copper and effects on the olfactory nerve study, followed by ECWG, which would segue into next year's topic. Jay Davis asked who would give the watershed talks, and Chris Sommers suggested Mike Stenstrom (UCLA) and

Alicia Gilbreath to give SFEI update. Jay Davis said he will reshuffle the agenda to match this, and asks for further recommendation of speakers to be sent to him.

Action Items

1. Jay Davis will revise the agenda and will then send it out to Tom Mumley, Karin North and the group

8. RMP Deliverables Scorecard [Meg Sedlak]

Meg Sedlak shared the RMP deliverables scorecard with the group. Chris Sommers pointed out that some projects are way behind schedule and this should be kept in mind when determining a reasonable scope for special study proposals. He also asked for clarification on the stars, which Meg indicated the item needs to be discussed with the SC. Meg also noticed the mercury synthesis is missing and will add it back into the scorecard. Jay Davis said item #2 will be re-revised in a few weeks, items #8,9 and 35-39 are all good to go. Chris requested adding the deliverable type to the scorecard.

Action Items

1. Meg Sedlak will add mercury synthesis back to scorecard
2. Chris Sommers requested to add type of deliverable to scorecard

9. Quarterly updates

Next sportfish meeting is July 10, 2012

Next TRC meeting is September 18, 2012

Next SPLWG meeting is October 24, 2012