



**SAN FRANCISCO ESTUARY INSTITUTE**

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**Bay RMP Technical Review Committee Meeting**

December 8, 2016

San Francisco Estuary Institute

**Meeting Summary**

**Attendees**

<b>TRC Member</b>	<b>Affiliation</b>	<b>Representing</b>	<b>Present</b>
Nirmela Arsem	EBMUD	POTWs	No
Rod Miller	SFPUC	POTWs	<b>Yes</b>
Tom Hall	EOA, Inc.	POTWs	<b>Yes - remote access</b>
Amy Chastain	SFPUC	POTWs	No
Eric Dunlavey	City of San Jose	POTWs	No
Bridgette DeShields*	Integral Consulting	Refineries	<b>Yes</b>
Chris Sommers	BASMAA (EOA, Inc.)	Stormwater	No
Shannon Alford	Port of SF	Dredgers	<b>Yes - remote access</b>
Ian Wren	San Francisco Baykeeper	NGOs	No
VACANT	US Army Corps of Engineers	USACE	NA
Richard Looker	SFB RWQCB	Water Board	<b>Yes</b>
Luisa Valiela	US EPA	US-EPA IX	<b>Yes</b>
VACANT		Industry	NA
VACANT		Cooling Water	NA

\*Chair

**Guests and Staff**

- Paul Salop - Applied Marine Sciences (remote access)
- Phil Trowbridge - SFEI
- Jay Davis - SFEI
- Jennifer Sun - SFEI
- Ila Shimabuku - SFEI
- Lester McKee - SFEI
- Don Yee - SFEI
- Meg Sedlak - SFEI
- Cristina Grosso - SFEI
- Amy Franz - SFEI
- Michael Weaver - SFEI
- Adam Wong - SFEI

## 1. Introductions and Review Agenda

There were no changes made to the agenda.

## 2. Decision: Approve Meeting Summary from September 21, 2016 and confirm/set dates for future meetings.

A few edits were made to the September 21, 2016, TRC meeting summary before approval. Because the attendance at this meeting was so low, the group only tentatively confirmed the March 9, 2017 TRC meeting date and tentatively set the June 8, 2017, TRC meeting date. Other seated committee members will be contacted before both meetings are officially confirmed and set.

### **Decisions**

- Bridgette DeShields motioned to approve the September 21, 2016, TRC meeting summary after correcting the spelling of “mussels” and removing the sentence, “Also, the denitrification at the sediment/water interface with a relatively shallow water column, broad shoals, and longer residence times are potentially dragging down the DO concentration.” Tom Hall seconded the motion. The motion for approval was carried by all present members.

### **Action Items:**

- Finalize the September 21, 2016, TRC meeting summary and post to the public meetings folder. (Ila Shimabuku, 12/14/16)
- Confirm first quarter 2017 TRC meeting for March 9, 2017, with all absent TRC members. (Ila Shimabuku, 12/16/16)
- Confirm and schedule second quarter 2017 TRC meeting for June 8, 2017, with all absent TRC members. (Ila Shimabuku, 12/16/16)

## 3. Information: SC Meeting Summary from November 1, 2016

Phil Trowbridge briefly covered a few topics that were discussed at the November 1, 2016, MYP (Multi-Year Planning) workshop and SC meeting and presented a few slides to highlight some components of the 2017 budget and workplan.

Participants showed interested in learning more about the global passive sampling initiative (“Aquagaps”) that the RMP is putting \$8,000 toward. This initiative was initiated by a university in China, in collaboration with Derek Muir, to set up a passive sampler in SF Bay. The materials and analysis are pro-bono. The target analytes are still to be determined, however, POPs (persistent organic pollutants) have been identified as the main concern. Don Yee is the RMP’s contact for this project and will send the TRC more background and funding information about this effort.

There was discussion of the RMP's status with follow-up from the OAH (ocean acidification and hypoxia) workshop. The workshop summary is being finalized and is also being separated into a three-step OAH monitoring recommendation:

1. Modeling to understand the Bay's exposure to upwelled water.
2. Adding carbonate-chemistry monitoring to Bay cruises (possibly RMP, USGS, NOAA) to understand the spatial distribution of carbon cycle indicators and pH. Also, adding more sensors to monitor for temperature and salinity as a surrogate for measuring pH.
3. Biological monitoring: understanding what data already exist, researching what technologies could be used in the Bay, and eventually monitoring for changes in things like benthic foraminifera.

**Action Items:**

- Present information about the global passive sampling initiative and its funders at a future TRC meeting. (Don Yee, 3/1/17)

#### 4. Information: Options for 2017 South Bay Margins Study Design

Don Yee gave a presentation which included a quick review of the 2015 Central Bay margins effort and results, re-confirmed the ultimate goals of margins studies, and presented different design options for the 2017 South Bay margins sampling effort.

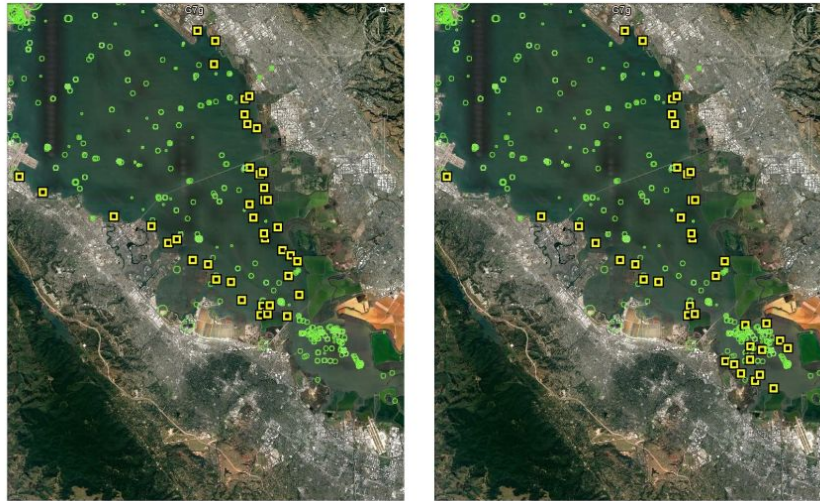
Different data transformations were discussed, specifically the lognormal distribution vs transformations using different values on the ladder of powers, and whether their value comes from their physical meaning or their ability to transform the data into a form that are subject to parametric tests. Jay suggested consulting a statistician to compare different data transformations and to look at the significance of how fines data are censored.

Participants expressed interest in finding where biological endpoints of concern are receiving their PCBs. Are their PCBs coming from the margins or the open Bay? There is information that suggests that margins are more biologically impactful than the open Bay. It was suggested to look into using stable isotopes of N, C, and S (as was done for a study of marshes around the Hamilton restoration site).

Richard Looker recommended looking into collecting cores at some margins sites to characterize temporal variation of Bay watersheds (e.g., are more polluted sediments being covered by cleaner inputs from watersheds).

Most of the discussion around the 2017 South Bay margins study design concerned whether to have all 40 sampling sites in only SB (South Bay) or both SB and LSB (Lower South Bay). The following slide was used to show the randomized, area-proportional allocation of proposed sites for both options:

## Proposed Sites SB vs SB/LSB (40 total)



The green dots represented historical measurements of PCBs in the Bay and the yellow squares were the proposed 2017 margins summer sampling site locations.

In SB/LSB map, there are 27 sites in SB and 13 in LSB because the area of SB margins are about twice the size of the area of LSB margins. The TRC members were supportive of sampling both SB and LSB in 2017, but they wanted to have further discussion and decision making at the March TRC meeting. The following maps and information should be prepared for the March TRC meeting:

- Add graphics into site maps that clearly show the margins frame.
- Consider an option to stratify the SB/LSB area to allocate more points into the west shoreline areas because the variability in PCB concentrations along the east shoreline is expected to be lower.
- Make a blown-up map(s) of just Lower South Bay that shows the margins frame, the open Bay frame, and current bathymetry.
- Present a few different random draws of sampling points for each proposed design.

When looking at the minimal change in the MDD (minimum detectable difference) from 40 to 30 sampling sites in South Bay using a t-test comparison of different sampling years, Don was confident that 40 sites are enough for both SB and LSB sampling in 2017. If, after the 2017 results are analyzed, there seems to be a need for more data in SB or LSB, the RMP could revisit these regions with the addition of sampling sites.

Before ending the discussion, the group revisited the objectives of the study and agreed that determining the statistical and spatial distributions of PCB concentrations in the margin areas was still the prime objective. This information would support the secondary objectives of measuring trends in ambient concentrations and detecting changes in margin units due to management actions. Finding hotspots was

acknowledged to be a “low-yield” outcome with a probabilistic monitoring design, but finding warm spots is also valuable and an anticipated beneficial outcome of the work.

**Decisions**

- The 2017 margins monitoring effort should include sites in both South Bay and Lower South Bay. (consensus)

**Action Items:**

- Consider changing the way margins data are transformed and the margins fines data are censored and possibly consult a statistician to further explore this issue. (Don Yee, 3/1/17)
- Send Don the resources on parametric tests and different methods for data transformations. (Richard Looker, 12/16/16)
- Look into past studies that used isotopes to understand whether PCBs are entering food webs from the margins or open Bay. (Jay Davis, 3/1/17)
- Prepare a detailed proposal with options for sampling designs for the South Bay Margins Study for the March TRC meeting. (Don Yee, 3/1/17)

## 5. Information: Update on San Leandro Bay (SLB) PCB Studies

Jay Davis presented the latest update SLB PCB work. He covered the PCB strategy, PMU (priority margin unit) identification (4 have been selected for now), and modeling. He also presented the three phases of the SLB work, two of which have already been funded. Phase 3 work has not been completed but could be with additional SEP or RMP funding.

**Action Items:**

- Contact the labs to find which fish, water, and sediment sites in SLB were actually sampled and sampled from the boat and include this information in the data report. (Jay Davis, 12/31/16)

## Lunch

## 6. Information: Informatics and Data Services Accomplishments

Amy Franz began the data services presentations by showing the workflow of RMP datasets. She also covered how the data services team handles data, communicates internally at SFEI and externally, looks for and implements data process improvements, and executes troubleshooting.

Jay Davis asked the committee if they would prefer to review the margins data before the data services team uploads the data to CD3 and the committee preferred that the data be uploaded after the SFEI QA review was complete.

Rod Miller suggested that the data services team ask our contract laboratories about any problems they are having with the CEDEN data checker tool.

Michael Weaver presented the archived sample tool and showed how to use it to search for samples and how to submit requests for samples. The members of the TRC showed interest in this tool and were informed that the tool has not yet been distributed. The RMP is currently planning only to use its network of contacts and universities to spread the tool. Committee members proposed that the RMP spend some time thinking up a targeted list of researchers who would be provided with this information. Participants also recommended doing some research to find whether other large monitoring programs have similar archiving protocols.

Cristina presented the CD3 Contaminant Data Display and Download tool ([cd3.sfei.org](http://cd3.sfei.org)) by giving a brief background, tutorial, and update on recent changes. The members of the TRC also showed interest and appreciation for this tool and recommended, possibly, doing a webinar to spread awareness and attract users. Participants also recommended that the CD3 tool generate a specific URL when a user selects a map with desired parameters, so it could be easily shared with others.

**Action Items:**

- Brainstorm a list of potential studies that could be done with the RMP archives and then contact university researchers and others who might be interested in doing these studies with archived samples. (Phil Trowbridge, 3/1/17)
- Contact SCCWRP, NIST, and the California Academy of Sciences to get information on how they use archive samples for scientific research. (Phil Trowbridge, 3/1/17)
- Collect data on monthly visitors of the CD3 tool and send out to the TRC. (Cristina Grosso, 12/22/16)  
There are 162 sessions per month for the period of January 1, 2016 - December 31, 2016.

## 7. Information: Plans for the 2017 Pulse Report, Annual Meeting, and Upcoming Reports & Communications Products

Jay Davis distributed and presented the updated outline for the 2017 Pulse of the Bay. Several ideas were proposed by TRC members:

- In addition to pollutant-specific items listed under “The value of long term monitoring,” also include topics like institutional value, the people of the RMP, and the trust and reputation of the RMP. Members of the RMP governance committees, possibly Richard and Tom, could lead these pieces.
- The 25 years of RMP should not only be about what the RMP has learned, but also its successes. The RMP origin story could include the evolution of the RMP and topics such as why some legacy contaminants no longer require monitoring. Highlight the result of this evolution by showing how the budget has shifted away from Status and Trends and toward Special Studies. Mention how the RMP has moved from “past-directed” work that was shaped by permitting requirements and has shifted to “future-directed” work where the RMP is now predicting future data needs. The type of monitoring done by the RMP has also evolved: from just water and sediment to water, sediment, fish, birds, and more.

- Some participants thought that Kudela's work should not be included under nutrients and, rather, under a HABs (harmful algal blooms) sidebar.
- Use a global map to label and identify other large estuaries and monitoring programs. On the opposite page, do a short summary of these other estuaries and programs to put the RMP in a global context. CECs (contaminants of emerging concern) could be used to compare the RMP to other similar programs.
- Participants warned that the wetland monitoring program may be in too young of a planning stage to include in the Pulse.
- Include a sidebar on ocean acidification.
- Broaden the topics for the margins section to include studies like the small fish study.
- Change the bullet under the Bay margins section that says “Sea Level Rise” to say “Sediment Management (Sea Level Rise).”
- Change the bullet under the CECs section from “How CECs relatively recently became a priority issue” to “Which new CECs are the highest priority now?”

Jay then shifted gears and introduced the PCB Pulse map kriging issue. At the September TRC meeting, committee members were concerned that the red areas mislead the reader into believing there are hotspots or areas of toxicity where the actual concentrations may not warrant concern. Participants agreed that Jay should experiment with (a) the transparency of the kriging layer of the map and (b) try different color palettes to display the range of PCB concentrations.

Jay moved to discussing 2017 RMP Annual Meeting logistics. Committee members agreed that a separate Annual Meeting from the State of the Estuary was a benefit and agreed that the date and agenda of the Annual Meeting should be kept separate from State of the Estuary’s date and agenda. The State of the Estuary’s date has not yet been set but has been proposed for September 6, or September 7, 2017.

Jay concluded with mention of year-end reports, Estuary News, and the eUpdate. In March, the Estuary News topic will be stormwater (Emeryville Crescent and maybe SLB). In June, the topic will be fish (S&T sport fish and sturgeon studies).

**Action Items:**

- Consider using Cristina’s statistics on RMP’s lifetime of data collection in the 2017 Pulse. (Jay Davis, 1/17/17)
- Update the 2017 Pulse outline with the comments suggested by the TRC and then present it to the SC. (Jay Davis, 1/17/17)
- Experiment with kriging layer transparency and differing color maps on the Pulse PCB map. (Jay Davis, 3/1/17)
- Pick dates for the 2017 Annual Meeting at the SC meeting on 1/17/17. (Phil Trowbridge, 1/17/17)

## 8. Information: 2015 Copper and Cyanide Water Concentrations Relative to Site-Specific Objectives and Aquatic Toxicity Results

Ila Shimabuku presented the updated rolling average for dissolved copper and total cyanide concentrations in open-Bay water. The copper and cyanide averages were all under the relevant trigger levels and were approved by the TRC to be posted online.

Ila also presented the toxicity results from the 2015 Water Cruise. The TRC came to the consensus that, for the 2017 water cruise, labs should proceed with a TIE (toxicity identification evaluation) if and only if the initial toxicity results report large amounts of toxicity (~>50% reduction). The toxicity observed in 2015 was ~25% reduction in endpoint.

The other recommendation was to look at 2015 water data for the sites that had moderate toxicity.

**Action Items:**

- Post the 2015 Water Cruise copper and cyanide rolling average on the SFEI website and upload slides from TRC presentation. Add the actual SSOs to the tables. (Ila Shimabuku, 12/19/2016)
- Review 2015 water data for the sites with moderate toxicity. (Ila Shimabuku, 3/1/17)

## 9. Information: Status of Deliverables and Action Items

Phil Trowbridge covered the status of deliverables and action items. There were no comments.

## 10. Discussion: Plan agenda items for future meetings

Jay Davis began a discussion around ideas for future meeting agenda items. The committee agreed that margins and selenium discussions are the two most important topics. The committee also mentioned the need of a decision at the March TRC meeting on whether or not to continue North Bay clam monitoring for selenium past May of 2017.

## 11. Discussion: Plus/Delta

The present TRC members discussed the idea of holding next year's TRC December meeting either earlier in December or in late November in order to increase attendance.

**Action Items:**

- Add discussion of the timing of to the March TRC agenda. Identify why participants were unable to attend in order to reach a solution for future 4th quarter TRC meetings. (Phil Trowbridge, 2/27/2017)

## 12. Adjourn