RMP
Technical Review Committee
March 5th, 2013
San Francisco Estuary Institute
Meeting Summary

Attendees
Luisa Valiela, US EPA
Karen Taberski, SFRWQCB
Bridgette DeShields, Arcadis/WSPA
Eric Dunlavey, City of San Jose
Tom Hall, EOA, Inc. (South Bay Dischargers)
Nirmela Arsem, EBMUD
Chris Sommers, EOA, Inc. (BASMAA)
Mike Connor, EBDA
Rod Miller, SFPUC
Naomi Feger, SFRWCQB
Amy Chastain, AECOM/ SFPUC
Tong Yin, SFRWQCB
Meg Sedlak, SFEI
Jay Davis, SFEI
Emily Novick, SFEI
David Senn, SFEI
Lester McKee, SFEI
Meredith Williams, SFEI
Don Yee, SFEI
Ellen Willis-Norton, SFEI

Call-In
Rob Lawrence, US Army Corps of Engineers

1. Introduction and Approval of Agenda and Minutes [Bridgette DeShields]
Karen Taberski motioned to approve the previous TRC meeting summary pending correction of a minor typo. Tom Hall seconded; Bridgette DeShields asked if all members were in favor, and the summary was unanimously approved.

2. Action: Selection of a Chair [Group]
Meg Sedlak informed the group that no chair nominations had been put forth. The committee unanimously endorsed Bridgette DeShields to continue as chair. Meg Sedlak thanked Bridgette for so generously serving in this role.

3. Information: Steering Committee Report [Meg Sedlak]
Meg Sedlak noted that the majority of the items that were discussed during the SC meeting are also on today's TRC agenda, including the Mercury workshop, a discussion of the Pulse outline, and an update on Nutrient activities. Meg Sedlak added that the principal item discussed at the meeting was the approval of the 2013 budget.

4. Information: Update on 2013 Pulse and the State of the Estuary Conference/RMP Annual Meeting [Jay Davis and Meg Sedlak]
Pulse of the Estuary

Jay Davis reviewed the Pulse of the Estuary outline, noting that the focus of current activities is the management and science articles. Lorien Fono, a consultant to BACWA, is now the lead author for the management article and is coordinating contributor efforts. Jay then described the SC's reorganization of the science section; rather than arranging the articles by project, the section will be organized by chemical class. The science section is now a guide to CECs that will hopefully become the main reference for CECs in the Bay. The tiered management and risk diagram will be used to unify the section. The CECs that are of higher concern will receive a greater amount of space. The first draft of the section will be completed by the end of the month for internal review; the TRC will receive a draft on April 18.

Discussion:
Glancing at the Pulse outline, Karen Taberski wondered what the comment "Why start all y-axis at 0?" under the Trends at a Glance section meant. Rob Lawrence also asked about the difference between two bullet points in the section: "Wetland Acres Total" and "Acreage of marshland/wetlands." Jay responded that all of the bullet points in this section were taken directly from the Annual Meeting's interactive posters and have not been compiled or edited. Chris Sommers asked about the process for determining what will be included in the section. Jay replied that he will come up with a draft list that he will present during the next meeting, or via email. He requested that suggestions be sent directly to him. . Luisa Valiela asked how many topics would be in the Trends at a Glance section. Jay responded that he won't be sure until the articles are written, but there will not be room for very many.

Action Items:
1. TRC members will send Jay Davis topic suggestions for the "Trends at a Glance" section of the Pulse.

Annual Meeting
Meg provided an update on the joint RMP Annual Meeting/ State of the Estuary Conference's planning process. The RMP portion of the meeting will be held on the second day, October 30. The RMP will host one plenary in the morning that will focus on CECs. The current choices for the plenary speakers are Derek Muir, Jim Cloern, and Debbie Raphael. In the afternoon there will be two concurrent sessions with four speakers per session. One session will focus on CECs and the other will be on water quality or nutrients. (*At the planning meeting on March 6th, the committee discussed either one or two CEC sessions, nutrients and trash as the possible four water quality sessions.)*

Jay Davis informed the TRC that in 2011 the Pulse of the Estuary was published around the same time as the State of the Bay report. In a desire to avoid future redundancy, Jay asked if the RMP should begin publishing Pulse Lite's rather than the full Pulse when State of the Estuary Conference is held; however, the State of the Bay/Estuary report is not published for every State of the Estuary conference. Another option Jay presented is producing Pulse Lite when a State of the Estuary report is scheduled for publication, even if it meant publishing Pulse Lite in consecutive years.

Discussion:
Bridgette DeShields agreed with publishing a Pulse Lite during the years that a State of the Estuary report is prepared. Chris Sommers noted that the last year the Pulse Lite was quite long and suggested only publishing new content to reduce the length. Eric Dunlavey asked if producing the Pulse Lite required less effort than publishing a full Pulse. Jay responded that producing a Pulse Lite takes around half the time, for both the RMP and the Water Board. He added that the RMP can work on reducing the Pulse Lite's length.

5. Information: Update on Dioxin Results [Don Yee]
Don presented an update on 2008-2010 dioxin results. In addition, Don noted that the dioxin funds set aside for 2012 are currently in flux as it appears that the information needs have changed. Don presented a number of graphs characterizing dioxin concentrations in 2008-2010 surface sediment samples including: total dioxins across subembayments, seasonal concentration differences, congener profiles across subembayments, and a comparison of RMP data to 2000 EMAP data. Total concentrations in sediment ranged from 100 to 400 pg/g. A spatial trend was observed with higher concentrations observed in South Bay and lower concentrations in the Rivers. Don noted that there was no consistent seasonal concentration differences, the only two stations that showed much variation were the river station BG20 and the Lower South Bay site, BA10. The seasonal differences at the two stations were most likely due to spatial variability, such as hitting a relatively sandy patch at a site. The dominant congener observed was the octa dioxin (OCCD ~ 80%). The RMP data collected in 2008-2010 was fairly similar to the previous effort conducted in 2000 by EMAP. Don ended the surface sediment section of the presentation by stating that sampling dioxins every year is not necessary to determine long-term trends; rather clustered sampling in widely spaced intervals (e.g. in five years sample three years in a row) provides a more powerful time comparison.

Don displayed results from the sediment cores in the open bay and wetlands of the five subembayments. He stated that the peaks on the graphs were during the 1970s and 80s when there were likely more local sources, such as municipal or medical incinerators, etc. Don noted that in many cores the surface sediment at the top of the core is nearly as low as the historic baseline. He ended the discussion by saying that core samples could help pinpoint historical loads of known dioxin sources, if any such sources were already identified. However, management has not yet identified any particular (tributary or point) sources of interest. Don then presented preliminary dioxin tributary loading data, which was typical for urban tributaries nationally. He noted that there have been very few watersheds monitored especially in North Bay, but he expects urban tributary data to be within a similar range.

Don ended the discussion by listing possible use of 2012 dioxin funds: 1) further surface sediment sampling 2) additional core sampling 3) increased tributary monitoring or 4) sampling the Bay margins. Don supported margins sampling because discharge from terrestrial sources has to filter through the margins; therefore, dioxin levels will most likely be higher and more spatially distinct in the margins.

Discussion:

Dioxins in Surface Sediment

Mike Connor noted that in the kriging map for total dioxin concentrations, there are hotspots directly next to areas with very low dioxin concentrations. Don responded that the narrow range of the legend indicates that the "hottest" locations do not actually have very high concentrations. Additionally the only areas with concentrations that are near zero are in Suisun Bay and the Rivers sites. Mike also asked how normalizing for grain size alters trend results; he noted that the concentration difference moving from north to south is relatively low and suggested that the variation could be entirely explained by grain size. Don responded that he did normalize for grain size and the concentration difference did flatten out a bit more, but general trend did not change. Don added that the concentrations are similar across the Bay as a result of atmospheric deposition. Jay questioned if the spatial profile was mainly due to atmospheric deposition, or because of both atmospheric deposition and watershed inputs. Don replied that both are important sources. Rod Miller asked if Don was comfortable with the trend analysis because the concentrations were close to the sensitivity limits. Don replied that he is comfortable with the results because of the data's consistency in abundance of different congeners; problems with lab analysis would usually show unusually high concentrations of scarce congeners.

Bridgette DeShields asked Don to elaborate on the congener profiles in the subembayments. Don responded that the profiles were similar throughout the entire Bay; therefore, the congeners were most likely distributed regionally. Chris Sommers suggested removing OCDD, which dominated the profile, to provide a more accurate look at the remaining congener's profiles. Jay asked what the congener profile would look like with a different source. Bridgette replied that if the source was wood burning the profile would include more TCDF and Hx and PeCDDs. Chris asked if there was a specific source for PeCDD, the most prevalent congener contributing to TEQ; Don replied there was not.

Dioxins in Cores

Mike and Bridgette noted that dioxin concentrations are almost back to pre-industrial levels, which is the trend nationwide. Bridgette stated that the ~ 90 percent reduction is most likely the greatest reduction we can expect given that there is continued atmospheric deposition. Chris Sommers asked why learning about historical sources is necessary if we know concentrations are decreasing. Don responded that by knowing the source, we are able to prove that past or current managing is effective. Chris Sommers asked if Don was confident that the wetland and open bay cores were not influenced by mixing and were appropriate time samples. Don responded that he is more confident that there is a lack of mixing in the wetland cores.

Dioxins in Tributary Loads

Mike Connor asked if the recent tributary loading data has changed the mass balance estimates for the Bay that were made five years ago. Don responded that the original estimates were in the right order of magnitude, but the larger dataset increases the estimates' confidence and precision.

Use of 2012 Funds

The TRC then brainstormed possible uses for the 2012 dioxin funds. Naomi Feger noted that there is already enough tributary loading data for the conceptual model. Karen Taberski mentioned the possibility of increasing the number of core samples in the North Bay. Mike

Connor would like to look at another contaminant that is cheaper to analyze and more likely to change. Don responded that while monitoring other contaminants, such as PCBs, dioxins samples could be collected as well. The parallel analyses would allow a comparison of differences in sources and management action's effectiveness. Bridgette and Karen noted that the projected completion date for the dioxin TMDL is 2019. Naomi clarified that the 2019 date is an estimate of when the TMDL might be completed but it does not mean that the Board will make a dioxin TMDL a priority in the short term. The consensus was to put the 2012 dioxin funds into the reserve until the data that has been collected is written up for regulatory agencies to review. A request was made to reconvene the dioxin group after the Water Board has had an opportunity to review the available data and consider its information needs. Depending on the outcome of the RWQCB needs, it may be necessary to conduct additional special studies.

5.5. Information: PCB Synthesis Update [Jay Davis]

Jay Davis gave an update on the PCB synthesis, which will be completed by May 15. Chris Sommers mentioned that the synthesis is going to inform the integrative monitoring report for stormwater; therefore, the May 15 deadline must be met. Jay Davis then presented the outline for the synthesis, based on the nine questions outlined by the PCB strategy. Each question will be addressed in four to five pages. The document will evaluate at PCB trends over time to determine the successes and failures of management actions. Jay reviewed the PCB small fish data; highlighting that PCB contamination in small fish is comparable to concentrations in higher trophic levels because they are found in the contaminated margins. Jay moved on to present a kriging map of the Bay and a temporal trend map. He stated that after 2007 there was a statistically significant jump in PCB concentrations in each subembayment and throughout the whole Bay (from 4 to 10 ppb). From 2002-2003 the average concentrations were high, the values then decreased from 2004-2006, and in 2007 the concentrations increased and have since remained elevated. Don Yee has confirmed that the results are not due to a QA issue. Jay showed kriging maps for other S&T contaminants, and stated that a similar step-change was seen for some pesticides, methylmercury, but not for total mercury. Jay ended the presentation by stating that changing the S&T sampling design made it so seasonal sediment data is only available every four years; therefore, monitoring the PCB concentration trend and its relationship to seasonality will be difficult.

Discussion:

Chris Sommers began the discussion by mentioning that there is a considerable amount of new PCB loading estimates that will be reported in a parallel document; the document will explain the loading estimates in more detail than the synthesis. Chris also noted that the PCB concentrations presented are near the detection limit and the bed sediment PCB target is two orders of magnitude above the highest value. Jay said he was planning on highlighting that fact in the synthesis. Naomi noted that the 40 congeners that are included in the PCB total generally have low concentrations.

Chris then moved on to discuss the PCB synthesis outline, asking Jay what number three in the outline entailed: "Rates of recovery of the Bay, its segments, and in-Bay contaminated sites." Jay responded that the third section will look at trend information, such as time series graphs of PCBs in biota and wetland cores. Section three will be based on empirical data, rather than model outputs. Mike Connor asked why a section on transport and transformation was not in the

outline; Jay replied that it would be included in the modeling section. Chris and Mike suggested including a tenth question on the outline that asks what uncertainties still exist and how would increasing data collection reduce those uncertainties. The section would lay out the RMP's future PCB science strategy.

Mike Connor then asked if Jay Davis could plot historical naval bases on the map showing PCB concentrations in small fish. Chris Sommers added that there is a strong connection between nearby terrestrial hotspots and high PCB concentrations in small fish. He noted that there are fewer hotspots in the South Bay because the region was industrialized on a much later time frame. Jay said that the small fish data is patchy; when looking at shiner surfperch, the spatial differences are clearer because of their narrow home range. Mike ended the discussion by asking Jay if the lack of a concentration difference between small fish and higher trophic level fish is not due to spatial differences, but as result of overpredicting biomagnification.

Naomi Feger asked why there was a concentration increase in 2007; she wondered if the jump was because sampling took place after a wet year or dry year. Jay responded that sampling took place after the 2006 January flood. But, the concentration increase occurred a year after the flood. Naomi hypothesized that cleaner Delta sediment could have fluxed into the Bay after the storm, but after mixing the concentrations could have increased again. Jay and Chris agreed both stating that the concentration increase could be due to watershed inputs or erosion of contaminated sediment. Rod suggested correlating PCB concentrations over time to rainfall. Mike suggested completing a multivariate analysis on the entire S&T dataset to compare contaminates time-series trends.

Action Items:
2. Jay Davis will include a final section in the PCB Synthesis outline regarding the RMP's science strategy moving forward.
3. Jay Davis will finish the PCB Synthesis document by May 15 and reconvene the PCB Strategy group to review draft document and discuss next steps.

6. Action: Margins Sampling Proposal [Don Yee]
Don Yee presented a pre-proposal for sampling the Bay's margins. The purpose of the presentation was to determine if the TRC felt that there was merit in pursuing margin's sampling program. Don began by stating that he noticed a lack of data for the Bay margins when drafting a margins conceptual model for the CFWG. A margins sampling study would help calibrate the conceptual model. Don discussed the importance the Bay's margins and then displayed a hydrodynamic map of the Bay showing the slow movement in the margins, which increases the likelihood of contamination. He maintained that margins are the best opportunity to see changes resulting from management practice changes. Additionally, Don argued for margins sampling because there is currently a disconnect between small fish and sediment data; small fish are sampled in the margins while sediment is sampled in the open Bay. Don stated that instead of sampling, margins data could be created using modeling, with generated values between the ambient bay and hotspot concentrations. However, only regional trends could be identified using the data, not localized responses. Don ended by discussing the possible scopes of work including: sampling frame (sampling the entire bay or a sub-region), sampling intensity (e.g. proportional to the S&T effort), and sampling schedule.

Discussion:
Karen Taberski made clear that she has always been in favor of including the margins in the sampling frame. Naomi Feger added that characterizing nearshore ambient concentrations is important for other studies. Chris Sommers wondered if the goal of the proposal was to revamp of the S&T program. Bridgette responded that she sees the potential margins sampling proposal as more of a pilot study than a request to change the S&T program.

Bridgette DeShields asked whether Don was proposing a characterization study of the entire Bay or if he was planning on sampling in one particular region. Don responded that he was interested in general characterization study. Bridgette supported looking at one region first to determine the level of small-scale variability. Don responded that he would not be able to extrapolate the regional results to the entire Bay. Bridgette agreed, but stated that understanding the small-scale variability will inform how many samples will be needed to complete a Bay-wide characterization study. Don said that the need for margins sampling is driven by the bioaccumulation model; therefore, a complete understanding small scale variability may not be necessary as long as the undulations in concentrations are captured at an appropriate scale for biological movement and uptake.

Chris asked if the S&T GRTS sampling design includes margin sites. Don replied that the GRTS design does not include any sites shallower than one foot below the MLLW. Chris suggested incorporating margins sampling into the S&T GRTS sampling design, but he was unsure how the known hotspot areas would be built into the design. Don responded that sampling a known hotspot would be acceptable; the data could be compared to results from previous sampling efforts. Chris predicted that the sampling cost would be considerable and asked whether the sampling was a priority for the RMP. Karen noted that she is not in support of spending additional money, but she is in favor biasing the 2014 sediment sampling cruise toward the margins (excluding historical and repeat sites). Mike suggested to only analyze organic contaminants in the margins to reduce costs. Don noted that he would be in support of ending open Bay sampling for the next couple of years in exchange for increased margins sampling. However, he is aware that the open Bay sites are important for other RMP studies.

Mike Connor stated that the variability in Suisun Bay will be lower than other subembayments. Don responded that the number of samples could be increased where the shoreline is complex. Chris agreed with suggestion stating that BASMAA has increased spatial information for watersheds where the inputs are greater. Lester McKee suggested using a gradient based sampling design. Don noted that gradient studies are useful for analyzing medium-scale trends, but that proposal is to characterize the margins on a Bay-wide scale.

Meg ended the discussion by asking whether the TRC agreed that Don should create a margins sampling proposal that will go through the CFWG and then be brought back to the TRC. Chris encouraged Don to focus on answering one question well, rather than trying to please all of the stakeholders. There was general agreement to create a basic margins sampling proposal.

Action Items:
4. Don Yee will write a margins sampling proposal to present at the CFWG meeting.

7. Information: Hotspots Study [Ellen Willis-Norton]
Ellen Willis-Norton presented results from the Sediment Hotspot Followup Study as well as preliminary Sediment Quality Objective (SQO) results from 2011 and 2012 S&T sediment samples. Ellen provided a brief background on SQOs and explained their incorporation of multiple lines of evidence to assess sediment quality. She then presented the results from the 2011 Sediment Hotspot Followup Study. The Hotspot Study revisited two toxic Bay Protection hotspot sites, Mission Creek and San Leandro Creek, and used SQOs to determine if the sites were still impacted 14 years after their original designation. Ellen then mapped the SQO results from the 2011 and 2012 S&T sediment sites to provide context for the degree of contamination in the two creek channels. The map indicated the creek channels remained clearly impacted while in the open Bay the majority of the sites were Possibly or Likely Impacted.

Discussion:
Amy Chastain asked how many samples were taken at each hotspot site; Ellen answered that there were five replicates for each site. Mike wondered if the area surrounding San Leandro Creek is industrial. Jay responded that the area surrounding the coliseum is industrial. Amy Chastain added that Mission Creek was historically industrial. Additionally, Amy confirmed that Mission Creek still receives some primary treated effluent during high rainfall events. But, there are fewer than ten discharges per year and the 95 percent or more of the overflow is stormwater rather than sewage. Mike Connor noted that the benthic community appears to be the least impacted in the two creek channels, he is interested in seeing the species composition at the two locations. Karen Taberski asked if the 2011 and 2012 S&T results were mainly driven by toxicity. Ellen replied that the S&T station assessments were driven by both toxicity and benthic community condition. Mike asked what the toxicity driver was for Mission Creek based on Toxicity Identification Evaluation methods. Karen and Chris replied that mainly a mixture of organic contaminants and chlordanes.

Amy asked if there would be further characterization of the two creek channels, would they be added to the S&T program. Meg Sedlak responded that the sites would not be added to S&T. Naomi Feger stated that, the RWQCB needs to determine if there is an on-going pollutant source. Chris Sommers ended the discussion stating that repeated investigation of small waterbodies may be beyond the scope of the RMP.

8. Decision: RMP S&T Sediment Effects Work [Meg Sedlak]
Meg Sedlak informed the TRC that after Moderate Toxicity Workshop in the Fall, the cause of widespread moderate toxicity in the Bay remained unclear. Workshop participants named a number of possible causes such as rare earth metal contamination, grain size and shape, and amphipod lipid content. Meg indicated that currently the sediment element of the program includes: sediment chemistry, toxicity and benthic assessments. The sediment chemistry is needed to discern trends and for modeling. In addition, the Dredged Materials Management Office (DMMO) uses the data to evaluate ambient sediment concentrations. Based on the workshop, Brian Anderson and Bryn Phillips at UC Davis are putting together two proposals for the 2014 EEWG meeting: one study will spike lab and reference sediment with clay to determine the effects on amphipod survival, the other will examine the effect of sediment shape on amphipod survival. Given that there is high degree of uncertainty as to what is causing the

sediment toxicity in the Bay, Meg asked the TRC if the RMP should put the toxicity and benthic sampling component of the S&T program on hold until the cause of moderate toxicity is discovered.

Discussion:
Chris Sommers asked if anyone had compared individual contaminates to percent survival. Meg replied that an exhaustive study has not been completed, but over time Brian and Bryn have conducted some comparisons. Naomi noted that there is a clearer relationship between contamination and toxicity in the Southern California Bight. Chris responded that San Francisco Bay is a more dynamic ecosystem than the Bight. Chris asked about the time frame for completing the mesohaline index. Meg replied that on a summary of the year 1 results will be presented at the May 16 EEWG meeting; the complete index will be finished by the end of 2013.

Both Chris and Karen voiced their support for holding off on S&T toxicity and benthos sampling for 2014. Chris encouraged funding studies to determine the source of toxicity rather than continuing ambient sampling. Karen noted that there are higher priorities for the RMP that can affect management decisions. The TRC agreed to put S&T toxicity and benthos on hold.

9. Information: Update on Mercury Wetland Workshop [Jay Davis]
Jay Davis informed the TRC that the SC decided mercury cycling in wetlands was the only viable 2013 workshop option. The workshop will focus on how management actions in restored tidal ponds and salt marshes could reduce mercury contamination in biota. Jay mentioned that there were mixed reviews for the workshop during the SC meeting. However, the consensus was the workshop will bring closure to the RMP's focus on mercury special and pilot studies over the past few years. Josh Collins, April Robinson, Robin Grossinger, and Naomi Feger have been planning the content for the workshop. Naomi generated a list of management questions and that will be used to guide the meeting structure. The meeting's main goals are to help identify accepted protocols for collecting mercury monitoring data, at the local and regional scale, inform the RMP's role in this monitoring, and ensure agencies are coordinating, providing information on the state of the science, understanding current data needs, and discussing projects that may better address those needs,

Discussion:
Chris Sommers asked which of the RMP active participants will benefit from the workshop; Jay responded that the Army Corps and the dredging community will benefit. Luisa Valiela added that the BCDC may want to be involved and comment on the management questions that Naomi produced. She also suggested contacting the Delta agencies to see if there was interest in the workshop. Mike similarly encouraged Jay to contact the Coastal Conservancy. Naomi assured the TRC that the RMP will invite a broad audience; she has already contacted Janis Cooke.. Chris urged the RMP to make the connection between reduced mercury levels in wetlands and reducing mercury stormwater TMDL requirements and/or BACWA control requirements. Chris is unsure that BACWA or BASMAA affiliated individuals will be interested in the meeting unless the connection is made.

Chris Sommers asked about the cost of holding the workshop, Jay responded that the budget is $20,000. Mike Connor asked where it would be held and Meg replied that she is hoping to host it

at the California Endowment in Oakland because it is a free space. Amy Chastain has hosted events there and encouraged Meg to book the reservation as soon as possible. Meg added that the workshop could be hosted at the Richmond CDPH site, which is also free. Chris asked how big of an audience the RMP was targeting; Jay responded that around 100 people have attended past mercury meetings.

Action Items:
5. Jay Davis will contact the Coastal Conservancy, CDFW, and the appropriate Delta agencies regarding the upcoming Mercury workshop.

10. Information, Discussion: Update on Nutrients [David Senn]
Conceptual Model Update
Dave Senn was originally aiming to release the first draft of the conceptual model by early February, now the target release date is early April. There will be a one page synopsis, a 10 page executive summary, and a longer document for people who need more information. Dave presented the status of the sections within the document and quickly reviewed the figures that will be included in the executive summary.

Loading Study Update
The draft report will be ready by the end of March. The loading study will estimate: 1) current loads 2) how the loads vary seasonally and 3) how the loads vary over time. The estimates will be calculated for each subembayment. Dave presented a map of the Bay with current loading estimates for each region and three time-series graphs showing how loadings from POTWs have changed over time. Dave mentioned that the present-day loading estimates have been sent to POTWs to ensure that they agree with the data. Emily Novick is planning on also sending historical-loading estimates to the POTWs for their consideration.

Discussion:
Mike Connor was interested in the increase in nutrient loads from the San Francisco South East POTW. The population did not increase at the same rate as the nutrient increase; it is possible that there was a switch from DON to ammonia. Naomi Feger asked if the current-loading estimates include 2012 data; Emily replied that the last two quarters of 2012 are not included. The TRC noticed that Dave's classification of Central Bay is not representative of the RMP's classification of embayments; Central Bay extends down to the San Mateo Bridge not the Bay Bridge. Naomi stated that Dave was correct in that the Central Bay boundary is the Bay Bridge. .

Moored Sensor Update
Emily Novick reviewed the goals of the moored sensor program. The goal for the first year of the program is to develop the nutrient monitoring's program capacity for using moored sensors. Emily presented maps showing the location of already operational water quality monitoring equipment in the Bay that are maintained by USGS and DWR. The nutrients team was interested in using RMP funds to complement this existing network. Therefore, Emily and Dave have planned to purchase two YSI EXO and one nitrate sensor (because nitrate monitoring is lacking in the Bay). They will also purchase a datalogger to merge the two data streams. Emily then presented the rationale behind their purchasing choices.

Discussion:
Chris Sommers stated that he has experience with YSIs and it is important to set money aside for maintenance. He added that every couple of years the probe will need to be replaced. Emily agreed and said around $18,000 of the budget is allocated to YSI maintenance. Mike Connor asked where the sensors would be placed. Emily said they will first be set-up next to Dave Schoellhamer's equipment at Dumbarton Bridge so his group can help out with upkeep. If the study is going smoothly, Dave and Emily may consider moving the YSIs to Alviso Slough or San Mateo Bridge partway through the year. Mike wondered how often maintenance on the sensors is necessary; Emily answered that it is necessary every three weeks during the summer and after a month during the winter. Chris Sommers asked what type of batteries the nutrients team was planning on using. Emily responded that there are batteries made specifically for these types of sensors that they will purchase..

RMP oversight of Nutrient Work
Dave Senn discussed the future of nutrients work, specifically the RMP's role for future nutrient work. The funding for the monitoring program run by USGS will be decreasing in 2014 and it is unclear which agency will oversee the program. Dave added the budget for the monitoring program is sizable and could not come out of the existing RMP budget.

Discussion:
Naomi Feger thought it would make sense for the RMP to oversee the monitoring program if there was agreement to increase RMP funding for the program. She noted that the TRC can provide input on the monitoring work, but is unsure if the TRC can be responsible for complete program oversight. Dave Senn responded that an external committee could form that serves as a "nutrient RMP." The committee could take advantage of the existing RMP structure and form a parallel nutrient TRC and SC that would be responsible for the monitoring program oversight.

Amy Chastain wondered if the nutrients work is the only RMP strategy that does not go through an RMP workgroup before being brought to the TRC. Naomi responded that the CFWG could be in charge of the modeling aspects of nutrients work; but, in the short term it makes sense to create an RMP workgroup that is focused on nutrients monitoring. Chris Sommers noted that strategy teams, rather than workgroups are pollutant based. Therefore, one option is to have a cohesive nutrients strategy team that guides future nutrients work. Tom Hall added that the nutrients strategy could be re-structured to focus on reviewing RMP funded nutrients studies and products. Naomi responded that the pollutants that the RMP formed strategy teams for were created to complete TMDLs. A strategy effort outside the RMP already exists for nutrients. Chris argued that there are many agencies that are involved with nutrients work and that are providing funding; the governance of nutrients work may be beyond the RMP. He added that it is possible that overall governance isn't possible and that maybe only a handful of people, such as Dave, should be in charge of making the connections between agencies. Jay Davis mentioned that there will be a discussion of nutrient work oversight at the next SC meeting, if any TRC members have strong opinions, Jay suggests attending the meeting. Dave Senn will have written a proposal suggesting a possible model for nutrient work oversight by the next SC meeting.
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Action Items:

6. David Senn will write a proposal suggesting a possible model for nutrient work oversight to present at the next SC meeting.

11. Information: Update on Workgroups and Scorecard [Meg Sedlak]
Meg Sedlak listed upcoming workgroup meetings including the May 16 EEWG meeting, the April 5 ECWG meeting, a July SPLWG meeting, and a modeling meeting in late April. Additionally, the Sixth International Symposium on Flame Retardants will be held from April 7-9. Bridgette DeShields encouraged reconvening the dioxin strategy group to discuss future dioxin sampling. Chris Sommers suggested reconvening the PCB strategy group once the synthesis is available.

Action Items:
7. Jay Davis will reconvene the PCB strategy group once the PCB synthesis is available.
8. Meg Sedlak and Don Yee will write up the existing data collected on dioxins and then reconvene the dioxin strategy group to give an update and to determine whether there is a need for additional sediment work.

12. Action: Set Date for next meeting and Plus/Delta
The date for the next TRC meeting is June 26, 2013.