RMP Steering Committee

July 25, 2018
9:30 AM – 4:00 PM

REMOTE ACCESS
Audio by Phone: (415) 594-5500, Access Code 943-326-397#
Slides: https://join.me/sfei-conf-cw1

AGENDA

1.	**Introductions and Review Agenda**	9:30 Tom Mumley
2.	**Decision: Approve Meeting Summary from April 25, 2018 and confirm/set dates for future meetings.** Scheduled meetings: SC: 7/25/18 SC: 10/24/18 (Multi-Year Planning) TRC: 9/19/18 TRC: 12/13/18 Proposed meetings (4th Wednesdays): SC: 1/23/19 SC: 4/24/19 SC: 7/24/19 SC: 10/23/19 Materials: SC Meeting Summary, see pages 1-6 Desired outcome: ● Approve meeting summary, confirm existing meeting dates, and set dates for future meetings.	9:35 Tom Mumley
3.	**Information: TRC Meeting Summary** Topics discussed at the most recent TRC meeting included: ● Special Studies for 2019 ● List of Eligible RMP Projects for SEPs ● Recommendation for using Copper Data from 2017 Water Cruise ● Changes to the Status and Trends Design Materials: TRC Meeting Summary, see pages 7-14 Desired Outcome: Informed committee	9:45 Phil Trowbridge

4.	**Information: RMP Financial Update for 2018 Quarter 2** The RMP Financial Update report summarizes the balance of budgeted and reserved RMP funds as well as its cash position. Materials: Financial Memo, see pages 15-35 Desired outcome: Informed committee	10:00 Phil Trowbridge
5.	**Discussion: RMP Fees for 2020** Per the RMP planning calendar, in July, the SC reviews the fees for the year after next (2020). In November 2017, the Steering Committee set the target fees for 2019, 2020, and 2021 to be $3,693k, $3,804k, and $3,918k. The fees will be split between the different RMP participant groups by the following percentages: Municipal POTWs (45.8%); Industrial Dischargers (11.5%); Stormwater Agencies ($24.5%); and Dredgers (18.2%). No action is needed unless the Steering Committee would like to change this decision. Materials: Memo on 2020-2021 Fees, see page 36. Desired Outcome: Confirmation of 2020 RMP fees.	10:30 Philip Trowbridge
	Short Break	10:45
6.	**Decision: Approve Special Studies for 2019 and List of Eligible RMP Studies for SEP Funding** Between January and June 2018, workgroups met to develop proposals for special studies in 2019. On 6/14/18, the TRC reviewed all the proposals put forward by the workgroups and recommended a suite of studies for 2019. The TRC also prioritized unfunded studies in the event that additional monies become available. The Steering Committee will review the recommended studies, make any adjustments they deem warranted, and then approve the special studies for 2019. Funding from core RMP fees, AMR fees, unallocated SEP funds, and Undesignated Funds will be budgeted during this item. In addition, the RMP maintains a list of projects that have been vetted by Workgroups and/or the TRC but were not funded. This list of projects is a resource to the Water Board as they negotiate Supplemental Environmental Projects. The TRC recommends revising the list by adding proposed projects for 2019 that were not funded and by removing any older projects that are no longer priorities. Materials: Memo on 2019 Special Studies and SEP list changes, see pages 37-64 Desired outcomes: ● Approve a suite of special studies for 2019 using core RMP fees, supplemental AMR fees, and unallocated SEP funds. ● Approve a list of eligible RMP projects for SEP funding	11:00 Phil Trowbridge
	Lunch (Provided)	12:30

7.	**Science Update: North Bay Selenium Studies** In 2018 the RMP has reached a major milestone in selenium special studies, with the completion of reports on three year studies of 1) concentrations in muscle plugs (the Muscle Plug Study) and 2) concentrations in muscle and other tissues in the Sturgeon Derby Study. A report has also been completed that presents the rationale and recommendations for monitoring of water, clams, and sturgeon in the North Bay with the goal of providing early warning of change in response to changes in discharge and hydrology. A summary of these studies will be provided. Materials: None Desired Outcome: Informed committee	1:00 Jay Davis
8.	**Decision: Approve Agenda for 2018 Annual Meeting, and Discuss Upcoming Reports & Communications Products** The draft final agenda for the 2018 Annual Meeting will be presented for SC approval. Brief updates will be given on the upcoming RMP Update report and other RMP communications products. Materials: Draft Agenda for Annual Meeting, see pages 65-66 Desired Outcomes: Informed committee	1:45 Jay Davis
	Short Break	2:20
9.	**Discussion: Develop Agenda for Multi-Year Planning Meeting** The process to develop special studies for 2019 was time consuming for staff and stakeholders. Staff and the workgroups developed twice as many proposals than the funding available. There are now 7 workgroups. Each workgroup meeting requires a lot of effort to prepare and implement. The net result was: a $35k cost overrun for workgroup meetings, too many meetings for stakeholders to attend, and many good proposals unfunded. The Multi-Year Planning meeting is an opportunity for the Steering Committee to provide high level direction on priorities and workgroups to improve the process for next year. For this agenda item, the SC will discuss how to structure the agenda for the MYP meeting to achieve these objectives, and make preliminary decisions about workgroups and planning budgets for 2020. These preliminary decisions can be reconsidered during the MYP meeting in October. Materials: Slides, see pages 67-73 Desired outcomes: ● Agenda items for the MYP meeting with desired outcomes ● Preliminary decisions about whether to change any workgroups ● Preliminary allocations for each workgroup for 2020 special studies	2:30 Philip Trowbridge

10.	**Discussion: Status of RMP Deliverables and Action Items** Materials: Action Items & Deliverables Stoplight Reports, see pages 74-83 Desired outcome: Informed committee about the status of RMP deliverables	3:30 Phil Trowbridge
11.	**Discussion: Plan agenda items for future meetings** Desired Outcome: Identify future agenda items	3:40 Jay Davis
12.	**Discussion: Plus/Delta**	3:50
13.	**Adjourn**	4:00

Recently Completed RMP Reports/Products

Sedlak, M.; Sutton, R.; Wong, A.; Lin, D. 2018. Per and Polyfluoroalkyl Substances (PFASs) in San Francisco Bay: Synthesis and Strategy. SFEI Contribution No. 867. San Francisco Estuary Institute : Richmond, CA. http://www.sfei.org/documents/and-polyfluoroalkyl-substances-pfass-san-francisco-bay-synthesis-and-strategy

Yee, D. 2017. 2016 RMP Bird Egg Samples Quality Assurance Report. San Francisco Estuary Institute: Richmond, CA. http://www.sfei.org/documents/2016-rmp-bird-egg-samples-quality-assurance-report

Yee, D. 2017. 2016 RMP Bivalve Samples Quality Assurance Report. San Francisco Estuary Institute: Richmond, CA. http://www.sfei.org/documents/2016-rmp-bivalve-samples-quality-assurance-report

The 2017 RMP Pollutants of Concern stormwater data is available on CD3. Go to cd3.sfei.org. Click on “Direct Download Tool” and select the project “STLS Monitoring RMP WY2017”

Draft RMP Reports Out for Review

The RMP completed several reports for the spring workgroup meetings. Many of these reports are still draft because we are waiting for comments from science advisors or the TRC. The list of draft reports is shown in the table below.

Gray shading indicates the group from which comments are needed. Check mark indicates whether comments have been received.

Report	Comments/Approval?					
	TRC	EEWG	ECWG	PCB	SPLWG	SeWG
Alternative Flame Retardants in San Francisco Bay: Synthesis and Strategy	✓		✓			
Estrogen Receptor In Vitro Assay Linkage Studies (Year 3)	✓	✓				
Dioxin Synthesis	✓					
PCB San Leandro Bay Conceptual Model Report	✓					
PCB San Leandro Bay Fish Gut Analysis	✓					
Boundaries and Names for Segments of San Francisco Bay						
Selenium Monitoring Design	✓					
Selenium 2015-2017 Sturgeon Muscle Plug Report	✓					
Selenium 2015-2017 Sturgeon Derby Report	✓					
Pollutants of Concern Reconnaissance Monitoring Water Years 2015, 2016, and 2017 Draft Progress Report	✓				✓	
RMP Small Tributaries Loading Strategy: Trends Strategy 2018	✓				✓	

Related Reports of Interest (not RMP)

Pilot Monitoring of Constituents of Emerging Concern (CECs) in the Russian River Watershed (Region 1). Prepared by the Southern California Coastal Water Resources Project Authority, San Francisco Estuary Institute, and North Coast Regional Water Quality Control Board. March 2018.

Full Report:
https://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reglrpts/cecspilotstudyinreg1.pdf

Lessons Learned Summary: https://www.sfei.org/documents/pilot-study-contaminants-emerging-concern-cecs-russian-river-watershed-lessons-learned

 Draft for SC Approval

Bay RMP Steering Committee Meeting
April 25, 2018
San Francisco Estuary Institute

Meeting Summary

Attendees:

SC Member	Affiliation	Representing	Present
Eric Dunlavey	City of San Jose	POTW-Large	**Yes**
Leah Walker	City of Petaluma	POTW-Small	**Yes**
Karin North**	City of Palo Alto	POTW-Medium	**Yes**
Chris Sommers	BASMAA / EOA, Inc.	Stormwater	**Yes**
Peter Carroll	Tesoro Golden Eagle Refinery	Refineries	No
John Coleman	Bay Planning Coalition	Dredgers	**Yes**
Craig Conner	US Army Corps of Engineers	USACE	**Yes**
Tom Mumley*	SFB Regional Water Quality Control Board	Water Board	**Yes**

* Chair, ** Vice Chair

Guests and Staff

- Robert Wilson - City of Petaluma
- Luisa Valiela - US EPA
- Naomi Feger - SFBRWQCB
- Heidi Nutters - SFEP
- Phil Trowbridge - SFEI
- Jay Davis - SFEI
- Ila Shimabuku - SFEI
- April Robinson - SFEI

1. Introductions and Review Agenda

Tom Mumley commenced the meeting by allowing for introductions and provided a brief review of the agenda. The Committee welcomed Eric Dunlavey as a new Steering Committee member.

2. Decision: Approve Meeting Summary from January 24, 2018, and Confirm/Set Dates for Future Meetings.

Tom Mumley reported on the success of both the Exposure and Effects Workgroup (EEWG) and Emerging Contaminants Workgroup (ECWG) meetings held on April 11, 12, & 13. He noted the necessity of holding the ECWG meeting over two days and that explained that the RMP may have to hold the ECWG at a different venue if the attendance continues to grow. There were no comments on the January SC meeting summary before approval. John Coleman will not be able to attend the July Steering Committee meeting. Betty Kwan will be his alternate.

Decision

- Leah Walker motioned to approve the January 24 Steering Committee meeting summary. Karin North seconded the motion. The motion for approval was carried by all present members.

Action Item

- Finalize the January SC meeting summary. (Ila Shimabuku, 5/1/18)
- Send calendar invites for SC meeting dates in 2019. (Ila Shimabuku, 5/1/18)

3. Information: TRC Meeting Summary

Phil Trowbridge summarized the March TRC meeting and highlighted a discussion that took place around issues caused by a method change for copper analysis which revealed a discrepancy in results between methods. The TRC provided Don Yee with some suggestions to determine the validity of the results through examination of past data and QA/QC results. Don will deliver findings to the TRC in June and will report back to the SC in July. Phil also reported on the data analysis challenge and received consensus from the SC to move forward.

4. Information: RMP Financial Update for 2018 Quarter 1

Phil Trowbridge presented the 2018 Quarter 1 financial update. He highlighted that the 2014 RMP budget had been closed, $197,100 can be unencumbered, and the RMP was currently generally on track to finish 2018 within budget. He notified the Steering Committee that he anticipated the 2018 workgroup task to go over budget. He attributed this to the extensive planning and organizing needed to conduct workgroup meetings, in addition to proposal writing, and that the workgroup meetings have been growing in size and number over the years. He planned to return to the Steering Committee in July to request more funds for this task, if necessary. The group discussed whether workgroup budget lines should be increased in future years. They also brainstormed whether there are strategies that, if implemented, could reduce workgroup planning expenses, e.g., an intermediary study prioritization step that would allow for vetting of study ideas and providing feedback before full proposals are written. Further discussion will take place at the 2018 Multi-Year Planning (MYP) workshop.

A discussion took place around how to spend an available $82,000 of Supplemental Environmental Project (SEP) funds. The SC agreed to empower the TRC to recommend a project - either a new study proposed for 2019 or one off of the existing SEP project list - at the June TRC meeting.

Decisions:

- Leah Walker motioned to unencumber $197,100 from completed tasks from 2014, 2015, 2016, and 2017 budgets and add the funds to the RMP reserve. Karin North seconded the motion. The motion for approval was carried by all present members.
- John Coleman motioned to authorize the use of up to $80,000 of RMP funds to purchase acoustic release equipment for Status & Trends bivalve monitoring. Craig Conner seconded the motion. The motion for approval was carried by all present members.

Action Items:

- Prepare discussion materials (the cost associated with each workgroup, the cost to prepare proposals vs convene the WG, and recent outcomes from each WG) to inform a long-term planning discussion on the future of RMP workgroups at the 2018 MYP workshop. (Phil Trowbridge, 10/1/18)
- Add agenda item to June 14 TRC meeting: ask the TRC to recommend a study that could be funded immediately using $82,000 of available SEP funds (either a new study that can start immediately or a study from the list of possible SEPs). (Phil Trowbridge, 6/1/2018)

5. Discussion: Guidance to Workgroups and TRC for 2019 Special Studies and Strategic Planning for 2020-2021 Special Studies Budgets

Phil Trowbridge began this discussion by highlighting that in future years, according to the Multi-Year Plan, he expects a much larger gap between the planning budgets and actual available funds for RMP special studies. He asked the Steering Committee to provide additional guidance at the 2018 MYP Workshop regarding this issue. One SC member suggested holding a longer MYP Workshop to cover discussion topics in addition to the "business-as-usual" items such as a review of the governance structure, the sustainability of the RMP budget, and long-term planning for workgroups.

Action Item:

- Prepare an agenda for the October MYP Workshop that the SC can review in July. (Phil Trowbridge, 7/15/18).

6. Information: Update on Planning for a Wetlands RMP and Restoration Authority

Naomi Feger provided a few slides to summarize the reasoning behind and status of a Wetlands Regional Monitoring Program (WRMP). The development team, funded by the Wetland Program Development Grant ($200,000), is currently six months into a two-year task to develop a written plan for how to conduct regional monitoring of wetlands. The WRMP Science Advisory Team is targeting four key monitoring topics: physical processes, tidal wetland vegetation, wildlife response, and vector control. "Getting the science right" is the first priority. The group acknowledged a potential nexus between the Bay RMP and the WRMP because of interest in margin areas and because wetland restoration has a big impact on water quality. However, there are significant issues around governance that would need to be resolved before a formal connection between the two programs could be made. Naomi Feger and Phil Trowbridge explained that conversations regarding the Bay RMP's involvement in a WRMP have been ongoing for quite some time and will continue as plans for the WRMP solidify.

Luisa Valiela provided an update that the San Francisco Bay Restoration Authority (SFBRA) governing board approved nine of twenty-two studies for $23.5M of Measure AA funds at their April meeting. Information regarding the selected studies can be found here: http://sfbayrestore.org/sf-bay-restoration- authority-meetings.php. She announced that there is an effort between management agencies regarding how to streamline the permit-approval process. She also explained that the governing board is having discussions about what kind of studies can be proposed to receive Measure AA funds.

7. Information: North Bay Biosentinel Study (a non-RMP study)

Jay Davis introduced April Robinson and her work with monitoring methylmercury in North Bay wetland biosentinels by providing a brief history of the RMP mercury strategy and the RMP's possible future in monitoring wetlands. The North Bay Biosentinel Study involved monitoring at eleven different restoration project sites in San Pablo Bay. April summarized the three management questions on which this study focused: What is the current potential for impairment of beneficial uses due to methylmercury? How will the impairment change over time? And how does the change in impairment at this location compare to other similar project and non-project wetlands in the region? Though a more rigorous study could more fully address these management questions, she was confident in the conclusion that methylmercury production in restored sites was not elevated relative to reference marshes.

The Committee discussed the importance of multivariate analysis and understanding codependent variables to understand mercury exposure. Participants expressed interest in monitoring that could show the net benefit of wetland restoration despite any mercury released as a result of the restoration.

8. Information/Decision: Update on RMP Communications and Approve Agenda for Annual Meeting

Jay Davis quickly summarized the status of RMP communications, mentioned that a RMP Update outline will be sent for review in June, and then solicited input on developing a draft outline for the 2018 RMP Annual Meeting. Jay provided a handout with a menu of potential session and talk topics. The Committee considered project deadlines and target audiences, among other factors, and decided on the following draft outline:

Session 1: "Impairment-Related Contaminants"

- Selenium: Robin Stewart to present selenium in clams, could be joint presentation with Jay covering selenium in sturgeon and/or water
- Dioxin synthesis (Don Yee)
- PCBs (South Bay margins, San Leandro Bay fish data, advanced data analysis, small tributaries/stormwater)
- Could include pesticides or mercury

Session 2: Sediment/Margins/Misc

- Golden Gate sediment flux
- South Bay Margins sediment (if not covered in Session 1)

- Results of Post-Fire monitoring (RB2, RB1, NTA, USGS sediment in Napa)

Session 3: Nutrients

- Harmful algal blooms
- Nutrient modeling
- Dissolved oxygen in Lower South Bay

Session 4: CECs

- Pharmaceuticals in wastewater
- Bisphenols in Bay water
- Flame retardants
- CUPs and fragrances in margin sediments

One participant suggested having Water Board officials moderate sessions and to kick off each session with a specific management question and having each session explain how RMP work addressed that management question.

Action Item:

- Email a draft 2018 RMP Annual Meeting agenda (with talk titles, speaker names, and moderators) for SC review. (Jay Davis, 5/14/18)

9. Discussion: Status of RMP Deliverables and Action Items

Phil Trowbridge reported on delayed action items and deliverables. Committee participants had a few clarifying questions. One participant commented on the EPA's current initiative to develop statewide standards for selenium. They highlighted a resulting opportunity for the RMP to study selenium in the South Bay.

10. Discussion: Plan agenda items for future meetings

At the upcoming Steering Committee meeting scheduled for July 25, the SC will approve RMP special studies for funding, discuss the report back on Water Cruise copper data, finalize the 2018 RMP Annual Meeting Agenda, and decide on the structure of the 2018 MYP workshop.

11. Discussion: Plus/Delta

There were no plus/deltas.

12. Adjourn

DRAFT for TRC Review

Bay RMP Technical Review Committee Meeting

June 14, 2018

San Francisco Estuary Institute

Meeting Summary

Attendees

TRC Member	Affiliation	Representing	Present
Nirmela Arsem	EBMUD	POTWs	**Yes**
Mary Lou Esparza	CCCSD	POTWs	**Yes**
Tom Hall	EOA, Inc.	POTWs	**Remote**
Heather Peterson	SFPUC	POTWs	**Yes**
Simret Yigzaw & Ryan Mayfield	City of San Jose	POTWs	**Yes**
Bridgett DeShields*	Integral Consulting	Refineries	**Yes**
Lisa Sabin & Reid Bogert	BASMAA	Stormwater	**Yes**
Shannon Alford	Port of SF	Dredgers	**No**
Ian Wren	San Francisco Baykeeper	NGOs	**Yes**
Richard Looker	SFB RWQCB	Water Board	**Yes**
Luisa Valiela	US EPA	US-EPA IX	**Yes**
Sheila Swett	USACE	USACE	**Yes**
Naomi Feger	SFB RWQCB	Water Board	**Yes**

*Chair

Guests and Staff

- Jay Davis - SFEI
- Phil Trowbridge - SFEI
- Ila Shimabuku - SFEI
- Don Yee - SFEI
- Rebecca Sutton - SFEI
- Diana Lin - SFEI
- Jing Wu - SFEI
- Scott Dusterhoff - SFEI

1. Introductions and Review Agenda

Phil Trowbridge welcomed members of the committee, quickly presented the agenda for the day, and allowed for introductions.

2. Decision: Approve Meeting Summary from March 14, 2018 and confirm/set dates for future meetings.

Richard Looker suggested adding the recently finalized date for the September 19 TRC meeting to the March TRC summary. No further changes were made to the March 14 meeting summary before approval. There were no conflicts with the September 19 TRC or the December 13 meeting dates. Phil acknowledged difficulties that had arisen from sending calendar invites between differing email platforms and asked TRC members to reference the agenda for official meeting times.

Decision:

- Heather Peterson motioned to approve the March 14, 2018, TRC meeting summary. Mary Lou Esparza seconded the motion. The motion for approval was carried by all present members.

Action Items:

- Address Richard's comment and finalize the March 14, 2018, TRC meeting summary and post to the website and public-meetings folder. (Ila Shimabuku, 7/2/18)
- Confirm the December 13 meeting date with absent TRC members and schedule meeting once confirmed. (Ila Shimabuku, 7/9/18)

3. Information: SC Meeting Summary from April 25, 2018

Phil Trowbridge briefly summarized the April SC meeting and highlighted discussions that took place regarding the Restoration Authority and the RMP Annual Meeting agenda.

4. Discussion: Presentation of Special Studies Proposals Recommended by Workgroups

Phil Trowbridge noted the extensive effort put into RMP workgroups this year both by RMP staff and external attendees. He noted the new org chart for the RMP due to the recent addition of the Microplastic Workgroup and the Sediment Workgroup.

He set the stage by stating that charge of the June TRC meeting was to consider special-study prioritizations put forth by each workgroup and to allocate RMP funding for special studies. He highlighted that the planning budget is about double the actual available funds and that more studies would have to be scaled back, spread across years, and cut than ever before.

5. Decision: Recommendation for Special Studies for 2018

Bridgette DeShields stated that the goal for this item was to complete the “Core RMP Funds” and “AMR Funds” columns in the 2019 special studies proposal table. See the completed table below, at the end of Item 5.

Discussion centered on the following points:

- The value of the Sources Pathways and Loading Workgroup’s (SPLWG) Pollutants of Concern (POC) monitoring was questioned. Water Board representatives and members of the Small Tributaries Loading Strategy team spoke to the ongoing value of POC data, how POC monitoring uses leveraged funds, and management actions that have been stalled as a result of existing data gaps that POC monitoring help to fill.
- The TRC discussed the importance of the STLS regional model to support the trends strategy, its ability to address key PCB management questions, and its nexus with other Workgroups (i.e., emerging contaminants & sediment) and possible future intersects with models in development by the Nutrient Management Strategy (NMS). The TRC agreed that the model was of high value and that current proposed timeline should be extended and be more flexible to allow for appropriate budget requests in future years.
- Scott Dusterhoff summarized the priorities put forth by the Sediment WG as well as the urgency of sediment special studies. The TRC discussed whether the workshop on screening and testing guidelines for sediment beneficial reuse could be delayed to future years but ultimately decided that it was important to get started on this work.

- Rebecca Sutton discussed the motivations behind the CECs in stormwater study. The TRC recommended stretching the timeline from two to three years, dividing the budget evenly across all three years, and focusing on sampling design and pilot monitoring in Year 1.
- The ECWG ethoxylated surfactants study was identified as a priority for dischargers and for the Department for Toxic Substances Control due to its nexus with wastewater. The TRC discussed options for scaling and phasing this study. Rebecca Sutton proposed that the study could be scaled down from a budget of $123,000 to $70,000 which would eliminate monitoring in margins sediment and data upload to CEDEN, and only allow for Water Cruise and Wastewater monitoring. However, no Core funds and only $30,000 AMR funds remained to fund this study at the conclusion of the agenda item.
- For the Microplastics Workgroup, the TRC decided only to fund strategy support and collecting and archiving sport fish samples for future analysis of microplastics.
- When the value of PCB work was questioned, TRC participants noted the historical value of PCB data and its relevance to evaluating the effectiveness of stormwater management actions.
- For the nutrients proposals about ship-based monitoring and moored sensors, some members asked why these perennial projects are still considered special studies. If they will continue indefinitely, these tasks should be part of the S&T budget. If they are special studies, when will then end or be scaled back?

Due to the lengthy discussion in Item 5, Joel Blum's late-arriving proposal for a follow-up study on mercury isotope data was not discussed. None of the stakeholders stepped forward to support the proposal.

The TRC decided to allocate the $82,000 of available Supplemental Environmental Project (SEP) funds to PCB special studies, then made decisions about how the AMR funds should be spread across ECWG & Microplastics Workgroups studies, and finally, divided RMP core funds across the remaining studies. In general, there was enough funding for only half of the proposed special studies. All of the funding for the EEWG was cut. The TRC agreed that the requested budgets had exceeded practical amounts and that the SC should discuss ways to prevent the RMP from spending time developing excess proposals and should re-evaluate the need for each workgroup. The TRC also recommended that all the WG strategy support tasks be lumped together with subtasks to indicate the amount for each workgroup. That way, the TRC can more easily focus on prioritizing actual special studies against the remaining budget.

The following table summarizes recommended TRC budget allocations for each RMP Workgroup.

Workgroup	Planning Budget	Requested by WG	TRC Recommendations			Total Allocated	% of Requested Budget Fulfilled
			Core RMP Funds	AMR Funds	SEP MMP Funds		
ECWG	$555,000	$448,300	-	$225,000	-	$225,000	50%
SPLWG	$555,000	$375,000	$275,000	-	-	$275,000	73%
EEWG	$124,000	$150,200	-	-	-	$0	0%
Nutrients	$500,000	$540,852	$250,000	-	-	$250,000	46%
Microplastic	$120,000	$187,300	$15,000	$15,000	-	$30,000	16%
Sediment	$325,000	$259,600	$184,600	-	-	$184,600	71%
PCB	$190,000	$110,000	$28,000	-	$82,000	$110,000	100%
Selenium	$246,000	$171,000	$107,000	-	-	$107,000	63%

The attached table summarizes the TRC's recommendations for funding for 2019 special studies to be considered for approval by the Steering Committee on July 25. Within workgroups, proposals are listed in order of highest to lowest priority as identified by individual workgroups. Studies that were identified by the TRC as the next highest priority should more funding become available have comments noting this in red text.

Action Items

- Discuss TRC recommendations to improve the process for special studies funding with the SC in July. (Phil Trowbridge, 7/24/18)

LUNCH

6. Decision: Update List of RMP Projects Eligible for Supplemental Environmental Project Funding and Recommend Allocation of Existing SEP Funds

Phil Trowbridge presented the existing SEP list. The TRC agreed that Phil should remove the studies that had been identified as low priority, completed, or superseded by a new proposal with one exception. The exception was the STLS project to develop a statistical model for trends detection. Chris Sommers had requested that this project be retained. The TRC also agreed to add all the unfunded projects from the 2019 proposals will be added to the list.

Jay mentioned that the PCB Workgroup is recommending that the $30k of 2018 RMP funds allocated to the Richmond Harbor PCB Conceptual Model Project be moved to a project to monitor stormwater loads of PCBs to San Leandro Bay. Jay will bring this recommendation to the Steering Committee in July. Therefore, the Richmond Harbor project should be retained on the SEP list with a higher cost.

Action Items

- Update the SEP List based on the TRC recommendations and present it to the Steering Committee in July (Phil Trowbridge, by 7/25/18)

7. Decision: Recommendation for 2017 Water Cruise Results for Copper and Selenium and Update on SCCWRP IC Study

Don Yee presented findings that the TRC had recommended he gather in order to further understand copper results from Brooks Applied Laboratories (BAL) from the 2017 Water Cruise. Don explained that BAL had determined that a titanium species interference with the newer method had caused the discrepancy. BAL had fixed the issue and planned to re-analyze the samples using the newer method (triple quad mass spec). The TRC agreed to wait until BAL obtains data from the re-run Water Cruise samples and to publish these data as the official copper results from the 2017 Water Cruise.

Don then provided an update on the Southern California Water Research Project (SCCWRP) lab intercalibration (IC) study on sediment and tissue. SCCWRP will have a final report that details the findings of the IC study but none of SCCWRP's findings showed any cause for concern regarding the RMP's current selection of labs.

Action Items:

- Report on copper results produced from BAL re-analysis at the September TRC meeting. Decide which method(s) to use in future years for copper analysis and how long to have overlap between old and new methods. (Don Yee, 9/1/18)
- When SCCWRP publishes their final report, contextualize their findings for the RMP in a memo. (Don Yee, 9/1/18)

8. Decision: Confirm Status and Trends Monitoring Design

Phil Trowbridge began the discussion on the Status and Trends monitoring design by summarizing two new recommended changes: (1) add Fipronil to the list of analytes for

sport fish and sediment matrices and (2) add legacy pesticides to the list of analytes for the sediment cruise.

There was no opposition to adding fipronil to the S&T design. However, TRC members were skeptical that ambient sediment was the correct matrix to monitor in support of management decisions related to legacy pesticides. The TRC decided to eliminate legacy pesticides from the list of analytes for ambient sediment monitoring, provisionally, pending confirmation from the Water Board. Subsequent to the meeting, the Water Board (Naomi Feger) agreed with dropping legacy pesticides from the open Bay sediment sampling but wanted to consider analyzing some archived sediment samples from the margins for these parameters to inform decisions about screening thresholds for beneficial reuse in the margin areas.

Action Items

- Prepare a proposal to analyze sediment archives from the margins for legacy pesticides. (Phil Trowbridge, by 9/1/18)

9. Discussion: RMP Communications Products and Agenda for Annual Meeting

Jay Davis provided a brief update on RMP communications and notified the TRC that he planned to have a draft RMP Update for review by the end of June. Jay then began discussing the Annual Meeting agenda by highlighting the addition of Joel Blum who was slated to kick off the Annual Meeting with a talk on linking mercury pathways with concentrations in fish.

There was some discussion regarding the proposed talk about water quality impacts of the North Bay fires. The results may not be interesting enough. It would have to include RB2, RB1, and RMP results. The RMP non-targeted analysis results are not likely to be ready in time. Naomi agreed to talk to Kevin Lunde about the talk. The TRC agreed that Taylor Winchell's talk on suspended sediment could be a backup for the North Bay Fire talk.

Participants expressed support for spreading around moderator responsibilities rather than having the Water Board moderate all four sessions. They recommended that the Water Board moderate Session 1, David Senn moderate the nutrients session, and Karin North moderate the CECs session. For the nutrients session, the group was in favor of having Barbara Baginska (Suisun Marsh TMDL), Alexis Fischer (UCSC CytoBot work), and having Zhenlin Zhang or Taylor Winchell fill the last slot.

Action Items

- Get more information on the North Bay Fire talk from Kevin Lunde. (Naomi Feger, 7/25/18)

10. Information: Status of Deliverables and Action Items

Phil Trowbridge highlighted the large number of technical reports that were currently out for review and solicited comments.

11. Discussion: Plan agenda items for future meetings

The TRC confirmed that previews of Annual Meeting talks, an update on the RMP Data Analysis Challenge, and a report back on copper data should be included in the September TRC meeting.

12. Discussion: Plus/Delta

The TRC thanked RMP staff for pluses and had no deltas.

Adjourn

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DATE: July 17, 2018

TO: RMP Steering Committee

FROM: Philip Trowbridge

RE: RMP Financial Update – period ending 6/30/18

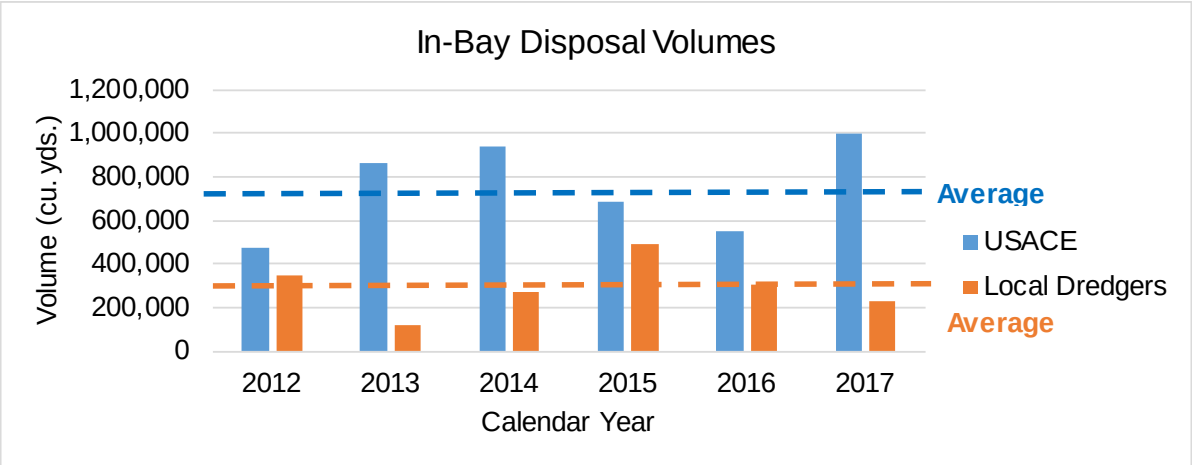
The purpose of this memorandum is to provide an update of budgets and expenses for all open RMP budget years and the balances of reserve and designated funds. All of the values presented are current as of June 30, 2018, hereinafter referred to as the "current period".

RMP 2018 BUDGET

Revenue

$2,339,754 of the $3,326,493 (70%) in fees have been collected. All of the invoices for fees have been issued except for the invoice for Caltrans, which will be sent in the fall after the RMP Update report is produced.

The expected fees are $259k lower than the target fees for the year. The deficit is because dredger fees are below average. $150k of the deficit is associated with the US Army Corps of Engineers; and $109k of the deficit is associated with local dredgers. 2018 is the first year of the new dredger fee formula. This formula assigns $400k of fees to the USACE and charges local dredgers a per cubic yard fee based on the volume of in-Bay disposal in the prior year. 2017 was a higher than average year for in-Bay disposal but the majority of it was done by USACE. As a result, the cash fees paid to the RMP by the local dredgers are lower than the target.



The RMP accumulated a small Dredger Reserve Fund from dredging projects implemented during the six-month period between the old and new fee schedules. Use of these Dredger Reserve Funds is recommended to offset the shortfall in 2018 fees. See the following paragraphs for details.

Expenses

Overall, 44% of the 2018 funds have been spent which is consistent with the expected burn rate for the year. A few smaller tasks are fully spent (or over budget) but are now closed to further billing. Collectively, these tasks are $4k over budget. The main concern is a $35k cost overrun for Workgroup Meetings (Task 2C). Higher than expected amounts of time were needed to plan and implement the two-day Emerging Contaminants Workgroup meeting back-to-back with the Exposure and Effects Workgroup meeting. We also added meetings for the new Microplastic Workgroup and the Sediment Workgroup. Costs for the Program Management task (Task 1) are generally running higher than budget. We will watch expenses in these tasks carefully and attempt to stay within budget. In the Communications task, costs for Communications Plan Implementation (Task 5A) will be higher than expected and costs for Website Maintenance (Task 5G) will be lower than expected. The differences in these two subtasks will offset each other.

Figure 1a shows a comparison of expenses to budget by task. For more detailed information on budgets and expenses by line item, please refer to Table 1a.

Plan for Dealing with Budget Deficit

Between the shortfall in dredger fees and the cost overrun for Workgroup Meetings, there is a $144k deficit in the 2018 RMP budget as shown in the table below.

Dredger Fees		Expected	Received or A/R	Shortfall
	Local Dredgers	$253,617	$144,557	-$109,060
	USACE	$400,000	$250,000	-$150,000
	Total	$653,617	$394,557	-$259,060
Local dredger shortfall means RMP has $109,060 less than expected				
USACE fee shortfall means USGS only receives $250,000				
Cost Overruns		Expected	Actual	Overage
	WG Expenses	$110,000	$145,369	-$35,369
Total of Fee Shortfall and Cost Overage				**-$144,429**

To make up for this deficit, we propose to use a combination of Dredger Reserve Funds and expected surpluses in the Status and Trends (S&T) budget lines as shown in the table below.

Dredger Reserve		$62,665	
Cost Savings			
	S&T Bivalves	$35,000	(expected surplus)
	S&T Bird Eggs	$15,000	(expected surplus)
	S&T Sediment	$10,000	(expected surplus)
	S&T Lab IC Studies	$20,000	(expected surplus)
	S&T SB Margins Study	$5,000	(expected surplus)
	Total	$85,000	
Total of Fee Surpluses and Cost Savings		**$147,665**	

The proposal is to change the budgets for the Workgroup Meetings and S&T tasks shown to match actual or expected costs to balance the overall budget.

Unencumbrances this Quarter

There is $30k allocated to a PCB special study in Richmond Harbor. None of these funds have been spent. The PCB Workgroup has recommended that these funds be re-assigned to another PCB special study in 2019. Therefore, we request that these funds be unencumbered to the Undesignated Funds and then re-assigned during the funding decision about 2019 special studies.

PRIOR YEAR BUDGETS

Revenue

All of the RMP fees and interest from prior years have been collected.

Expenses

Some S&T and special study tasks remain open in the 2015, 2016, and 2017 budget years. These tasks need to remain open because they are multi-year studies or have open contracts awaiting a final invoice. The balance of funds in these years are $33k, $38k, and $460k for 2015, 2016, and 2017, respectively. We anticipate finishing all the remaining tasks on budget.

For more detailed information on budgets and expenses by line item, please refer to Tables 1b-1d.

RESERVE FUNDS

Dedicated Set-Aside Funds

The RMP has several dedicated set-aside funds. The purpose of these funds is to spread out the cost of large projects across multiple budget years. The current balance of all set-aside funds is **$731,154**. The current balance of each set-aside fund is shown in Table 2.

Dedicated Dredger Reserve Fund

RMP staff and the Bay Planning Coalition (BPC) developed a new fee schedule for dredgers for dredging completed in 2017-2019. Part of that agreement was that the deficit in the Dredger Reserve Balance would be reset to zero beginning with RMP budget year 2018. The first deposits to this Reserve will be from dredger fees associated with the 6-month "stub year" that was created when the new fee schedule was developed[1]. A total of $62,665 has been invoiced for the stub year and $20,925 has been received. Therefore, the balance of the Dredger Reserve is currently **$20,925**. Table 3 tracks the running balance of the Dredger Reserve Fund.

Undesignated Funds

The RMP has a policy to maintain a reserve of Undesignated Funds of at least $200,000 to allow for response to unanticipated funding needs or revenue shortfalls. Any remaining Undesignated Funds are available for spending at the discretion of the Steering Committee. Figure 2 shows how the balance of Undesignated Funds has changed over time. The current balance of Undesignated Funds through the current period is **$855,483**. The balance increased by $116,848 from last quarter due to unencumbrances from the 2014, 2015, 2016, and 2017 budget years and the purchase of $80,000 of sampling equipment. Table 4 shows the withdrawals and deposits in the Undesignated Funds during the last two budget years.

Supplemental Environmental Project (SEP) Funds

The total amount of RMP SEP funds received through the current period is $1,170,500 (Table 5a). Descriptions of proposed or approved projects are shown in Table 5b. A total of $81,752 of SEP funds have been received that are not yet committed to a project. As of the current period, $761,283 of the funds have been spent, leaving a balance of **$409,217**. See Table 5a for a line item breakdown of expenses for the approved projects (only open projects shown).

Alternative Monitoring Requirement Funds

[1] In December 2016, the Fee Schedule was updated to cover the 2017-2019 period. One of the changes was to switch from a fiscal year to a calendar year basis to avoid splitting activity in the same dredging window into two different fiscal years. Specifically, for the last cycle of the old Fee Schedule, the fees were assessed for the period 7/1/15-6/30/16. The invoice for these fees was sent in November 2016. For the first cycle of the new Fee Schedule, the fees will be assessed using the period 1/1/17-12/31/17. The invoice for these fees will be sent in March 2018. This leaves a 6-month gap of 7/1/16 to 12/31/16 between the period used to assess RMP fees under the old Fee Schedule and the new one.

The Water Board adopted Order R2-2016-0018 on March 9, 2016, establishing an alternative monitoring requirement (AMR) for municipal wastewater discharges to San Francisco Bay and its tributaries in exchange for a set schedule of increased payments to the RMP. Participating wastewater treatment facilities who opt-in to this alternative will be able to reduce their effluent monitoring costs for most organic priority pollutants and chronic toxicity sensitive species re-screening. Facilities will also realize cost savings from reduced sampling labor and data management. In exchange for the reduced monitoring requirements, facilities will make supplemental payments to the RMP for regional studies to inform management decisions about water quality in the Bay. The intended use of these funds is for RMP monitoring and special studies for contaminants of emerging concern.

Municipal wastewater agencies had the option to join this program by September 2016. Most of the agencies elected to pay into the fund. There are 2 agencies who did not opt in to the AMR. These entities will have the option to join at any time, at which point their fees will be locked for 5 years as the AMR Order made no mention of inflation or increases whenever the entity decided to join.

All of the AMR funds from FY17 and FY18 have been allocated to emerging contaminants projects (Table 6). For FY19, we expect to receive the same amount of AMR funds ($269,575) as in the prior year. The amount currently received is **$250,799**.

OVERALL BUDGET SUMMARY

Table 7 provides a summary of RMP budgets, expenses, and reserve funds across all years.

FOR STEERING COMMITTEE APPROVAL

- Allocate $62,665 from the Dredger Reserve to partially offset the shortfall in 2018 local dredger fees ($109,060).
- Adjust the budgets for certain tasks in the 2017 and 2018 budgets to realize net cost savings of $50,000 to make up the rest of the dredger fee shortfall and to account for the cost overrun for 2018 Workgroup Meetings.

Task	Subtask	Description	Budget	New Budget
Governance				
2	C	WG Meetings	$110,000	$145,000
Communications				
5	A	Communications Plan Implementation	$35,000	$42,000
5	G	RMP Website Maintenance	$20,000	$13,000
Status and Trends Monitoring				
6	C	2018 Bivalve Cruise	$132,000	$97,000
6	E	2018 Bird Egg Monitoring	$197,000	$182,000
6	G	2018 Sediment Cruise	$265,000	$255,000
6	I	S&T Laboratory Intercomparison Studies	$50,000	$30,000
3017/6	F	2017 South Bay Margins Study	$260,000	$255,000
		Total	$1,069,000	$1,019,000

- Unencumber the $30,000 allocated to the Richmond Harbor PCB Special Study in the 2018 Budget. These funds will be re-budgeted during the 2019 Special Studies decision.

Figures and Tables

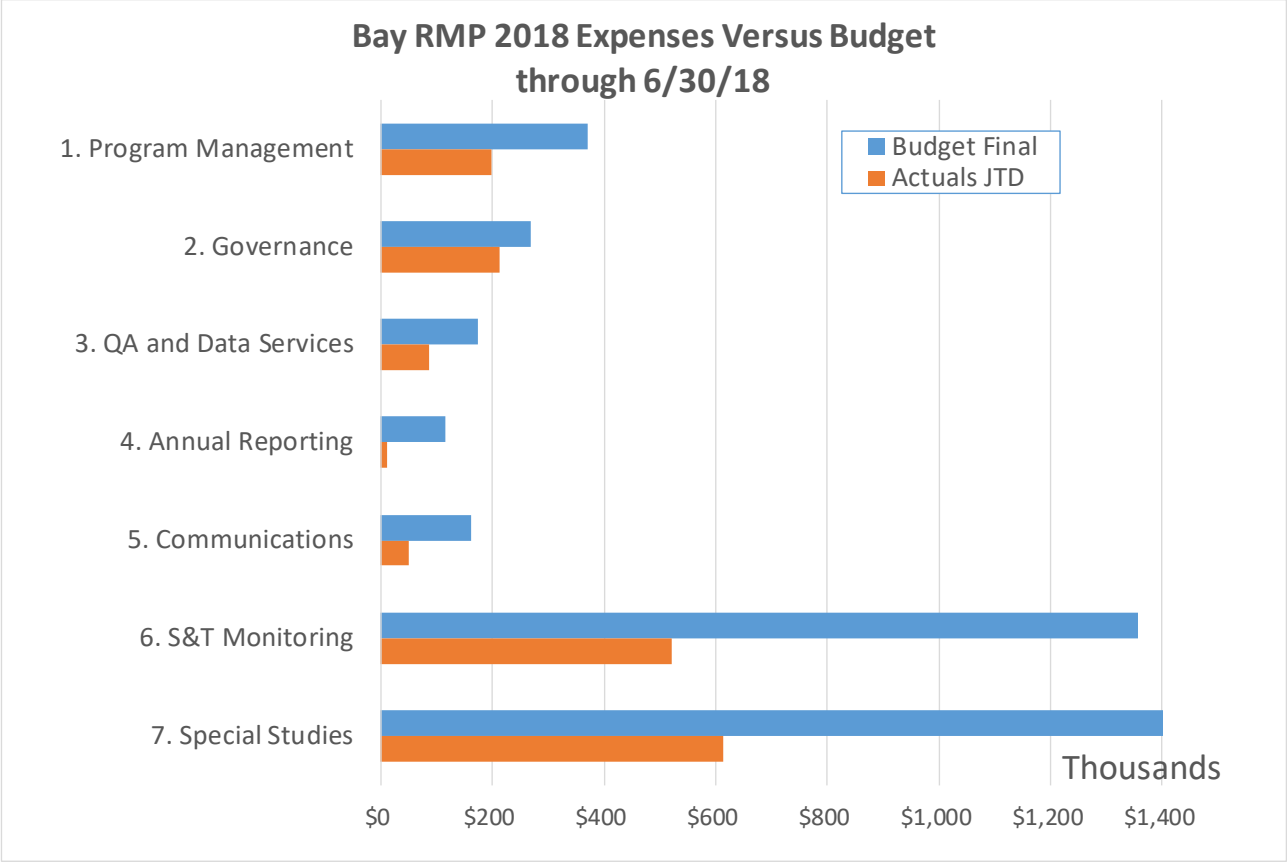


Figure 1a: Bay RMP 2018 Budget. Budget and expenses through the current period by category.

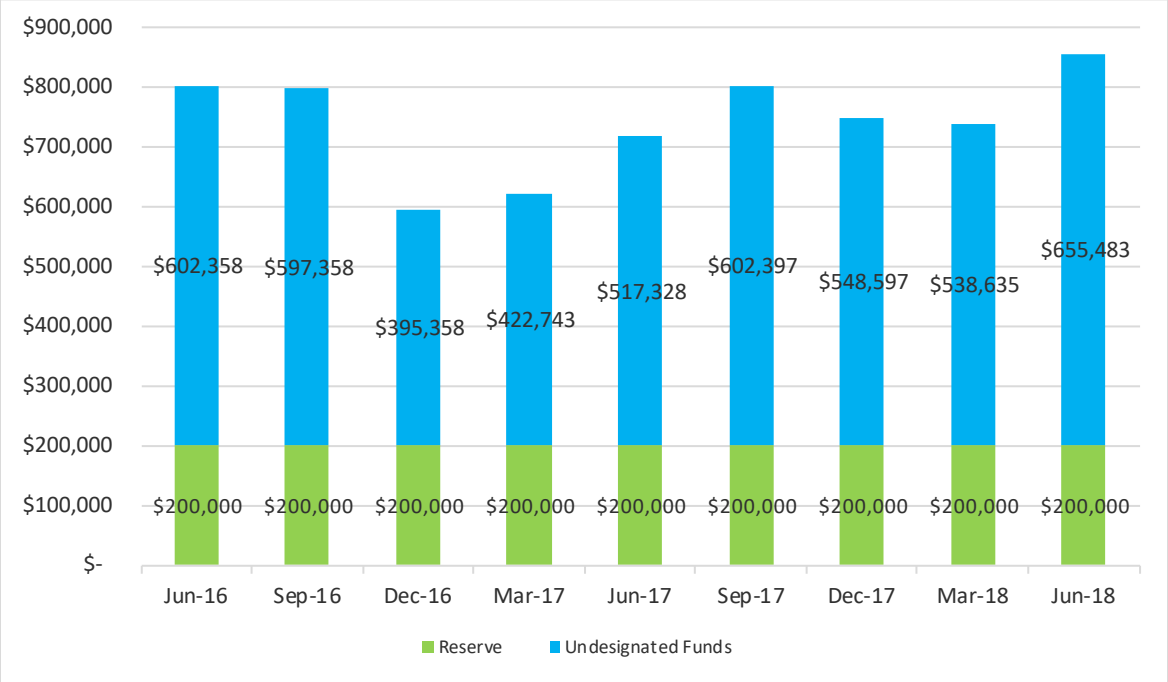


Figure 2: Bay RMP Undesignated Funds. Balance over the past two years. The height of the bar shows the total balance of the Undesignated Funds. However, the bar is color coded to indicate the RMP policy that $200,000 of the Undesignated Funds should not be spent.

Table 1a: Bay RMP 2018 Budget. Budget and expenses through the current period by line item.

Task		Subtask	Budget Final	Expenses JTD	Percent Spent
Task Number: 001 Program Management	A	Program Planning	$40,000	$8,362	21%
	B	Contract and Financial Management	$160,000	$102,945	64%
	C	Technical Oversight	$50,000	$25,130	50%
	D	Internal Coordination	$80,000	$47,910	60%
	E	External Coordination	$30,000	$12,874	43%
	F	Administration	$10,000	$853	9%
Task Number: 001 Program Management Total			$370,000	$198,074	54%
Task Number: 002 Governance	A	SC Meetings	$49,600	$21,385	43%
	B	TRC Meetings	$49,600	$28,698	58%
	C	WG Meetings	$110,000	$145,369	132%
	D	External Science Advisors	$60,000	$18,139	30%
Task Number: 002 Governance Total			$269,200	$213,591	79%
Task Number: 003 QA and Data Services	A	Quality Assurance System	$30,000	$15,969	53%
	B	Online Data Access: CD3	$65,000	$46,293	71%
	C	Database Maintenance	$50,000	$15,897	32%
	D	Updates to SOPs and Templates	$30,000	$9,766	33%
Task Number: 003 QA and Data Services Total			$175,000	$87,924	50%
Task Number: 004 Annual Reporting	A	RMP Update Report	$55,000	$9,190	17%
	B	Annual Meeting	$60,000	$3,237	5%
Task Number: 004 Annual Reporting Total			$115,000	$12,427	11%
Task Number: 005 Communications	A	Communications Plan Implementation	$35,000	$24,566	70%
	B	Stakeholder Engagement	$20,000	$5,528	28%
	C	Responses to Information Requests	$12,000	$593	5%
	D	Outreach Products	$30,000	$10,950	36%
	E	Presentations at Conferences and Meeting	$45,000	$3,717	8%
	G	RMP Website Maintenance	$20,000	$4,770	24%
Task Number: 005 Communications Total			$162,000	$50,124	31%

Table 1a: Bay RMP 2018 Budget. Budget and expenses through the current period by line item.

Task		Subtask	Budget Final	Expenses JTD	Percent Spent
Task Number: 006 S&T Monitoring	A	USGS Sacramento Support	$250,000	$250,000	100%
	B	USGS Menlo Park Support	$235,000	$117,500	50%
	C	2018 Bivalve Cruise	$132,000	$12,024	9%
	D	2018 Bivalve Cruise Data Mgmt	$15,000	$270	2%
	E	2018 Bird Egg Monitoring	$197,000	$15,906	8%
	F	2018 Bird Egg Monitoring Data Mgmt	$40,000	$1,272	3%
	G	2018 Sediment Cruise	$265,000	$12,045	5%
	H	2018 Sediment Cruise Data Mgmt	$36,000		0%
	I	S&T Laboratory Intercomparison Studies	$50,000	$20,750	41%
	J	Sample Archive	$47,000	$21,544	46%
	K	2018 S&T Field Sampling Report	$10,000	$169	
	L	Acoustic Release System Purchase	$80,000	$70,967	89%
Task Number: 006 S&T Monitoring Total			$1,357,000	$522,447	39%
7. Special Studies		Task Number: 020 Special Study: PCB Strategy Support	$10,000	$10,186	102%
		Task Number: 021 Special Study: PCB Richmond Harbor Conce	$30,000		0%
		Task Number: 022 Special Study: PCB San Leandro Bay Fish	$21,000	$15,415	73%
		Task Number: 025 STLS Unallocated Funds	$25,000		0%
		Task Number: 026 STLS Data Analysis	$100,000	$79,969	80%
		Task Number: 027 STLS Management support	$32,000	$15,848	50%
		Task Number: 028 Trends Road Map			
		Task Number: 029 RWSM	$7,000	$2,950	42%
		Task Number: 030 WY18 POC monitoring	$125,000	$20,970	17%
		Task Number: 031 STLS AFR Conceptual Model Dev	$13,000	$14,426	111%
		Task Number: 032 EC Microplastic in Bivalves	$45,600	$158	0%
		Task Number: 033 EC Strategy Support	$65,000	$31,693	49%
		Task Number: 034 EC CUP in Margin Sediment and Water	$128,970	$56,974	44%
		Task Number: 035 EC Pharmaceuticals in Wastewater	$30,000	$22,133	74%
		Task Number: 036 EC Non-Targeted Analysis of Sed & Water	$101,000	$9,191	9%
		Task Number: 037 EC Archive Collection for PFAS Margin Se	$2,500	$2,517	101%

Table 1a: Bay RMP 2018 Budget. Budget and expenses through the current period by line item.

Task		Subtask	Budget Final	Expenses JTD	Percent Spent
		Task Number: 038 EC Archive Collection for NPE Margin Sed	$2,500	$2,489	100%
		Task Number: 039 Moored sensor / DO /biogeochem	$230,229	$190,661	83%
		Task Number: 040 Channel Monitoring	$119,771	$47,128	39%
		Task Number: 043 Selenium Strategy Support	$10,000	$7,314	73%
		Task Number: 045 Sediment Workgroup Support	$10,000	$9,963	100%
		Task Number: 046 Sediment DMMO Database Support	$55,000	$5,158	9%
		Task Number: 047 Sediment Dumbarton Bridge Flux Monitorin	$120,000	$1,434	1%
		Task Number: 048 Sediment Mallard Island Flux Monitoring	$30,490	$30,000	98%
		Task Number: 050 EE Strategy Support	$10,000	$12,006	120%
		Task Number: 051 Sediment Bioaccumulation Guidance	$30,000	$18,703	
		Task Number: 052 EE Benthic Community Synthesis	$21,000		0%
		Task Number: 053 EC North Bay Wildfire Monitoring	$36,000	$5,643	16%
7. Special Studies Total			$1,411,060	$612,930	43%
8. Unallocated			$2,442	$0	0%
Grand Total			$3,861,702	$1,697,518	44%

Table 1b: Bay RMP 2017 Budget. Budget and expenses through the current period by line item.

Task		Subtask	Budget Final	Expenses JTD	Percent Spent	Status	Surplus or Deficit
Task Number: 003 QA and Data Services	A	Quality Assurance System	$40,000	$40,299	101%	$250 pmt remaining	
Task Number: 006 S&T Monitoring	D	2017 Water Cruise Lab Expenses	$45,000	$41,455	92%	Inactive	
	F	2017 South Bay Margins Sediment Study	$260,000	$198,581	76%		
	H	Global Passive Sampling Initiative	$8,000	$5,997	75%		
	L	PBDE Analysis for Archived 2016 Bird Egg	$14,300		0%		
7. Special Studies		Task Number: 021 PCB Steinberger Slough Conceptual Model	$60,000	$18,547	31%		
		Task Number: 022 Dioxin Synthesis	$52,000	$48,228	93%		
		Task Number: 028 STLS Trends Strategy	$100,000	$99,457	99%		
		Task Number: 029 STLS Regional Watershed Model	$40,000	$39,726	99%	Inactive	
		Task Number: 030 STLS Wet Weather Characterization	$200,000	$181,121	91%		
		Task Number: 031 EC PFAS Synthesis	$56,300	$57,169	102%	Inactive	
		Task Number: 032 EC Imidacloprid	$40,110	$4,678	12%		
		Task Number: 034 EC Phosphate Flame Retardant Water Monit	$47,125	$3,697	8%		
		Task Number: 035 EC Bisphenol Water Monitoring	$50,000	$2,165	4%		
		Task Number: 036 EC Triclosan Fish Monitoring	$41,300	$10,816	26%		
		Task Number: 037 EC Microplastic Study	$75,000	$39,436	53%		
		Task Number: 039 Nutrient Moored Sensor Monitoring	$220,000	$207,361	94%		
		Task Number: 040 Nutrient Ship-Based Monitoring	$153,000	$118,120	77%		
		Task Number: 045 Selenium 2017 Derby Monitoring	$42,000	$30,578	73%		
		Task Number: 052 Sediment Strategy Development	$50,000	$6,633	13%		
8. Unallocated			$20,352	$0	0%		
Total			$1,614,487	$1,154,065	71%	Balance: $460422	

Table 1c: Bay RMP 2016 Budget. Budget and expenses through the current period by line item.

Task		Subtask	Budget Final	Expenses JTD	Percent Spent	Status	Surplus or Deficit
7. Special Studies		Task Number: 030 MRP POC Monitoring	$150,435	$150,361	100%	Inactive	
		Task Number: 031 EC Non-Targeted Analysis	$52,000	$38,076	73%		
		Task Number: 037 Nutrients Unallocated Funds	$9,282	$9,282	100%	Inactive	
		Task Number: 038 Nutrients Margins DO Monitoring	$200,000	$186,496	93%		
		Task Number: 040 Nutrient Monitoring Program Development	$20,000	$19,434	97%		
		Task Number: 041 Nutrient Chlorophyll a Analysis	$15,718	$15,732	100%	Inactive	
		Task Number: 042 Nutrient Data Management	$25,000	$25,036	100%	Inactive	
8. Unallocated		Task Number: 070 Unallocated	$9,657	$0	0%		
Total			$482,092	$444,418	92%	Balance: $37674	

Table 1d: Bay RMP 2015 Budget. Budget and expenses through the current period by line item.

Task		Subtask	Budget Final	Expenses JTD	Percent Spent	Status	Surplus or Deficit
7. Special Studies		Task Number: 037 Nutrients: Modeling	$165,000	$140,919	85%		
		Task Number: 038 Nutrients: High-Frequency Mapping Study	$115,000	$114,936	100%	Inactive	
		Task Number: 046 Selenium Sturgeon Tissue Plug Monitoring	$35,000	$34,828	100%	Inactive	
8. Unallocated		Task Number: 070 Unallocated	$9,129	$0	0%		
Total			$324,129	$290,683	90%	Balance: $33446	

Table 2: Bay RMP Dedicated Set-Aside Funds. Balances as of the current period.

Reserve Type	Purpose	Balance
Dedicated Set-Aside Fund	Program Review	$88,179
Dedicated Set-Aside Fund	S&T Monitoring	$592,975
Dedicated Set-Aside Fund	Monitoring Contingency	$50,000
	TOTAL	**$731,154**

Table 3: Bay RMP Dedicated Dredger Reserve Fund. Yearly surplus (deficit) and total surplus (deficit) as of the current period. Note that the previous running surplus/deficit was reset to $0 in 2018.

Year	Yearly Surplus/Deficit	Balance
Starting Balance from “Stub Year”		$41,740 (invoiced) $20,925 (received) $62,665 (total)
2018	-$109,060	-$46,395

Table 4: Bay RMP Undesignated Funds. Withdrawals and deposits during the last two budget years and total balance as of the current period.

Budget Year	Deposit or Withdrawal	Authorization	Date of Authorization	Amount	Comment
2017	Withdrawal	Steering Committee	11/1/2016	-$133,000	Borrowing 2018 margins funds. These funds will be repaid in 2018. SC approved 11/1/16 as part of budget approval.
2017	Withdrawal	Steering Committee	11/1/2016	-$35,000	Match for Moore Fdn Microplastics Grant. SC approved 11/1/16.
2017	Withdrawal	Steering Committee	11/1/2016	-$15,000	Increase budget selenium strategy support (task 043). Approved by SC on 11/1/16.
2017	Withdrawal	Steering Committee	11/30/2016	-$19,000	Increase budget for selenium monitoring (task 044). Approved by SC by email on 11/30/16.
2015	Deposit	Steering Committee	1/17/2017	$39,385	Portion of the unencumbered funds from 2015 budget
2017	Withdrawal	Steering Committee	1/17/2017	-$12,000	Increase budget for dioxin synthesis task (task 022). Approved by SC on 1/17/17.
2016	Deposit	Steering Committee	4/26/2017	$134,585	Left-over funds from 3016.00 unencumbered at the 4/26/17 SC meeting.
2017	Withdrawal	Steering Committee	4/26/2017	-$40,000	Funds for Sediment Supply Synthesis, approved the SC on 4/26/17.
2014	Deposit	Steering Committee	7/19/2017	$25,375	Left-over funds from 3014.00 unencumbered at the 7/19/17 SC meeting.
2015	Deposit	Steering Committee	7/19/2017	$26,487	Left-over funds from 3015.00 unencumbered at the 7/19/17 SC meeting.
2016	Deposit	Steering Committee	7/19/2017	$33,207	Left-over funds from 3016.00 unencumbered at the 7/19/17 SC meeting.
2017	Withdrawal	Steering Committee	11/1/2017	-$14,300	Analysis of tern egg samples for PBDEs, approved by SC on 11/1/17.
2018	Withdrawal	Steering Committee	11/1/2017	-$70,000	Revenue to balance the 2018 budget. Approved by SC on 11/1/17.
2018	Deposit	Steering Committee	11/1/2017	$66,500	Repayment of half the "borrowed" 2018 margins funds. Second half will be repaid in 2019. "Borrowing" was SC approved 11/1/16 as part of the 2017 budget approval.
2018	Withdrawal	Steering Committee	11/29/2017	-$36,000	SC email decision to fund proposal for North Bay Fire Response Monitoring
2018	Withdrawal	Steering Committee	1/24/2018	-$15,000	SC decision to add $15,000 to the bivalve cruise budget for the boat

Budget Year	Deposit or Withdrawal	Authorization	Date of Authorization	Amount	Comment
					rental (accidentally left out of the original budget).
2014	Deposit	Steering Committee	4/25/2018	$750	Released funds from the 2014 budget per 4/19/18 Budget Memo.
2015	Deposit	Steering Committee	4/25/2018	$50,019	Released funds from the 2015 budget per 4/19/18 Budget Memo.
2016	Deposit	Steering Committee	4/25/2018	$33,458	Released funds from the 2016 budget per 4/19/18 Budget Memo.
2017	Deposit	Steering Committee	4/25/2018	$112,872	Released funds from the 2017 budget per 4/19/18 Budget Memo.
2018	Withdrawal	Steering Committee	4/25/2018	-$80,000	SC decision to use $80k to purchase acoustic release systems for bivalve cruise.
2016	Withdrawal	Program Manager	7/14/2018	-$166	Correction to amount of funds released to Undesignated funds (7/14/18). Late charges to a few tasks that were closed changed the balance of funds that could be unencumbered.
2017	Withdrawal	Program Manager	7/14/2018	-$85	Correction to amount of funds released to Undesignated funds (7/14/18). Late charges to a few tasks that were closed changed the balance of funds that could be unencumbered.
TOTAL				**$855,483**	**Total UF Balance**

Table 5a: Bay RMP Supplemental Environmental Project (SEP) Funds. Penalty funds received and expenses through the end of the reporting period. The RMP maintains records of each individual payment in a separate database.

Project Assignment	**Amount Received**	**Amount Spent**	**Balance**	**Status**
Task 001: San Leandro Bay PCB, phase I	$128,848	$128,848	$0	Closed
Task 002: San Leandro Bay PCB, phase 2	$105,000	$105,000	$0	Closed
Task 003: Nutrient Modeling	$240,250	$240,250	$0	Closed
Task 004: Golden Gate Sediment Study	$68,500	$68,500	$0	Closed
Task 005: San Leandro Bay PCB, phase 3	$15,000	$15,000	$0	Closed
Task 006: Suisun Bay Selenium Monitoring Study	$121,500	$112,125	$9,375	
Task 007: HAB Investigation in SFB	$195,000	$29,973	$165,027	
Task 008: North Bay Selenium Synthesis	$54,500	$28,127	$26,373	
Task 009 DMMO Data Synthesis for PCBs	$45,150	$1,804	$43,346	
Task 010 Napa & Sonoma Stream Gages	$115,000	$31,656	$83,344	
Unassigned	$81,752	$0	$81,752	
Grand Total	**$1,170,500**	**$761,283**	**$409,217**	

Table 5b: Bay RMP Supplemental Environmental Project Descriptions

Study Name	Budget	Description	Status
San Leandro Bay Priority Margin Unit Study, Phase 1	$132,100	The goal of the study is to assemble and collect PCB related information on water quality in San Leandro Bay, which has been identified as an area on the Bay margin that is a high priority for water quality management. The study will assemble existing information into a conceptual model of PCB dynamics in San Leandro Bay, and conduct field studies as allowed by the study budget to address critical information needs related to conceptual model development.	Complete
San Leandro Bay Priority Margin Unit Study, Phase II	$105,000	The goal of the study is to assemble and collect PCB-related information on water quality in San Leandro Bay, which has been identified as an area on the Bay margin that is a high priority for water quality management. The study will conduct field studies as allowed by the study budget to address critical information needs related to conceptual model development. In Phase 1 of the study, PCB related information was assembled into a conceptual model of PCB dynamics and fish and sediment samples were collected at multiple locations; some samples were analyzed. Phase 2 will complete the sediment PCB analyses and collect biota samples.	Complete
Nutrients Modeling	$240,250	The primary goals for this study are to calibrate and validate numerical models used for (1) predicting how anthropogenic nutrients (nitrogen and phosphorous) enter and react within the Bay; (2) predicting how the Bay responds to these inputs, including phytoplankton blooms and low dissolved oxygen; and (3) explore how various nutrient load reduction management decisions will affect habitat condition. The models will also be useful for tracing how inflows, including streams, rivers and discharges, influence salinity distributions, and how contaminants and materials present in these flows are transported throughout the Bay, including Lower South Bay.	Approved
Golden Gate Sediment Study	$68,500	To study sediment exchange at the Golden Gate during extreme wet weather, USGS will utilize acoustic measurements of suspended-sediment concentration (SSC) and water discharge at a cross section inside the Golden Gate to estimate suspended-sediment flux. Water samples collected along the cross section at several depths will be used to relate acoustic backscatter to SSC. The field campaign will last two field days to capture one ebb tide and one flood tide using the R/V Questuary. The field sampling will be augmented by numerical modeling of fluxes by USGS' Santa Cruz office.	Complete
San Leandro Bay, Phase III	$15,000	Analysis of archived fish tissue samples for PCBs. The samples were collected during Phase I and II of the project but not analyzed.	Complete
Suisun Bay Selenium Monitoring Study	$121,500	The goal of the study is to develop and pilot test a selenium monitoring program in Suisun Bay to evaluate potential trends in selenium levels due to changes in hydrology in the Delta or changes in selenium loads to Bay-Delta tributaries in the Central Valley. The project tasks include the following: 1) assemble existing data on selenium concentrations in Suisun Bay; 2) use the data to develop a quantitative statistical study design framework to monitor for selenium trends in Suisun Bay; 3) conduct monitoring to pilot test the study design framework and report the monitoring results.	Approved

Study Name	Budget	Description	Status
HAB Investigation	$195,000	This project will conduct a series of investigations of HABs in the Bay. The types of investigations to be completed are listed below: 1. Expanded biota sampling for improved understanding of toxin sources, spatio-temporal variability, and food web exposure. 2. Continuous deployment of the Imaging Flow CytoBot (IFCB) in Central Bay: building moored capacity and establishing a coastal end-member signal. 3. Determine whether SFB hosts internal sources of Alexandrium in the form of cysts in sediments. 4. Determine if coastal Pseudonitzchia or Alexandrium isolates can grow in SFB, or face obstacles beyond low-light and strong-mixing.	Approved
North Bay Selenium Synthesis	$54,500	The goal of the study is to perform an information synthesis to support development of a selenium monitoring program for the North Bay. The synthesis would support an integrated and strategic approach to monitoring in support of the TMDL. Specific items to be covered include examination of the linkages between the three indicators (e.g., water column, sediment, and tissue), completing the development of the statistical framework for monitoring design and data evaluation, and consideration of analytical methods for long-term monitoring.	Approved
DMMO Data Synthesis for PCBs	$45,150	The Dredged Material Management Office (DMMO) maintains a database that compiles sediment chemistry testing data from all dredging projects in San Francisco Bay. This rich database has only recently been released to the public. This study would synthesize the available information from the DMMO database to evaluate PCB concentrations from dredging projects, to compare their concentrations ranges to other areas (e.g., open water and margin ambient sites), and to estimate the mass of PCB removed from the Bay by dredging. These data would provide valuable information to confirm the PCB TMDL assessment that dredging results in a net loss of PCBs from the Bay and to leverage data already collected to evaluate the current conceptual model of PCBs in the Bay.	Approved
Napa and Sonoma Stream Gages	$115,000	The calculation and monitoring of sediment loads entering San Francisco Bay are important for a variety of reasons, such as to inform dredging and tidal wetland restoration projects and to assess aquatic ecology, among others. While the information on sediment loads from many tributary sources is up-to-date, for other areas, such as the North Bay watersheds, there is little or no recent data. The objective of the study is to address this data gap by monitoring sediment loads at two existing USGS gages in the North Bay watersheds: 11458000 NAPA R NR NAPA CA, and 11458500 SONOMA C A AGUA CALIENTE CA. These two existing USGS gages currently monitor water flow rates following standard USGS methods. The addition of sediment load monitoring at these two gages is particularly important now because it will also provide information on sediment loads following the recent and extensive North Bay fires in these watersheds. Both gages have burned areas upstream. For this reason, it is critical that the monitoring begin as soon as possible.	Approved

Table 6: Bay RMP Alternative Monitoring Requirement Funds Received and Allocations to Projects.

RMP Budget Year	Amount Received	Project Assignment	Project Budgets
2017	$261,919	2017 Bisphenol Water Monitoring	$50,000
		2017 PFAS Synthesis	$56,300
		2017 Phosphate Flame Retardant Water Monitoring	$47,125
		2017 Triclosan Fish Monitoring	$41,300
		2017 Microplastic Study Matching Funds	$40,000
		2018 Microplastic in Bivalves	$27,194
		Total	**$261,919**
2018	$269,575	Microplastic in Bivalves (Total project budget of $45,600 will be covered by a combination of FY17 AMR$$, FY18 AMR $$, and $13,801 of RMP fees)	$4,605
		Current Use Pesticides and Wastewater Contaminants in Margin Sediment and Water	$128,970
		Pharmaceuticals in Wastewater Data Analysis & Reporting	$30,000
		Non-targeted Analysis of Sediment and Related Studies	$101,000
		Characterizing Unknown PFASs in SF Bay Sediment	$2,500
		Nonylphenol Ethoxylates in Margin Sediments	$2,500
		Total	**$269,575**
2019	$269,575	**TBD**	

Table 7: Steering Committee RMP Budget Summary
as of 6/30/2018

Budget and Current Expenses

Year	Budget	Expended	Balance	Previously Unencumbered	Unencumbered this Period	Balance minus Unencumbered (Remainder)	% Remaining
	$	$	$	$	$		
SEP	**1,170,500**	**761,283**	**409,217**		**0**	**409,217**	**35%**
2018	**3,861,702**	**1,697,518**	**2,164,184**	**0**	**0**	**2,164,184**	**56%**
2017	**3,859,287**	**3,342,078**	**517,209**	**56,787**	**0**	**460,422**	**12%**
2016	**2,941,443**	**2,727,646**	**213,797**	**176,122**	**0**	**37,675**	**1%**
2015	**3,726,649**	**3,475,005**	**251,644**	**218,197**	**0**	**33,447**	**1%**
Grand Total	**15,559,581**	**12,003,530**	**3,556,051**	**451,106**	**0**	**3,104,945**	**20%**

Cash, Set-Asides, and Undesignated Funds as of reporting date

	Item	$	Notes
	Cash on Hand	3,640,565	
	< 2018 A/R & Remaining Interest (see below)	1,051,017	
	Total Assets	**4,691,582**	
	Total Current Liabilities (figures above)	(3,104,945)	
Set Asides	Monitoring Contingency	(50,000)	
	Program Review	(88,179)	
	S&T Monitoring	(592,975)	
	Total Liabilities	**(3,836,099)**	
	Undesignated Funds	**855,483**	RMP SC has set a policy to maintain a minimum balance of $200K of Undesignated Funds

Year	Accounts Receivables & Remaining Interest:	Amount	Anticipated Collections by	Notes
2018	Bank Interest Remaining	3,742	12/31/2018	2018 Budget = $35k. Value shown is expected interest remaining.
	3018.20 San Francisco SE - Municipal	195,039		
	3018.21 San Jose/Santa Clara - Municipal	210,955		
	3018.22 San Mateo - Municipal	59,154		
	3018.29 St. Helena - Municipal	5,994		
	3018.47 Alameda - Stormwater	194,529		
	3018.50 Caltrans - Stormwater	87,771		
	3018.51 Marin - Stormwater	63,516		
	3018.52 San Francisco - Stormwater	44,020		
	3018.62 Benicia Port Terminal, Pier 95 - Dredger*	672		
	3018.63 Brisbane Marina - Dredger*	31,019		
	3018.64 City of Benicia Marina - Dredger*	4,991		
	3018.66 City of Vallejo Municipal Marina-Dredger*	3,281		
	3018.69 Marin Yacht Club - Dredger*	1,777		
	3018.xx All Dredgers (Invoiced in June)	144,557		

* indicates 2016 Stub-Year invoices

SFEI AQUATIC SCIENCE CENTER
4911 Central Ave, Richmond, CA 94804, p: (510) 746-7334, f: (510) 746-7300 www.sfei.org

DATE: July 17, 2018

TO: RMP Steering Committee

FROM: Philip Trowbridge, RMP Manager

RE: RMP Fees for 2020-2021

REQUESTED ACTION

The Steering Committee should confirm the approved fees for 2020 and 2021.

EXPLANATION

RMP fees are set by the Steering Committee (SC) every three years. In November 2017, the Steering Committee set the target fees for 2019, 2020, and 2021 based on an annual increase of 3% per year. The total fees will be split between the different RMP participant groups by the percentages shown in the following table. The new fee schedule does not include Cooling Water participants. The fees for the remaining participants were not increased to cover the lost Cooling Water fees. RMP participants have already been invoiced for 2019 fees.

Participant Group	% of Total	2019	2020	2021
Municipal Wastewater	45.8%	$1,691,450	$1,742,193	$1,794,459
Stormwater	24.5%	$904,815	$931,959	$959,918
Dredgers	18.2%	$672,148	$692,313	$713,082
Industrial Discharges	11.5%	$424,709	$437,450	$450,574
Total	100%	$3,693,121	$3,803,915	$3,918,033
Percent Increase		3%	3%	3%

SFEI AQUATIC SCIENCE CENTER
4911 Central Ave, Richmond, CA 94804, p: (510) 746-7334, f: (510) 746-7300 www.sfei.org

DATE: July 17, 2018

TO: RMP Steering Committee

FROM: Philip Trowbridge, RMP Manager

RE: RMP Special Studies for 2019 and List of Projects Eligible for Supplemental Environmental Project Funding

REQUESTED ACTION

Approve a suite of special studies for 2019. *Study proposals were reviewed and prioritized by the Technical Advisory Committee on 6/14/18.*

Approve revisions to the list of RMP projects eligible for funding as Supplemental Environmental Projects (SEPs).

FISCAL SITUATION

2019 RMP Fees: $861,500 (planned budget for 2019 RMP Special Studies)
AMR[1] Fees: $269,575 (FY19 fees)
Undesignated Funds Balance: $855,483 (as of 7/17/17)
Undesignated SEP[2] Funds Balance: $81,752 (as of 7/17/17)

EXPLANATION

On November 1, 2017, the Steering Committee held a multi-year planning workshop to set priorities and planning budgets for RMP special studies and establish a new Multi-Year Plan. The 2018 multi-year plan is available at: http://www.sfei.org/documents/2018-bay-rmp-multi-year-plan.

[1] Supplemental payments to the RMP by municipal wastewater agencies under Water Board Order R2-2016-0018. This Order established an alternative monitoring requirement (AMR) for municipal wastewater discharges to San Francisco Bay and its tributaries in exchange for a set schedule of increased payments to the RMP.

[2] The Water Board and SFEI entered into an agreement that made the RMP an authorized Supplemental Environmental Project (SEP) funds administrator in October 2015. Therefore, for enforcement actions, parties have the option to direct the penalty to the RMP to implement unfunded RMP projects as SEPs.

In the first half of 2018, RMP staff developed detailed proposals for the study ideas in the multi-year plan. The RMP technical workgroups met between January and June 2018 to review and prioritize the proposals.

On June 14, 2018, the Technical Review Committee (TRC) reviewed all the proposals put forward by the workgroups and recommended a suite of studies for 2019. Table 1 shows their funding recommendations. This table has been modified slightly since the June 14 meeting to account for changes that affect a few of the special studies.

- Line 2. Non-targeted Analysis of Fish and Wildlife. The TRC recommended $25k for this proposal to serve as match for larger external grant to implement the study. The external grant was not awarded, so these funds were removed.
- Line 28. Priority Margin Unit Stormwater PCB Monitoring. The total cost for the project is actually $70k. The PCB Workgroup recommended redirecting $30k from the 2018 Richmond Harbor PCB Study plus another $40k from 2019 funds to implement this project. The TRC recommended using $22k of the unallocated SEP funds plus $18k of core RMP funds to cover the missing $40k. After the TRC, a discharger expressed interest in providing $15k for this project as a SEP, which can take the place of the $18k of core funds. Therefore, the request for core funding has been removed.
- Line 38. The amount of unallocated funds in both core funds and AMR funds was updated. The total amount of unallocated funds is $75k. These funds can be assigned to special studies. There is also $855k of Undesignated Funds that could be allocated to special studies at the discretion of the Steering Committee.

The Steering Committee should review the recommended options from the TRC, make any adjustments it deems warranted based on priorities or allocation of additional funds from reserves, and then approve a suite of special studies for 2019. For reference, Table 2 contains short summaries of all the proposals. The full text of all the proposals are available at: https://www.sfei.org/events/rmp-technical-review-committee-meeting-1.

In addition, the RMP maintains a list of projects that have been vetted by Workgroups and/or the TRC but were not funded. This list of projects is a resource to the Water Board as they negotiate Supplemental Environmental Projects (SEPs). The list is revised annually by removing any projects that are no longer priorities and adding proposed projects that were not funded. The Workgroups and the TRC recommend removing five projects from the list (Table 3). The TRC recommends adding any unfunded projects from Table 1 to the list. The Steering Committee should review these proposed changes to the list and approve a new SEP Study List for 2018.

Table 1: TRC Recommendations for 2019 RMP Special Studies

Revisions since the TRC meeting are shown in blue.

Line	Workgroup	Proposal Name	Funding Request	Core RMP Funds	AMR Funds	Comments/Rank	Add to SEP List?
1	ECWG	Emerging Contaminants Strategy	$70,000		$70,000		
2	ECWG	Non-targeted Analysis of Fish and Wildlife	$25,000		$0	Did not get grant so match is not needed.	
3	ECWG	Contaminants of Emerging Concern in Urban Stormwater	$180,000		$130,000	$130k is for Year 1 of 3.	
4	ECWG	Ethoxylated Surfactants in Ambient Water, Margin Sediment, and Wastewater	$123,000			It would cost $70k for water/wastewater but no margins sediment or CEDEN upload.	Add to SEP List
5	ECWG	Sunscreens in Water and Fish	$50,300				Add to SEP List
6	SPLWG	Small Tributaries Program Management	$40,000	$40,000			
7	SPLWG	Small Tributaries Loading POC Watershed Characterization Reconnaissance Monitoring	$175,000	$125,000		Priority to increase funding if more funds are available.	
8	SPLWG	STLS Regional model development to support trends strategy Part I - Planning	$60,000	$60,000			
9	SPLWG	Advanced Data Analysis, Phase II	$50,000	$50,000			
10	SPLWG	STLS Regional model development to support trends strategy Part II - Beta hydrology model	$50,000				Add to SEP List
11	EEWG	Support for Dredging Project Bioaccumulation Evaluations, Part 2	$48,000			Priority for funding if more funds are available. Possible SEP. Or resolve with NMFS/FWS at no cost?	Add to SEP List
12	EEWG	Exposure and Effects Workgroup Strategy Coordination and Technical Support	$5,000				
13	EEWG	Synthesis of Benthic Community Data in the Whole of San Francisco Bay using the M-AMBI Index Phase II	$29,000				Already on SEP List
14	EEWG	Developing Bioscreening Thresholds for the Glucocorticoid Receptor Cell Assay	$50,000			Defer to later	Add to SEP List
15	EEWG	Efficient extraction of endocrine disruptors from sediments from San Francisco Bay	$18,200			Defer to later	Add to SEP List
16	Nutrients	High-Frequency Moored Sensor Network	$360,810	$250,000		Priority to increase funding if more funds are available. $400k assumed in NMS budget	Add unfunded nutrient studies to SEP List
17	Nutrients	Ship-based Monitoring with USGS	$180,042				
18	Microplastic	Microplastic Strategy	$15,000	$15,000			
19	Microplastic	Microplastic in San Francisco Bay Sport Fish	$110,300		$15,000	For collection and archiving only.	Already on SEP List
20	Microplastic	Microplastic in San Francisco Bay Sport Fish: Add-on Tissue Analysis	$26,000				Already on SEP List
21	Microplastic	Microplastic in San Francisco Bay Sport Fish: Add on Additional Sites	$26,000				Already on SEP List
22	Microplastic	Microplastic in San Francisco Bay Sport Fish: Archive samples for Y2	$10,000				Already on SEP List
23	Sediment	Bay Sediment Conceptual Understanding and Monitoring Strategy	$77,600	$77,600			
24	Sediment	Update of Erosion and Deposition in San Francisco Bay	$77,000	$77,000			
25	Sediment	Workshop on Sediment Screening and Testing Guidelines for Beneficial Reuse of Dredged Sediments	$30,000	$30,000			
26	Sediment	Sediment Bulk Density Study	$30,000			Priority for funding if more funds are available.	Add to SEP List
27	Sediment	Golden Gate Sediment Flux Modeling Study	$45,000				Add to SEP List
28	PCBs	Priority Margin Unit Stormwater PCB Monitoring	$40,000	$0		Fund with $15k SEP & SEP-MMP ($22k) & allocate $30k from UF from the Richmond Hbr Project	
29	PCBs	PCB Strategy Coordination and Technical Support	$10,000	$10,000			
30	PCBs	Shiner Surfperch Priority Margin Unit Survey	$60,000	$0		Fund with SEP MMP ($60k)	
31	Selenium	Selenium Strategy Coordination & Technical Support	$10,000	$10,000			
32	Selenium	North Bay Clam and Water Part I - Monitoring	$75,000	$75,000			
33	Selenium	Sturgeon Muscle Plug Part I - Monitoring	$22,000	$22,000			
34	Selenium	North Bay Clam and Water Part II - Data Management & Reporting	$40,000				Add to SEP List
35	Selenium	Sturgeon Muscle Plug Part II - Data Management & Reporting	$24,000				Add to SEP List
36	**Total**		**$2,242,252**	**$841,600**	**$215,000**		
37	**Available Funding**			**$861,500**	**$270,000**		
38	**Unallocated Funding**			**$19,900**	**$55,000**		

Table 2: Short Descriptions of Proposals for RMP Special Studies in 2019

Workgroup	Study Name	Budget	Summary	Deliverables
Emerging Contaminants	Emerging Contaminants Strategy	$70,000	Annual update of CEC Strategy, including tracking new information, updating the Tiered Framework and Multi-Year Plan. Increasing needs for stakeholder support, coordination of pro bono studies, and development and use of CEC transport model.	Technical assistance to stakeholders; Update and share CEC Strategy; Refine monitoring and science strategy related to Possible Concern contaminants, with particular attention to ecotoxicity data gaps.
Emerging Contaminants	Non-targeted Analysis of Fish and Wildlife	$25,000 (3-year study, total $75,000)	Non-targeted analysis (NTA) is part of the triad of methods the RMP is using to identify and track CECs. This study will leverage a proposal that has been submitted to Sea Grant to fund a three-year study evaluating Bay biota using novel non-targeted analyses. A variety of sport fish will be analyzed to assess the importance of feeding habitats (open water vs shallow margins), spatial location, and trophic status. In addition, apex predators such as cormorants (eggs) and harbor seals (blubber) will be used to assess the potential for biomagnification of these CECs in the food web.	Draft Manuscript & Factsheet (Spring 2021) Final Manuscript and Factsheet (Fall 2021)
Emerging Contaminants	Contaminants of Emerging Concern in Urban Stormwater	$180,000 (2-year study, Y2: $267,000)	Preliminary results from a 2016 RMP Special Study that scanned Bay water samples for contaminants via non-targeted analysis suggest that stormwater has the potential to contain significant levels of potentially harmful contaminants. A two-year study is proposed to provide an intensive and pioneering examination of CECs in urban stormwater. Analysis will include a targeted list of key CECs in urban stormwater developed to probe stormwater-related Coho salmon aquatic toxicity in the Puget Sound region and an additional three classes of emerging contaminants identified as critical stormwater data needs: per and polyfluoroalkyl substances (PFASs), phosphate flame retardants, and ethoxylated surfactants. The first year would include site selection and pilot sample collection and analysis for all four CEC classes, and the second year would focus on collecting a greater number of samples for this Bay Area-wide screening study. If insufficient samples are collected within two years, study may be extended to a third year.	Draft Manuscript and Summary (Spring 2021) Final Manuscript and Summary (Fall 2021)
Emerging Contaminants	Ethoxylated Surfactants in Ambient Water, Margin Sediment, and Wastewater	$123,200	This study will analyze a broad suite of ethoxylated surfactants in three Bay matrices: ambient water, sediment, and wastewater. This study would provide information to help determine whether ethoxylated surfactants should be classified as Moderate Concern contaminants. The data will also guide development of a monitoring and management strategy for this class of contaminants. Investigation of ethoxylated surfactants in the stormwater pathway is proposed by the Contaminants of Emerging Concern in Urban Stormwater study.	Draft Manuscript and Summary (August 2020) Final Manuscript and Summary (January 2021)
Emerging Contaminants	Sunscreens in Bay Area Wastewater Effluent	$50,300	UV sunscreen chemicals are widely used in personal care products (e.g., sunscreens and cosmetics) and commercial products (e.g., paints and plastics). They are discharged to the environment through the washing off of these chemicals during swimming or other outdoor activities, or discharged indirectly via wastewater treatment facilities from showering or bathing activities. These chemicals are also likely to leach from paints and plastics. Several sunscreen chemicals are known to be toxic and can cause endocrine disruption. This study will quantify sunscreens in Bay Area effluents to assess whether they may be a potential concern for the Bay.	Draft technical memorandum (June 2020) Final tehcnical memorandum (September 2020)
Sources Pathways and Loading	Small Tributaries Program Management	$40,000	The goal of the STLS Program over the next few years is to continue to provide information to RMP Stakeholders and the public that directly supports the identification and management of PCBs and Hg sources, concentrations, loads, and the determination of trends in relation to management efforts and beneficial uses in San Francisco Bay. This task is to support the Small Tributaries POC stormwater concentration and loading program through monthly communication with BASMAA program and Water Board representatives, including regular check in phone calls, planning for and development of meeting agendas and materials, preparation of meeting summaries, and monitoring the agenda of and attendance at key external meetings.	Written meeting summaries for each meeting

Sources Pathways and Loading	Small Tributaries Loading POC Watershed Characterization Reconnaissance Monitoring	$175,000	Over past four years, RMP has funded a watershed characterization reconnaissance study to identify high leverage watersheds and subwatersheds for PCBs and Hg sources and to develop a remote sampler method to decrease costs and increase ease of data collection. This proposal is a continuation of that monitoring effort. The study will help gain further knowledge and understanding of PCBs and Hg concentrations and particle ratios in stormwater in areas that have a disproportionately larger area of older urban and industrial land use. It is primarily a field study and the level of effort will be tailored to the amount of budget available.	Draft technical report (December 2019) Final technical report (July 2020)
Sources Pathways and Loading	STLS Regional model development to support trends strategy Part I - Planning	$60,000	The draft STLS Trends Strategy outlines a process to answer the key management question of how loads of pollutants of concern (e.g., PCBs) are changing over time. Progress has been made in trend analysis for individual watersheds, but questions remain as how the loads at the regional scale have and will change as a result of decadal long management actions and in relation to TMDL goals. The draft STLS Trends Strategy identified this question as a priority and developed a multi-year plan of using regional modeling to obtain initial answers by 2021. This proposal is to develop a detailed Modeling Implementation Plan to guide regional modeling effort in next few years, as the implementation of the first year of the multi-year plan.	Draft Modeling Implementation Plan (May 2019) Final Modeling Implementation Plan (July 2019)
Sources Pathways and Loading	Advanced Data Analysis, Phase II	$50,000	Reconnaissance data collected during single storms have provided good evidence to support enhanced management effort in watersheds with high PCB concentrations in water and on sediment particles. However, to date, such data have had only limited value for prioritization of management effort in watersheds exhibiting moderate or lower concentrations. This project proposes to enact the second phase of development and application of enhanced ranking and fingerprinting methods for the spatial prioritization and identification of watersheds, sub-watersheds, and PCBs source areas. The outcome of this proposal will be a finalized stepwise methodology and application of that methodology to existing stormwater datasets to help prioritize areas for enhanced management or further sampling.	Draft technical report (May 2019) Final technical report (November 2019)
Sources Pathways and Loading	STLS Regional model development to support trends strategy Part II - Beta hydrology model	$50,000	Following the approval of the Modeling Implementation Plan, a phased approach will be employed to develop the regional model, starting with hydrology, followed by suspended sediment, and then POCs. This proposal represents the first phase of the model development and will cover hydrology only. Initiating hydrology model in 2019 will help provide insights on early lessons learned and inform refinement and modification of the scope of work for 2020. The hydrology model will be used as basis for sediment and Pollutants of Concern (POC) modeling in the subsequent years.	Draft Model Development Report (May 2020) Final Model Development Report (June 2020)
Exposure and Effects	Support for Dredging Project Bioaccumulation Evaluations, Part 2	$48,000	The Dredged Material Management Office (DMMO) is responsible for approving millions of cubic yards of routine dredging projects in the San Francisco Bay to maintain safe navigation. Dredged sediment and the remaining residual sediment are evaluated to ensure projects do not produce adverse environmental impacts. We propose to support these sediment bioaccumulation evaluations through two targeted studies. The first is to review all the PCB bioaccumulation test results to assess the performance of current bioaccumulation testing trigger thresholds. The results of this review may be used to support reassessing total PCB bioaccumulation trigger threshold. The second is to review and recommend a standard set of values for bioaccumulation modeling. This information would ensure that bioaccumulation evaluations use the best available science and are consistent within the region. The recommendations from this study will save dredgers and regulators time and money by improving the efficiency and consistency of dredging project evaluations.	Kickoff Meeting (October 2018) Draft Report (April 2019) Final Report (August 2019)
Exposure and Effects	Exposure and Effects Workgroup Strategy Coordination and Technical Support	$5,000	Develop an updated multi-year plan for the Exposure and Effects Workgroup. Funds for this task would enable SFEI to continue to consult with the EEWG regarding plans for the next iteration of Exposure and Effects activities that can inform management decisions in San Francisco Bay. Funds would also support small-scale synthesis of information that is needed to support these discussions.	Updated Multi-Year Plan (June 2019)

Exposure and Effects	Synthesis of Benthic Community Data in the Whole of San Francisco Bay using the M-AMBI Index Phase II	$29,000	Evaluation of macrobenthic community condition is an integral component of sediment quality assessment, and is a required element of the SQO assessment framework. We do not, at present, have robust and validated tools to interpret macrobenthic community health in the mesohaline, oligohaline, and tidal fresh water habitats of San Francisco Bay Estuary (i.e., 50% of the whole system). Consequently, SQO assessments showing 52% of San Francisco Bay with poor benthic condition may be inaccurate and misrepresenting the apparent extent of contaminant-impacted sediments. We propose to update the SQO assessments of San Francisco Bay by incorporating a newly revised version of the M-AMBI (Multivariate AZTI Marine Biotic Index) benthic index designed to work in multiple estuarine habitats across the United States, including the polyhaline, mesohaline, and oligohaline habitats in the San Francisco Bay Estuary. As part of the Phase I portion of this study (currently funded), we are calibrating the M-AMBI across the estuary' s different habitats. Once this work is completed, we will be able to integrate the M-AMBI scores into the SQO assessment framework and recalculate SQO assessments (M-AMBI plus existing chemistry and toxicity tools) for the whole estuary. This will allow for the first time, a robust SQO assessment of the potential impacts of toxic, sediment-bound chemicals on the macrobenthic resources of the San Francisco Bay Estuary.	Final report summarizing findings, including R scripts, Phase I MAMBI calibration, and full SQO assessments of 2008-2012 RMP samples (December 2019)
Exposure and Effects	Developing Bioscreening Thresholds for the Glucocorticoid Receptor Cell Assay	$50,000	Contaminants of emerging concern (CECs) exerting endocrine disrupting properties present a major concern for the health of coastal ecosystems. While they are typically found at very low concentrations (picogram to nanogram per liter range), they can act jointly via a common mode of action leading to adverse effects on aquatic organisms. This issue cannot be fully addressed using the current chemical-by-chemical risk assessment approach, which targets known chemicals and relies on chemicalspecific toxicity thresholds. Moreover, traditional toxicity endpoints (e.g. growth and survival) do not represent the variety of other relevant sublethal effects that can be induced by prolonged exposure to low levels of CECs, such as impaired tissue development, immune functions, behavior, or reproduction. In vitro cell assays have been proposed as rapid bioanalytical screening tools to detect and integrate the response of multiple known and unknown CECs, thus providing the potential for a more comprehensive assessment approach. But before cell assays can be incorporated in monitoring programs, it is essential to establish the quantitative linkage between key cellular events and organismal responses, a key component in developing a robust interpretive framework for bioanalytical screening results. Due to the lack of relevant ecotoxicological data for many CECs, such linkage has only been characterized for a few classes of CECs (e.g. estrogenic chemicals). This project aims to advance the role of cell assays in environmental assessments by developing bioanalytical screening thresholds associated with relevant toxicity endpoints for a group of understudied CECs known as steroidal anti-inflammatory drugs or glucocorticoids (GCs). This bioanalytical interpretive framework will help water quality managers in their task to protect beneficial uses of aquatic resources by identifying and prioritizing CECs that are most likely to impact aquatic life.	Year 1 funding will be used to complete Task 2: evaluation of GCs impact. The deliverable will be a progress report summarizing the most reliable endpoints impacted by GCs in Menidia. (June 2020)
Exposure and Effects	Efficient extraction of endocrine disruptors from sediments from San Francisco Bay	$18,200	Our Phase 2 study suggested that there was low level of estrogenic activity in San Francisco Bay waters. However, we were not able to clearly determine if sediments were contaminated or not, as the method employed to extract chemicals from the sediments may not have been the best. The current study will address this gap in our knowledge and to begin to develop a method that can be standardized for adequate monitoring strategies in the bay. Results from this study will begin to enable managers to determine whether or not additional cleanup is necessary for treated effluents that are disposed into sensitive estuarine environments. This work will not only be important for California, but also for other states that border marine environments and which may still be using old technologies for water treatment and discharge. The overall objective of this effort is to develop a method to adequately extract hormone mimics from bay sediments. This targeted study will have two objectives: (1) To develop a robust extraction method for endocrine disruptors that may be bound to sediments obtained from San Francisco Bay (2) To test the extracts by two in vitro assays: InVitrogen estrogen receptor (ER) transactivation assay and glucocorticoid receptor (GR) transactivation assay.	Final Report (December 2019)

Nutrients	High Frequency Moored Sensor Network: data analysis, interpretation, and maintenance	$360,810	High frequency water quality data will be collected through a network of in situ moored sensors in Lower South Bay and South Bay. Instruments measure multiple parameters, including specific conductance (or salinity), temperature, depth, dissolved oxygen, turbidity, chlorophyll-a, fDOM, and phycocyanin, and data is used to assess condition, inform mechanistic investigations of factors regulating water quality, and calibrate/validate water quality models. Funding will be used for mooring maintenance, data management (including QA/QC), and data interpretation.	Refined / cleaned dataset for additional year of data (multiple parameters), and application of enhanced QAQC protocols to additional parameters (e.g., chl-a). Several technical reports or progress reports, developed based on mooring data. Data report summarizing results from 2017 and 2018 South Bay shoal mooring and Suisun Bay. Phase II of Mooring Program: proposed structure for next phase of mooring work (stations, analytes), and initials steps implementing that new structure (within time/budget constraints)
Nutrients	Ship-based Monitoring for Nutrient-Related Parameters with USGS	$180,042	Discrete samples and in-situ sensor-based measurements will be collected during USGS cruises in San Francisco Bay aboard the R/V Peterson on ~12 full-bay cruises and an additional ~12 South Bay cruises (Figure 1), with a SFEI staffer participating as a field technician during cruises. The overall program continues USGS' long-term water quality studies in San Francisco Bay, and is jointly funded by USGS, the RMP, and the NMS. Data from the program play critical roles in nearly all of NMS' activities, including condition assessment, hydrodynamic and biogeochemical model calibration and validation, and improved understanding of nutrient behavior and nutrient-related effects within SFB.	Nutrient and chl-a data will be made publicly available through USGS's website. Datasets for toxins, phytoplankton microscopy, and pigments will also be made publicly available through the NMS. Results will be summarized in the NMS Annual Report (funded through other projects). Similar to past years, data will be used within numerous other NMS activities(e.g., model calibration, condition assessment, assessment framework development).
Microplastics	Microplastic in San Francisco Bay Sport Fish	$110,300 (+$26,000 tissue analysis, +$26,000 third site, +$10,000 archiving)	With external funding from the Moore Foundation and the RMP, SFEI has just completed the first year of a two-year study to characterize microplastic in San Francisco Bay. The project will provide information to address many of the management questions articulated in the RMP Microplastic Strategy. A key element that was not included in the Moore project was the characterization of microplastic in sport fish. Sport fish are an important food source to humans and Bay wildlife and are integrators of contaminants present in Bay water, sediment, and prey fish. In 2019, as part of RMP Status and Trends monitoring, sport fish will be collected, and analyzed for a suite of contaminants. This project proposes to augment the existing RMP efforts by including microplastic analyses. Shiner surfperch and striped bass from up to two sites will analyzed for microplastics in the gut. Optional add-on studies includes analyzing for microplastics in the muscle tissue in a subset of the fish samples and gut analysis of fish samples from a third site.	Manuscript (Summer 2020) RMP Sport Fish Report (Summer 2020)
Sediment	Bay Sediment Conceptual Understanding and Monitoring Strategy	$77,600	In fall 2016, the RMP provided $50,000 toward an EPA-funded project titled Healthy Watersheds Resilient Baylands (HWRB). The RMP funds are for the development of a sediment monitoring strategy for addressing key data gaps related to the transport of sediment to and within the Bay. Since developing the scope of work for the HWRB project, there has been a growing focus on sediment monitoring in the Bay that has led to a reevaluation of the necessary components of the sediment monitoring strategy development effort. Specifically, there needs to be a conceptual understanding of Bay sediment dynamics that can be used to develop monitoring and modeling priorities. There also needs to be close coordination with the newly-formed RMP Sediment Workgroup and other regional efforts focused on Bay sediment monitoring, and a stand-alone sediment monitoring strategy that is available for use by the RMP and other partner organizations sooner than the completion of the HWRB project. There should also be a presentation of the sediment monitoring strategy to the RMP Sediment Workgroup and key stakeholders. This funding request is for budget to support these additional project components.	Draft Conceptual Understanding of Bay Sediment Dynamics & Sediment Monitoring Strategy (May 2019) Final Conceptual Understanding of Bay Sediment Dynamics & Sediment Monitoring Strategy (August 2019) Presentation of Conceptual Understanding and Strategy to RMP Sediment Workgroup (October 2019)

Sediment	Update of Erosion and Deposition in San Francisco Bay	$77,000	In 2014 and 2015 the Ocean Protection Council (OPC) contracted for bathymetric surveys of large portions of San Francisco Bay. This data along with recent NOAA, USGS, and California State University Monterey Bay surveys can now be combined to create a revised bathymetric bathymetric Digital Elevation Model (DEM) of the whole of San Francisco Bay (South Bay, Central Bay, San Pablo Bay, and Suisun Bay). Analysis of these surveys and comparison with the USGS DEMs of earlier surveys will provide an update on the quantities and patterns of erosion and accretion in the Bay over the past 25 to 35 years. Such information can be used to assess how the Bay has responded to changes in sediment supply from the Delta and tributaries and provide managers with data for making decisions on a variety of issues including exposure of legacy contaminated sediment and strategies for beneficial dredge disposal.	Composite DEM for 2014-2015 (July 2020) Draft Report (July 2020) Final Report (October 2020)
Sediment	Workshop on Sediment Screening and Testing Guidelines for Beneficial Reuse of Dredged Sediments	$30,000	The San Francisco Bay Regional Water Quality Control Board has guidelines for chemical testing requirements and evaluation of test results for the placement of dredge materials in beneficial reuse environments, such as wetland restoration (SFBWRCB. 2014). These guidelines sometimes prevent dredged sediments from the Bay and flood control channels from being beneficially reused despite the fact that there is an urgent need for sediment for wetland restoration around the Bay. The purpose of this study is to organize a workshop with technical experts and stakeholders to discuss whether the current approach to screening contaminants in dredged sediments is too protective, not protective enough, or just right. The deliverable will be a workshop summary that will distill the findings relative to the charge questions and recommendations to the Water Board regarding revisions to the Sediment Screening and Testing Guidelines.	Workshop (May 2019) Workshop Summary (Sep 2019)
Sediment	Sediment Bulk Density Study	$30,000	The definition of sediment bulk density and the conversion between sediment bulk mass to bulk volume is an important step in many sediment calculations. It is used in dredging operations, sediment modeling studies, in the design of wetland restoration projects. The proposal is to create guidance on the definition of bulk density for use in San Francisco Bay projects, to provide typical values for different environments, and protocols for measuring and reporting bulk density in the future.	
Sediment	Golden Gate Sediment Flux Modeling Study	$45,000	The U.S. Geological Survey (USGS) measured sediment fluxes through the Golden Gate during complete tidal cycles in March and June 2016 and February 2017. The sediment flux measurements in February 2017 showed a greater sediment flux into San Francisco Bay on flood tide than the flux out on the preceding ebb tide. USGS hypothesized that this result occurred because the measurements were made on the falling limb of the hydrograph and that during peak outflows the sediment flux out was greater than the flux in. This study proposes to simulate the sediment flux across the February 2017 high flow period, validate the model-predicted sediment flux using the one tidal cycle of flux observations collected by USGS, and then compute the total predicted sediment flux through the Golden Gate over a 3-month period. The primary motivation is to understand why the measured sediment flux back into the Bay during the observation period was greater than the flux out, and whether this is related to being on the tail end of the sediment pulse. The model simulations can also be used to assist in developing surrogate measurements of sediment flux at the Golden Gate that are critical for understanding the overall sediment mass balance in San Francisco Bay. The predicted sediment flux at the Golden Gate will be compared to observed parameters such as suspended sediment concentration (SSC) at Alcatraz or Sacramento-San Joaquin Delta (Delta) outflow to develop these relationships. Predicted sediment fluxes between each subembayment will also be calculated from this simulation to inform calculation of sediment fluxes within the Bay.	Technical Memorandum (June 2019)
PCBs	Priority Margin Unit Stormwater PCB Monitoring	$40,000	This proposed study would yield valuable information on PCB concentrations and particle ratios in stormwater in two Priority Margin Unit (PMU) watersheds. The study areas include the major subwatersheds draining into the Emeryville Crescent, and one subwatershed draining into San Leandro Bay. The subwatershed draining into San Leandro Bay is downstream of a recently remediated hotspot, the former General Electric (GE) transformer and electrical equipment facility, where PCB contamination was severe. The goals of the study are to better estimate current PCB loads into these PMUs (a critical component of the PMU mass budgets) and to support tracking of the effectiveness of the major remediation action on the GE property. Sampling will be completed over two years, as storms allow.	Technical report that may be stand-alone or included in the POC Reconnaissance Report (Oct-Jan 2020)
PCBs	PCB Strategy Coordination and Technical Support	$10,000	The 2014 update of the PCB Strategy called for a multi-year effort to implement the recommendations of the PCB Synthesis Report (Davis et al. 2014) pertaining to: 1. identifying margin units that are high priorities for management and monitoring, 2. development of conceptual models and mass budgets for margin units downstream of watersheds where management actions will occur, and 3. monitoring in these units as a performance measure. A thorough and thoughtful planning effort is warranted given the large expenditures of funding and effort that will be needed to implement management actions to reduce PCB loads from urban stormwater. The goal of RMP PCB Strategy work over the next few years is to inform the review and possible revision of the PCB TMDL and the reissuance of the Municipal Regional Permit for Stormwater (MRP), both of which are tentatively scheduled to occur in 2020.	Updated Multi-Year Plan (June 2019)

PCBs	Shiner Surfperch Priority Margin Unit Survey	$60,000	Conceptual site models for PCBs in priority margin units have been developed for the Emeryville Crescent and San Leandro Bay. The San Leandro Bay model was supported by an intensive field study. These conceptual site models identified shiner surfperch as a crucial indicator of impairment in these areas, due to their explicit inclusion as an indicator species in the TMDL, their importance as a sport fish species, their tendency to accumulate high concentrations, their site fidelity, and other factors. The conceptual site models recommend periodic monitoring of shiner surfperch to track trends in the PMUs, and as the ultimate indicator of progress in reduction of impairment. Shiner surfperch and other sport fish species will be monitored in 2019 as part of RMP Status and Trends (S&T) monitoring. A coordinated sampling of PCBs in shiner surfperch in four PMUs is proposed as an add-on to the 2019 S&T sport fish sampling. This coordination will yield significant savings in data management and reporting, because these results can be easily added to the S&T activities with negligible additional cost. In addition, a dataset for shiner surfperch will be obtained that is directly comparable across the four PMUs and the five locations that are sampled in S&T.	Section in report on RMP S&T Sport Fish Sampling (Draft by December 2020, Final by February 2021)
Selenium	Selenium Strategy Coordination & Technical Support	$10,000	These funds will support SFEI coordination and technical support for workgroup activities and continuing development of the Selenium Strategy.	Selenium workgroup meeting
Selenium	North Bay Clam and Water Part I - Monitoring	$75,000	Following the development of the North Bay Selenium TMDL, the San Franciso Bay Water Board asked the Selenium Workgroup to develop a long-term monitoring design for North Bay. The goal of this proposal Concurrent Potamocorbula amurensis and water samples will be collected from two USGS long-term clam monitoring stations in Susiun Bay in July-September 2019 and Decmeber 2019-February 2020. These two sampling periods precede (1) the fall sturgeon muscle plug study and (2) the sturgeon pre-spawning period, when reproductive females are particularly sensitive to selenium toxicity. Clam concentrations collected during these preceding months will (1) inform the linkage between dietary selenium patterns and observed sturgeon tissue selenium concentrations, and (2) provide information about selenium exposure patterns that can inform expectations of sturgeon selenium concentrations during the sensitive pre-spawning period when sturgeon will not be sampled directly. Composite clam samples will be collected at each site each month and analyzed for total selenium. A single grab sample will be collected at each site each month, and analyzed for dissolved, particulate, and total selenium, as well as TSS, TOC, and chlorophyll a. Samples will be analyzed by the laboratory selected during the selenium laboratory intercomparison study.	Data tables available internally. Key results will be presented at the 2020 Selenium Workgroup meeting.

Selenium	Sturgeon Muscle Plug Part I - Monitoring	$22,000	In March 2016, the State Water Resources Control Board approved a Selenium TMDL for North San Francisco Bay, which established a white sturgeon muscle tissue target of 11.3 ug/g dry weight as a basis for evaluating impairment. From 2014-2017, the RMP conducted annual monitoring of selenium in sturgeon muscle plug tissue, through a collaboration with the California Department of Fish and Wildlife (CDFW) and other partners. Power analyses indicate that long-term monitoring of 60 samples per year at a biennial frequency is needed to detect long-term trends driven by changes in environmental selenium sources within a 20 year period. Selenium monitoring in sturgeon was last conducted in 2017, and is not planned for 2018. This study proposes to continue this sampling in 2019, to continue tracking condition relative to the TMDL target and to evaluate long-term trends. Muscle plugs will be collected in August-October 2019 from 60 sturgeon collected during the CDFW sturgeon population study in North Bay. Samples will be analyzed by the laboratory selected during the selenium laboratory intercomparison study. Funding for data management and reporting is requested and prioritized separately.	Data tables available internally. Key results will be presented at the 2020 Selenium Workgroup meeting.
Selenium	North Bay Clam and Water Part II - Data Management & Reporting	$40,000	This study would fund data management and reporting for the clam and water data collected in 2019 (see proposal above). This report will present key results and interpretation of the data collected during this first year of sampling following the North Bay long-term selenium monitoring design.	Draft Report (Fall 2020) Final Report (Winter 2020)
Selenium	Sturgeon Muscle Plug Part II - Data Management & Reporting	$24,000	This study would fund data management and reporting for the sturgeon muscle plug data collected in 2019 (see proposal above).	Draft Report (Fall 2020) Final Report (Winter 2020)

Version: 7/19/17 SC approved, with proposed deletions shown

Table 3: List of RMP Projects Eligible for Supplemental Environmental Project Funding

In the following table, the proposed projects are grouped into the following categories:

- Projects that have been reviewed by a RMP workgroup, the Technical Review Committee, and/or Nutrient Management Strategy Steering Committee
- Additional Project Ideas from RMP staff

Project	Estimated Budget Range	Nexus Keywords	Oversight Group	Year Recommended
Projects that have been reviewed by a RMP workgroup and the Technical Review Committee				
Determining protective dissolved oxygen levels for fish in creeks and sloughs of Lower South Bay	$50,000-$180,000	Nutrients, Fish Habitat, South Bay	NMS	FY2018 (first proposed in FY2017, but scope updated for FY2018)
~~Monitoring Water Quality in the South Bay Eastern Shoals with High-Frequency Moored and Boat-Based Sensors~~ **Project Underway with non-SEP Funding**	~~$70,000-$250,000~~	~~Nutrients, South Bay~~	~~NMS~~	~~FY2018~~
Monitoring Bisphenol Compounds in Stormwater and Wastewater Pathways	$40,000-$80,000	Emerging Contaminants, Stormwater and Wastewater Pathways	ECWG TRC	2017
Identification and Pilot Monitoring of High-Priority Current Use Agricultural Pesticides in Region 2	$75,000-$125,000	Pesticides, North Bay	ECWG TRC	2014

Characterizing PFASs in San Francisco Bay Seals and Sediment	$80,000-$160,000	Emerging Contaminants, South Bay	ECWG TRC	2018
~~Nonylphenol Ethoxylates in Bay Margin Sediment~~ **Project Superseded by New Proposal**	~~$50,000-$75,000~~	~~Emerging Contaminants, South Bay~~	~~ECWG TRC~~	~~2018~~
Azo Dyes in Bay Margin Sediments	$50,000-$75,000	Emerging Contaminants, South Bay	ECWG TRC	2018
Monitoring Microplastics in San Francisco Bay Sport Fish **Budget & Scope Updated Based on New Proposal**	$50,000-$200,000	Microplastic, Sport Fish, Whole Bay Region	MPWG TRC	2019
Develop a Statistical Model for Trends Evaluation	$35,000-$50,000	Stormwater flows, pollutant loads, PCBs	STLS SPLWG TRC	2018
Bay Area Stream Gage Monitoring Needs Assessment and Feasibility Analysis	1-yr design: $179,000-$311,000 2-yr design: $243,000-$467,000	Stormwater flows, pollutant loads, model calibration	STLS SPLWG TRC	2017
Expanded Pilot Testing of Remote Stormwater Sampling Devices	Year 1: $100,000-200,000	PCBs, methods development for lowered stormwater	STLS SPLWG TRC	2017

	Year 2: $70,000-140,000	sampling costs		
Update Land Use Maps for the San Francisco Bay Region	$95,000-$170,000	Basic data for many aspects of loads estimation, planning, management and policy decisions	STLS SPLWG TRC	2017
Assessment of the Benthic Community in San Francisco Bay Using New Analytical Tools	$30,000-$50,000	Sediment Toxicity, Benthic Community, Whole Bay region	EEWG TRC	2018
Richmond Harbor PCB Conceptual Model Development	$50,000-$100,000	PCBs, Central Bay	PCB WG TRC	2018
~~Synthesis of PCB Measurements in Dredged Sediments Compiled in the DMMO Database~~ **Project Underway with SEP Funding**	~~$30,000-$50,000~~	~~PCBs, Whole Bay region~~	~~PCB WG~~	~~2018~~
PCB Priority Margin Unit Field Study in the Emeryville Crescent	$100,000-$200,000	PCB, Margin Areas	PCB WG TRC	2017
PCB Priority Margin Unit Field Study in Steinberger Slough	$100,000-$200,000	PCB, Margin Areas	PCB WG TRC	2017
~~PCB Study of San Leandro Bay Margin Area, Phase 3~~ **Project is Not a WG Priority**	~~$20,000-$100,000~~	~~PCB, Margin Areas~~	~~PCB WG TRC~~	~~2017~~

Margins Monitoring for PCBs in Prey Fish	$150,000-$250,000	PCB, Margin Areas	PCB WG TRC	2017
Selenium South Bay Synthesis and Food Web Sampling	$100,000-$200,000	Selenium, South Bay	Se WG TRC	2017
~~Improved Lower South Bay Suspended-Sediment Flux Measurements~~ **Project Underway with SEP Funding**	~~$75,000-$275,000~~	~~Sediment loads, Wetland restoration, South Bay~~	~~TRC~~	~~2018~~
Additional Project Ideas				
Mallard Island Loads Study (Proposal of potential joint interest between Region 2 and Region 5) (Note, this concept has not received complete STLS review and has not been discussed with the Delta RMP)	$140,00-$190,000	PCBs, Hg, Se, Pesticides microplastics, CECs, Bay mass balance	STLS SPLWG ECWG TRC Delta RMP	2017
Evaluating Emerging Contaminants in Reverse Osmosis Concentrate	$50,000-$200,000	Emerging Contaminants	ECWG TRC	2018

Detailed Project Descriptions

Projects are grouped by oversight workgroup

Nutrient Management Strategy

Determining protective dissolved oxygen levels for fish in creeks and sloughs of Lower South Bay.
Over the past 3 years, SFEI has been monitoring DO and other parameters throughout LSB. Low dissolved oxygen levels commonly occur in LSB sloughs for short periods of time (~hours). Although tidal transport plays an important role in moving around water masses with very different dissolved oxygen levels, the actual causes of the low DO excursions in LSB sloughs are currently poorly understood. Extensive fish survey data is also available for areas of Lower South Bay, collected by UC Davis researchers over the past 3+ years, funded initially by the South Bay Salt Pond Restoration Program and more recently by the San Jose-Santa Clara Regional Wastewater Facility. These two datasets, although collected as part of unrelated studies, nonetheless provide complementary information about DO levels and fish populations in Lower South Bay.

In April 2017 SFEI held an expert workshop to launch an effort to develop the scientific foundation to evaluate DO-related habitat quality in Lower South Bay (LSB), and in particular in its sloughs and creeks. During the lead-up to and during the workshop, the SFEI and UC Davis datasets served as the basis for developing conceptual models for spatial and temporal variability of dissolved oxygen concentrations and fish abundance and assemblage. The workshop yielded valuable input that is guiding the current round of work.

This project would be a continuation of the FY17 workshop project. The low to intermediate funding level ($50k-$100k) would support additional DO and fish related data analysis by UC Davis and SFEI, and also support reconvening a subset of the the external experts in Fall 2017 to comment on and finalize the technical report. The high cost project ($180k) would include the expanded interpretation and follow-up technical team meeting, and also allow for a modest level of additional data collection, either targeted additional fish/benthos sampling, or collection of additional DO data to maximize the alignment between DO data spatial/temporal coverage and fish survey data.

~~Monitoring water quality in the South Bay eastern shoals with high-frequency moored sensors and boat-based sensors~~
~~Past studies have shown that South Bay's broad shoals are areas where phytoplankton biomass commonly reaches much greater levels than in the adjacent deep channel, due in part to the shallower water column and relatively higher light levels. However, measurements along the shoals are not part of routine monitoring, limiting our ability to accurately assess condition, estimate gross primary production, and calibrate models. This study will use a combination of sensors on a fixed mooring and on moving vessels to obtain high resolution water quality data in the shoal areas.~~

~~One component of the project will be deploying a water quality mooring along South Bay's eastern shoal, in collaboration with researchers from USGS. The mooring will be deployed for two 4-month windows (Jan-Apr; Jul-Oct) with maintenance trips scheduled every 3-4 weeks. To minimize cost, we will, as much as possible, use instrumentation and deployment equipment already owned by the two groups. The cost for this part of the project would be $80k-$100k.~~

~~Another component of the project will be high-resolution biogeochemical mapping along South Bay shoals. Work will include 7-15 survey days, timed to coincide with key periods of interest during mooring deployments. The cost for this part of the project would be $70k-$150k.~~

~~The two components of the project can be implemented separately or together depending on the amount of funding available. The full range of costs is $70k-$250k.~~

Emerging Contaminants Workgroup

Monitoring Bisphenol Compounds in Stormwater and Wastewater Pathways
Bisphenols are a class of widely used endocrine-disrupting compounds, commonly found in polycarbonate plastics and epoxy resins, and frequently detected in many environmental matrices. Bisphenol A (BPA) is a high-production volume compound, and use volumes of several BPA alternatives have increased in recent years. Previous monitoring for bisphenols in the Bay has been limited to BPA, using methods with detection limits that are above a current toxicity threshold for BPA, and has evaluated only ambient Bay water and effluent at a single wastewater treatment plant. In 2016, the RMP funded a 2017 study to analyze BPA and 15 alternative BPA compounds in ambient Bay water, using a novel analytical method with lowered detection limits and the broadest assessment of

bisphenols available. However, bisphenols and alternative bisphenol compounds in potential pathways remains a significant data gap. Worldwide, wastewater effluent has been identified as a dominant pathway for bisphenols to enter surface waters, and due to the ubiquity of bisphenol compounds in use and high concentrations of bisphenols in urban litter, urban stormwater runoff likely contributes an additional source of bisphenols entering the Bay. Together with the ambient Bay water data, data about bisphenol and alternative bisphenol concentrations in Bay pathways will help to place bisphenols within the RMP's tiered risk framework. This information would play an important role in understanding the causes of observed concentrations in ambient Bay water, and identifying areas where potential management actions can be focused to control levels of bisphenols and alternative bisphenol compounds entering the Bay.

This study would monitor BPA and 15 alternative BPA compounds in stormwater and wastewater. The total cost for monitoring stormwater and wastewater is estimated to cost $40k. Monitoring 8 sites for stormwater is estimated to cost about $13k, while monitoring 5 wastewater treatment plants for wastewater is estimated to cost about $8.5k. Data Management and Reporting is estimated to cost $18.5k. The budget for this project can be scaled up or down based on the number of matrices and samples analyzed.

Identification and Pilot Monitoring of High-Priority Current Use Agricultural Pesticides in Region 2

The RMP's CEC Strategy uses a tiered risk framework to rank the relative concern associated with emerging contaminants in the Bay. Current use pesticides (CUPs) are listed in Tier I (Possible Concern), excluding fipronil and pyrethroids (Moderate Concern and Low Concern, respectively). Relatively few current use pesticides have been monitored in the Bay; the CEC Strategy suggests screening level monitoring efforts for Tier I contaminant families to determine their concentration in ambient Bay water and sediment, effluent, runoff, and biota.

There are over 1,000 CUPs in existence; therefore, prioritizing which to monitor in the Bay is essential. The Department of Pesticide Regulation has developed a tool that combines spatially-explicit use data for agricultural pesticides with USEPA aquatic life benchmarks to provide a systematic prioritization of potential risks to wildlife. (Urban use data is not available at this spatial resolution.)

We propose employing this tool to prioritize and map agricultural pesticide use in Region 2. Pilot water and sediment monitoring can then be conducted within the tidally-influenced portion of a major agricultural tributary, and within the Bay near the point of discharge

and within the relevant embayment. A previous RMP pesticide mapping exercise indicated the majority of agricultural pesticides were applied in Napa County, suggesting monitoring be focused on the Napa River and subsequently San Pablo Bay.
A key consideration is the loads of pesticides potentially discharged via the Napa River relative to those discharged via the Sacramento-San Joaquin River Delta. If the same pesticides are used in both regions, the Napa River might be considered a relatively minor pathway for pesticides to enter the Bay. However, a comparison of both the previous RMP pesticide mapping exercise and a more recent prioritization for the agriculturally-similar Russian River watershed with DPR's current prioritization for pesticides potentially discharged to the Bay via the Delta suggests that while there is some overlap, there are also notable differences in the types of pesticides used in the Napa River and Delta watersheds. These usage differences suggest the Napa River may contribute different types and levels of pesticides to the Bay, with a unique array of potential risks that should be evaluated.

Characterizing PFASs in SF Bay Seals and Sediment

Perfluoroalkyl and polyfluoroalkyl substances (PFASs) are an important class of chemicals that are widely used in industrial, commercial and residential applications. They are of concern because they are highly persistent and many are associated with a myriad of health effects. Some of the highest concentrations in the world of perfluorooctane sulfonate (PFOS) have been observed in Bay seals and cormorants. The RMP routinely monitors for about a dozen of the ~3,000 PFASs in use today. This study will use recently developed methods to provide a more comprehensive picture of the complete suite of PFASs in sediment and seals from the Lower South Bay. This is of critical importance as manufacturers phase out the use of PFOS and perfluorooctanoic acid (PFOA) in favor of alternative PFASs. Very little is known about these alternatives – both in terms of chemical structure and production volumes. Hence this study will produce a unique dataset for identifying the presence of these alternatives. Use of this novel method will be critical for tracking the use of this very pervasive and toxic class of compounds.

~~Nonylphenol Ethoxylates in Margin Sediments~~

~~Nonylphenol ethoxylates (NPEs) and related compounds are nonionic surfactants that were once widely used in industrial and household laundry detergents; key NPEs are ubiquitously detected in Bay water, sediment, and bivalve samples. Currently, these compounds are classified as Moderate Concern (Tier III) compounds in the RMP Strategy, and it has been suggested that concentrations of these compounds may be decreasing from voluntary phase-out of NPEs from laundry detergents. However, there are many other potential sources of NPEs. Moreover, preliminary results from a 2016 RMP special study suggest that Bay samples~~

~~contain a broad, complex mixture of NPEs and related compounds, including more ethoxylated NPEs that have not been targeted for monitoring in the Bay. This proposed study will analyze archive sediments from the Lower South Bay margin areas for a broad suite of NPEs and related compounds. These margin sites receive considerable wastewater and stormwater discharges, and are more likely to reflect contamination of current uses of chemicals. Analysis of NPEs and related compounds will provide information to help determine whether NPEs should continue to be classified as Tier III contaminants, and additional information about the influence of ongoing sources of contamination, including effluent and runoff.~~

Azo Dyes in Bay Margin Sediments

This proposed SEP project will focus on a targeted chemical analysis of dyes on the margin sediment samples that are being examined via non-targeted analysis. Duke University has recently developed a method that covers a range of selected azobenzene-based disperse dye compounds, partly in response to recent detections of dyes as contaminants in household dust. Dr. Ferguson of Duke University has found these dyes at high ppb concentrations in house dust, similar to levels measured for ubiquitous brominated flame retardants. Despite ubiquitous use in consumer products, there is little information regarding the presence of disperse dyes in the environment. Of note, some of these dye compounds and their breakdown products have mutagenic properties, suggesting ecotoxicity concerns. In addition, azo dyes have been identified as potential candidate chemicals in multiple product categories in California's Safer Consumer Products Priority Product Work Plan. There is a notable dearth of data on environmental levels of these compounds.

Evaluating Emerging Contaminants in RO Concentrate

Concerns over water supply and water scarcity have led to a growing interest among regional water managers to develop local water supplies, including increased recycled water use. However, the advanced treatment methods needed to purify wastewater effluent for reuse produce concentrated waste streams. Reverse osmosis concentrate (ROC), the concentrated waste stream produced when wastewater is treated by reverse osmosis, has levels of salts and contaminants about six times higher than typical wastewater effluent. Safe, cost-effective disposal of this concentrate currently represents a significant barrier to the wider adoption of this technology.

This proposed study would evaluate the effects of ROC treatment processes on a wide range of chemicals using non-targeted analysis techniques. The Santa Clara Valley Water District has funded a project to develop a Reverse Osmosis Concentrate Management Plan. One component of this project is a pilot study of an advanced oxidation process unit and engineered open-water treatment cells for the removal of contaminants in ROC. We are proposing to conduct a novel non-targeted analyses to the pilot study to screen for the

occurrence and transformation of a broad range of chemical classes before and after these treatment processes. Results of the study will provide valuable information about the chemical processes occurring during these treatment processes and the fate of compound classes that are not being monitored for the original study.

Microplastics Workgroup

Monitoring Microplastics in San Francisco Bay Sport Fish

Plastic has become a way of life in modern society. Annual global plastic production was estimated to be 299 million tons in 2013; nearly a third of plastic production (75 to 80 million tons) is used for plastic packaging including single-use items. Plastic does not readily degrade but it does fragment into smaller and smaller particles. Until recently, in the Bay Area, concern was primarily focused on management of larger plastic debris, while smaller plastic debris, referred to as microplastic (<5 mm wide) went largely unnoticed. However, in 2015, the RMP conducted a limited special study to monitor microplastic in treated effluent from 8 wastewater treatment facilities and 9 ambient Bay surface water locations. The concentrations of microplastic in the Bay were higher than similar studies of the Great Lakes and Chesapeake Bay. These findings resulted in considerable media attention and spurred policy actions at a State and Federal level. The RMP followed up this limited pilot study in 2016 by developing management questions and conducted a one-day workshop to vet these questions and determine consensus priorities for future work. These priorities were articulated in the 2016 RMP Microplastic Strategy document that has been reviewed by an external expert panel and RMP stakeholders. In 2016, SFEI was able to secure funding ($880,000) to begin a two-year project addressing several aspects of the microplastic strategy including an evaluation of microplastic in sediment, water, effluent, stormwater and prey fish; however, a high priority element, the monitoring of sportfish was not included based on the timing of the grant. The RMP will sample sportfish in 2019. A small amount of funding has been made available to archive some fish samples for later analysis for microplastics. Funding for a Supplemental Environmental Project will allow us to analyze the archived sportfish for microplastic, enable analyses of both gut and tissue samples to assess the potential for translocation of fibers from the gut to tissue, review and synthesize the data, prepare a report and upload the data to CEDEN. This information will be important for assessing human health risks. The budget for this project is scalable by the number of samples analyzed.

Sources Pathways and Loadings Workgroup / Small Tributaries Loading Strategy Team

Develop a Statistical Model for Trends Evaluation

A key task for regional stormwater management is to assess how regional scale pollutant loads to the Bay are changing through time (and consequently how Bay Water Quality is changing). Recent RMP efforts have led to progress towards determining a methodology for tracking regional trends. This progress was made by completing a trend analysis using a statistical modeling effort for one extensively monitored Bay Area watershed, the Guadalupe River. That analysis resulted in valuable information as to how much of a change could be identified (given the natural variability of pollutant loads across storms and across years) and what the sampling program must look like to detect those changes. However, the Guadalupe River is a large and complex Bay Area watershed, and therefore represents just one type of watershed in the Bay Area. Results for the Guadalupe River analysis will not apply to all watersheds regionally. As such, a similar analysis is desired on a second, smaller and less complex watershed (Zone 4 Line A in Hayward, CA). This project would refine and complete the statistical trend analysis for Zone 4 Line A, to serve as a second test case for monitoring program design and methodology for evaluating loading trends in individual watersheds. The characterization of the variance in load predictability observed in Z4LA will advance our understanding of the range of uncertainty in estimating loads and trends in the region. Results from the two watershed analyses will be used to develop a sampling program for trends assessment over time, and will enable us to make an estimate of field, lab, and data management costs for such a program going into the future.

Bay Area Stream Gage Monitoring Needs Assessment and Feasibility Analysis

Information on urban storm water flow, either measured or estimated using modeling, is fundamental to policy development, planning and environmental management and supports drainage engineering, pollutant loading estimates, and models of transport and fate of pollutants. In the Bay Area, the majority of flow data have been collected by the USGS and partner flood control and water supply agencies in less urbanized larger watersheds mainly in support of flood risk analysis, the operation of water supply systems, and riparian flows for fish and wildlife. Presently there are 12 watershed being gauged by USGS and six others being gauged by flood control and water district staff or consultants to support these issues. Flow data are not being collected in the smaller highly urban watersheds that fringe the Bay that have rainfall-runoff characteristics that are distinctly different to larger nonurban watersheds. This project aims to fill these data gaps. A planning effort in Phase 1 of the project ($35k) will 1) identify the range of data needs, uses, and gaps, 2) develop a sampling framework (number of watersheds, desired watershed characteristics), 3) generate a draft list of watersheds and potential sampling sites, 4) complete a reconnaissance of the potential monitoring sites, and 5) prioritize a final list of sampling sites. Flow monitoring would begin in the second phase, costing approximately $16k per site per wet season or $26k per site per year if dry weather flow is desired as well. In addition, there would be an initial one time startup cost of $20k per site for purchase

and installation of equipment. These estimated costs are based on the USGS doing monitoring in WY 2018 and would increase by ~4% in subsequent years going forward, and as such, we recommend including the USGS field chief from Santa Cruz at each of the planning meetings. Estimates costs: Year 1: $179-311k; subsequent years: $64-156k; suggested monitoring period 4 years.

Expanded Pilot Testing of Remote Stormwater Sampling Devices

Stormwater sampling in urbanized small tributaries around SF Bay over the past 15 years has revealed some tributaries episodically yield relatively high pollutant concentrations and loads. These highly unpredictable releases of pollutants during certain storms are hypothesized to be associated with pollutant release and transport from source areas that likely make up <1% of the watershed area. Although further sampling in these watersheds may reveal predictable patterns, the highly episodic nature of these releases makes capturing these events using a storm based grab sampling approach infeasible since it might take many years (sampling nearly all moderate to large storms) to see another release. However, such watersheds are of high management interest both in locating and abating sources and also in measuring success such as reduced loads. To support the development of the STLS Trends Strategy and evaluation of trends over time, and to further investigate loads in watersheds with episodic pollutant transport events, a form of continuous sampling is needed that has an acceptably low likelihood of missing these "rare" release events. Two options being considered are passive sediment samplers (the Hamlin and Walling samplers) and Super Composite stormwater samples (captured using refrigerated portable autosamplers such as ISCO brand). The passive sediment samplers work by enhancing sedimentation of fine sediment particles from the water column and could be cost effective for measuring trends in particle concentrations but are not suitable for directly evaluating loading trends. For loads, the best option may be flow-paced, small aliquot super-composites captured and analyzed using just 2-6 samples per wet season. The super composites could individually be analyzed and applied to the flow data to estimate seasonal and annual loads. This proposal aims to develop and test the use of these two methods and make recommendations for future use. The watersheds of Ettie Street Pump Station, Pulgas Pump Station South, or Sunnyvale East Channel may be candidates for methods development and testing. Estimated budget is $80k per watershed during the start-up year and $50k per watershed for subsequent years but final budgets would be influenced by the final scope and the sampling locations chosen. For example, there would be additional costs at the pump station sites for improved characterization of flow and confined space entry. Estimated costs including data management costs based on 1 or 2 pump station sites for year 1: $100-200k; year 2: $70-140k.

Update Land Use Maps for the San Francisco Bay Region

Geographic information on land use forms the basis of data and information generated to inform many planning, management, and policy decisions. For example, the areas of various land use types are being used as basic inputs for modeling stormwater runoff

volumes, pollutant loads, and estimates of loads reduced under various management scenarios. The first comprehensive information on Bay Area land use was released by ABAG in 1995, updated in 2000, and again in 2005 to reflect the (then) latest information of land use on a parcel basis. The objective of the 2005 update was to support the earthquake preparedness program and associated HazUS earthquake modeling and was based on parcel assessments and farm land mapping and monitoring program (FMMP) data that dated from 2003, rendering it more than 12 years old at present. The data set has since been used for all kinds of applications (both inside and outside of ABAG), most of which it was never designed to support. For example, this 2005 data set was used to estimate regional suspended sediment loads (Lewicki and McKee, 2009), to support the BASMAA 2013 IMRs, and as the basis for RWSM PCB and Hg loads (Wu et al, 2015), and remains the only regional data set for planning, management, and policy decisions. However, given land use is constantly evolving in the Bay Area due to new and redevelopment (for example, the nine county Bay Area population has expanded by about 0.6 million people from 2005-2015), this data set is in need of a major update. Users of the ABAG 2005 data comparing to modern aerial imagery often notice large areas that were assigned some kind of industrial land use are now covered with houses or modern commercial or business parks. This proposal aims to generate a one time regional update of basic land use information for the Bay Area to support planning and assessment needs within the stormwater community and to support the "Plan Bay Area" sustainable communities mapping needs of ABAG/MTC. But what is ultimately needed is a regular update process (perhaps every 5 years) that reflects constantly changing economic and social conditions. The project would likely be carried out through a collaboration between SFEI and ABAG/MTC staff and would include two phases; a planning phase which would include needs assessment and methods development with input from BASMAA MRP permittees, Water Board staff, EPA staff, ABAG/MTC staff, and other interested parties (BCDC, BAAQMD, county congestion management agencies, CALTRANS), and a product's development phase. The anticipated methods would combine parcel assessor data with satellite imagery. Estimated cost for the planning phase would be about $20k; the second phase is estimated to cost between $75-150k depending on the outcomes of the needs assessment and the choice of methods.

Mallard Island Loads Study (Proposal of potential joint interest between Region 2 and Region 5)

(Note, this concept has not received complete STLS review and has not been discussed with the Delta RMP)

Pollutants derived from legacy and current human activities and chemical use in the Central Valley watershed (the Sacramento and San Joaquin River drainages) pass into San Francisco Bay via a 900 m wide channel adjacent to Mallard Island near Pittsburg, Contra Costa County. In 2010, the RMP completed a six year monitoring study at this location (Water Years 2002-06, 2010) by collecting water samples during storms and analyzing these for suspended sediments, PCBs, OC pesticides, PAHs, PBDEs, dioxin/furans, mercury speciation (total, dissolved, methyl and acid labile), and selenium and making use of long term monitoring data collected on

the edge of the ship channel by the USGS (turbidity) and the DWR (tide height, salinity among other parameters). At the conclusion of the study six years ago, remaining information gaps included the need for monitoring larger storms to better estimate maximum loading rates during very wet years when the yolo bypass is flowing and to better estimate average annual loads, uncertainties over the selenium loads and speciation, the likelihood of trends in PCB and Hg pollutant loadings given trends in suspended sediment concentrations and loads, the complete lack of loading information on nutrient concentrations and loads during storm events, and the lack of information on current use pesticides (pyrethroids, carbaryl and fipronil) and contaminants of emerging concern including microplastics. Addressing some or all of these information gaps will have benefits for management of the Bay including refinement of the mass balances for each of these pollutants, supporting a better understanding of nutrient baselines and trends associated with changing wastewater treatment practices, and providing data to construct or refine Bay TMDLs. In addition, there might be benefits for the Delta RMP program including (a) the general ancillary benefits the Delta program could realize from free availability of Bay RMP-collected data, (b) confirmation and further refinement of the methylmercury loss rate and (c) the potential benefits if the Bay and Delta RMP programs were to collaborate in design, decision-making, and the funding of the project (Note, this last benefit has no precedent and may add additional costs and coordination burdens that may overwhelm the potential information benefits to each program). The estimated costs including data management costs: $140-190k per wet season depending on chosen suite of pollutant analyses, funding sources and coordination needs.

Exposure and Effects Workgroup

<u>Assessment of the Benthic Community in San Francisco Bay Using New Analytical Tools</u>

Evaluation of macrobenthic community condition is an integral component of sediment quality assessment, and is a required element of the Sediment Quality Objectives (SQO) assessment framework. We do not, at present, have robust and validated tools to interpret macrobenthic community health in over half of San Francisco Bay Estuary. Consequently, the status of the benthic community in most of the Bay is a major datagap. We propose to update the SQO assessments of San Francisco Bay by incorporating a newly revised version of the M-AMBI (Multivariate AZTI Marine Biotic Index) benthic index designed to work in multiple estuarine habitats across the United States. To do this we will follow a three step process. The first step is to calibrate the M-AMBI across the estuary's different habitats and integrate the M-AMBI scores into the SQO assessment framework. The second step is a synthesis of benthic community data and revision of SQO assessment trends using the new, calibrated M-AMBI. The third step is preparation of a final report. The report will include recommendations on the incorporation of the revised M-AMBI for benthic community assessments associated with the SQO program and other assessment studies in the San Francisco Bay Estuary. Steps 2 and 3 are unfunded and

would be completed as a Supplemental Environmental Project. The successful integration of this new benthic tool will allow for the first time, a robust SQO assessment of the potential impacts of toxic, sediment-bound chemicals on the macrobenthic resources of the San Francisco Bay Estuary.

PCB Workgroup

Richmond Harbor PCB Conceptual Model Development

The goal of RMP PCB Strategy work over the next few years is to inform the review and possible revision of the PCB TMDL and the reissuance of the Municipal Regional Permit for Stormwater (MRP), both of which are tentatively scheduled to occur in 2020. Conceptual model development for a set of four representative priority margin units (PMUs) will provide a foundation for establishing an effective and efficient monitoring plan to track responses to load reductions and also help guide planning of management actions. The Emeryville Crescent was the first PMU to be studied in 2015-2016. The San Leandro Bay PMU was second (2016-2017). The third will be Steinberger Slough in San Carlos (2018). The purpose of this study would be to complete the fourth and final conceptual model for Richmond Harbor. The report will also summarize conclusions across all four PMUs.

~~Synthesis of PCB Measurements in Dredged Sediments Compiled in the DMMO Database~~

~~The Dredged Material Management Office (DMMO) maintains a database that compiles sediment chemistry testing data from all dredging projects in San Francisco Bay. This rich database has only recently been released to the public. This study would synthesize the available information from the DMMO database to evaluate PCB concentrations from dredging projects, to compare their concentrations ranges to other areas (e.g., open water and margin ambient sites), and to estimate the mass of PCB removed from the Bay by dredging. These data would provide valuable information to confirm the PCB TMDL assessment that dredging results in a net loss of PCBs from the Bay and to leverage data already collected to evaluate the current conceptual model of PCBs in the Bay.~~

PCB Priority Margin Unit Field Study in Steinberger Slough.

The RMP PCB Strategy calls for investigations of four priority margin units. Due to funding constraints, we have planned to complete the work on one unit per year. RMP funding is being used to develop a conceptual model for Steinberger Slough. However, SEP funds

are needed for a field study in this area to test the model. The field study will consist of an intensive field collection effort to measure PCBs in sediment, water and/or biota to resolve information gaps and set baselines. Total cost: $100,000 - $200,000

PCB Priority Margin Unit Field Study in the Emeryville Crescent.
The RMP PCB Strategy calls for investigations of four priority margin units. Due to funding constraints, we have planned to complete the work on one unit per year. RMP funding was used to develop a conceptual model for the Emeryville Crescent. However, SEP funds are needed for a field study in this area to test the model. The field study will consist of an intensive field collection effort to measure PCBs in sediment, water and/or biota to resolve information gaps and set baselines. Total cost: $100,000 - $200,000

~~PCB Study of San Leandro Bay Margin Area, Phase 3~~
~~During 2016, the RMP funded an intensive field sampling effort in San Leandro Bay. Samples were collected of water, sediment, prey fish, sport fish, and benthos. The available funding to date allowed for analysis of the water, sediment, and fish samples. Additional funding is needed to analyze fish gut samples (~$15k) and benthic macroinvertebrate samples (~$50k), and to prepare a report. The different analyses can be spread out over time as funding allows.~~

Margins Monitoring for PCBs in Prey Fish
The PCB Strategy for the Bay was heavily influenced by the finding that PCB concentrations were high in the tissues of small prey fish in the margin areas. The 2010 RMP study of prey fish was limited due to budget constraints. For this project, a more comprehensive prey fish sampling effort would be conducted. The data would support conceptual model development in priority margin units and identify hot-spots for PCBs around the Bay. This study was recommended in the PCB Synthesis and discussed by the PCBWG, but was not pursued because of the limited funding available for PCB special studies. Total cost: $150,000- $200,000

Selenium Workgroup

Selenium South Bay Synthesis and Food Web Sampling.

The RMP Multi-Year Plan calls for projects in 2018 and 2019 to synthesize existing data on selenium in South Bay and to collect data to fill information gaps. The purpose of these projects is to set the stage for considering a selenium TMDL for South Bay. Total cost: $100,000 - $200,000

Technical Review Committee

~~Improved Lower South Bay Suspended-Sediment Flux Measurements~~
~~Lower South Bay (LSB) sediment flux monitoring and research began in WY 2009 at Dumbarton Bridge (DMB) due to the importance of knowing the sediment supply for the nearby South Bay Salt Ponds Restoration Project. Recent work has shown that accounting for flocculation of suspended sediment in the water column may be critical for accurately measuring net sediment transport. For example, preliminary analyses that estimate flocculation indicate that LSB could be accumulating sediment rather than losing sediment as previously thought. Therefore, validating this new method that takes flocculation into account is critical for past and proposed Lower South Bay sediment flux monitoring.~~

~~To quantify the effect of flocculation on LSB sediment flux computations we propose two years of suspended-sediment flux monitoring at DMB with a augmented sampling program that will continuously observe in-situ floc size, particle size distributions, SSC, and turbidity through entire flood-ebb cycles during spring and neap tides of each season. RMP funding is available for the first year of the project but not the second year nor for a final interpretive report. Also, the RMP funding does not cover replacement of existing sensors at two depths with a vertical profiler. The main benefit of the vertical profiler is that it would provide 20-60 measurements of SSC throughout the water column. Our present estimate of the settling parameter and flocculation uses only two points within the water column. Vertical profiles of SSC and water velocity would greatly improve the accuracy of the sediment flux calculations. An added benefit of the profiler is that it would reduce biofouling on the instruments.~~

~~Additional funding could be used to add the vertical profiler ($80k), support data collection in year 2 ($120k), and/or produce the final interpretative report ($75k).~~

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RMP 2018 ANNUAL MEETING AGENDA

Theme: RMP Update

October 11, 2018, The David Brower Center, Berkeley, CA
Remote Access: Audio: 1.415.594.5500, Access Code 943-326-397#; Slides: https://join.me/sfei-conf-cw1

9:00	Welcome and Introduction - *Tom Mumley, San Francisco Bay Water Board*
	Session 1: Updates on 303(d)-Listed Pollutants
9:10	Linking Mercury Pathways to Concentrations in Bay Fish (not confirmed) - *Joel Blum, University of Michigan*
9:30	Selenium Monitoring in the Bay: At a Crossroads (availability confirmed) - *Robin Stewart, US Geological Survey*
10:00	Updated Conceptual Model for Dioxins – *Don Yee, San Francisco Estuary Institute*
10:20	Discussion - *Moderated by xx, San Francisco Bay Water Board*
10:40	BREAK
	Session 2: From Watersheds Through the Bay
10:55	Water Quality Impacts of the North Bay Fires - *Kevin Lunde (?), San Francisco Bay Water Board*
11:15	Contaminants in Sediment in the South Bay Margins (include CECs) - *Phil Trowbridge, San Francisco Estuary Institute*
11:35	Sediment Flux Through the Golden Gate - *Maureen Downing-Kunz, US Geological Survey*
11:55	Discussion - *Moderated by xx, San Francisco Bay Water Board*
12:10	**LUNCH**

Continued next page

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RMP 2018 ANNUAL MEETING AGENDA (continued)

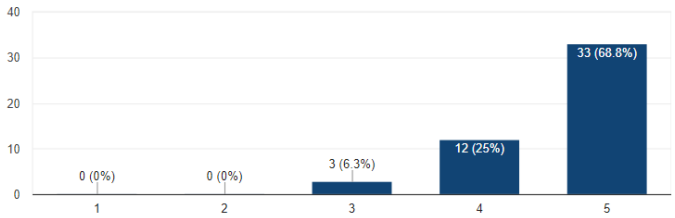
	Session 3: Nutrients
1:10	The Dissolved Oxygen TMDL for Suisun Marsh - *Barbara Baginska, San Francisco Bay Water Board*
1:30	Harmful Algae in San Francisco Bay - *Dave Senn, San Francisco Estuary Institute*
1:50	Simulating Phytoplankton Blooms and Nutrient Cycling: Determining the Major Controlling Factors - *Zhenlin Zhang, San Francisco Estuary Institute*
2:10	Discussion - *Moderated by Dave Senn (?), San Francisco Estuary Institute*
2:25	BREAK
	Session 4: Contaminants of Emerging Concern
2:45	Pharmaceuticals in Wastewater - *Diana Lin, San Francisco Estuary Institute*
3:05	Bisphenols in Bay Water - *Ila Shimabuku, San Francisco Estuary Institute*
3:25	Flame Retardant Update - *Rebecca Sutton, San Francisco Estuary Institute*
3:45	Discussion - *Moderated by Karin North (?), City of Palo Alto*
4:00	**Adjourn to Social Event**

Another potential talk:
A Map of Daily Suspended Sediment Concentrations in San Francisco Bay (2000-2015)
- *Taylor Winchell, San Francisco Estuary Institute*

WG season was a success!

On a scale of 1-5, how informative and useful was this meeting?

48 responses



"Good discussion. Nice mix of science advisors and management community."

"I find that I get a lot out of the meetings. It is great to hear all the different perspectives."

"I thought that this was one of the more interesting and successful meetings I've attended. I really enjoyed it, felt I learned a lot, and was able to make meaningful contributions."

But, it came at a price…

- A lot of time for staff and stakeholders
- Too many good projects made funding recommendations challenging
- $30k cost overrun
  - $110k budget for WGs, $145k actual expense
  - $60k budget for advisors, $55k actual expense

Challenges - Workgroups

- Cost of managing workgroups
  - 7 workgroups
  - $200k/yr total cost
  - Some WGs are more expensive than others
- Cost of not making decisions
  - Workgroups that do not do much work still take time
  - Loss of credibility from partners when proposals are not funded (e.g., with bioanalytical tools)

Challenges - Proposals

- Proposal writing is a fraction of WG costs
  - 40% Strategizing, meeting with stakeholders
  - 35% Meeting organization and implementation
  - 25% Actual proposal writing
- Cannot have proposals without strategizing
- Need extra proposals for SEPs
- Want to have proposals from collaborators but not waste their time
- SFEI absorbs a lot of the proposal costs

RMP

Challenges – Multi-Year Plan

- MYP has become more detailed
- $40k to produce
- Did not stimulate much discussion in 2017
- The MYP helps RMP staff but can it be improved?

RMP

MULTI-YEAR PLAN FOR PCBs

Special studies and monitoring in the RMP from 2015 to 2021. Numbers indicate budget allocations in $1000s. Budgets in parentheses represent funding or in-kind services from external sources. Budgets that are starred represent funding that has been allocated for the given study within other workgroups.

Category	Study	Funder	Questions addressed	2015	2016	2017	2018	2019	2020	2021
General	Development and updating of multi-year workplan and continued support of PCB Workgroup meetings	RMP		10	10	10	10	10	10	10
PMU	Prioritize Margin Units	RMP	1, 4, 5, 6	30						
PMU	Develop Conceptual Site Models and Mass Balances for PMUs (4 PMUs)	RMP	1, 4, 5, 6	45	30 (30)	60	30	30		
PMU	PMU Field Studies to Support Development of Conceptual Site Models and Monitoring Plans	RMP	1, 4, 5, 6		(202)		21	150	150	150
PMU	PMU Trend Monitoring (5 PMUs)	RMP	1, 4, 5, 6					TBD	TBD	TBD
DMMO	Synthesis of DMMO data for PCB hot spots and mass removed	RMP	1						32	
	RMP Total			**85**	**40**	**70**	**61**	**190**	**192**	**160**
	SEP Funding				**232**					
	Overall Total			**85**	**272**	**70**	**61**	**190**	**192**	**160**

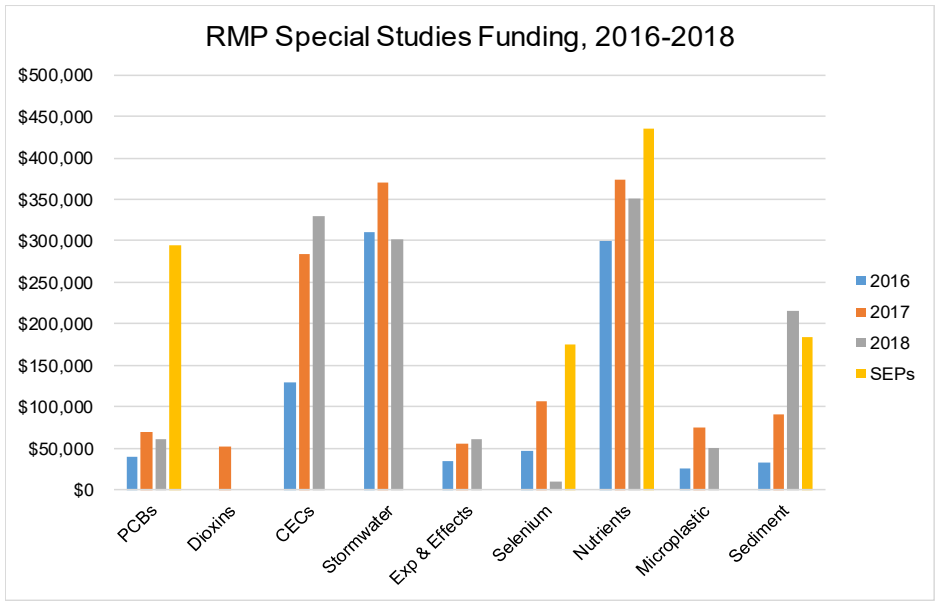
Challenges – Focus

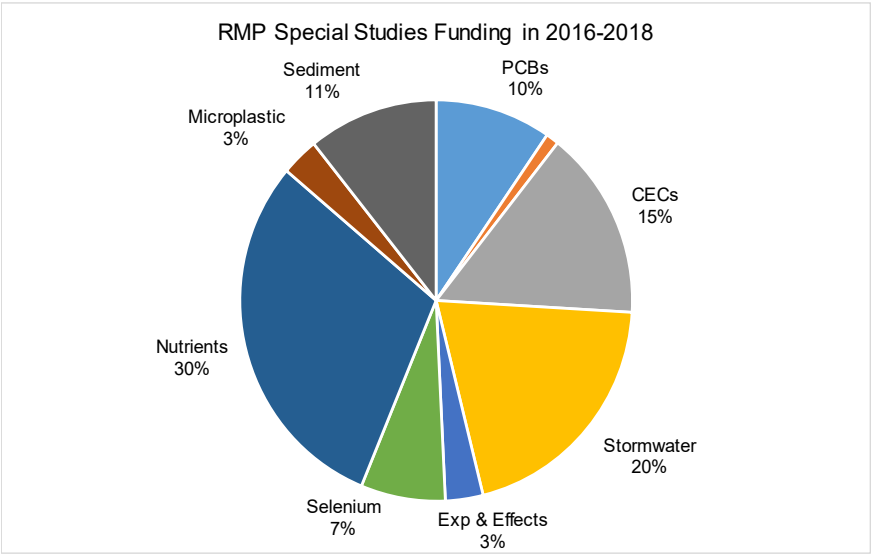
- Limited funding requires a narrower focus
- But, RMP survives by evolving and getting involved with new issues
- RMP mission does not constrain us much
  - Providing data and information to inform management decisions can take many forms

RMP

MYP Topics for Today

- Agenda for MYP meeting
- Format of MYP document
- Preliminary decisions on WG changes for efficiency
- Preliminary decisions on planning budgets





*Includes SEPs in 2016-2018

MYP Topics for October

1. Review management decisions and policies and related information needs
2. Prioritize which management decisions to inform in the next 5 years
3. Set planning budgets for WGs
   - Decide which WGs need to have meetings

MYP Topics for January 2019

1. Discuss specific project ideas for each active focus area.
   - Set priorities for proposal development

MYP Topics to Discuss Over the Next Year(s)

- Where are we going with:
  - Bioanalytical tools?
  - Sediment quality and toxicity?
  - Selenium?
  - Sediment?
  - Wetlands RMP?
- S&T Monitoring Design Changes
  - Incorporating margin areas
  - Incorporating CECs

Bay RMP Action Items

Key to Status Colors:
Green indicates greater than 90 days until the deliverable is due.
Yellow indicates a deliverable is due within 90 days.
Red indicates a deliverable that is overdue.

Primary	Deliverable	Assigned To	Due Date	Status	Comments	Meeting Date
Technical Review Committee Action Items from 6/14/18	Address Richard's comment and finalize the March 14, 2018, TRC meeting summary and post to the website.	Ila Shimabuku	07/02/18	Complete		06/14/18
Technical Review Committee Action Items from 6/14/18	Confirm the December 13 meeting date with absent TRC members and schedule meeting once confirmed.	Ila Shimabuku	07/09/18	Complete		06/14/18
Technical Review Committee Action Items from 6/14/18	Discuss TRC recommendations to improve the process for special studies funding with the SC in July.	Philip Trowbridge	07/24/18	Complete	On SC agenda	06/14/18
Technical Review Committee Action Items from 6/14/18	Update the SEP List based on the TRC recommendations and present it to the Steering Committee in July.	Philip Trowbridge	07/25/18	Complete	On SC agenda	06/14/18
Technical Review Committee Action Items from 6/14/18	Report on copper results produced from BAL re-analysis at the September TRC meeting. Decide which method(s) to use in future years for copper analysis and how long to have overlap between old and new methods.	Don Yee	09/01/18			06/14/18
Technical Review Committee Action Items from 6/14/18	When SCCWRP publishes their final report, contextualize their findings for the RMP in a memo.	Don Yee	09/01/18			06/14/18
Technical Review Committee Action Items from 6/14/18	Prepare a proposal to analyze sediment archives from the margins for legacy pesticides.	Philip Trowbridge	09/01/18			06/14/18
Technical Review Committee Action Items from 6/14/18	Get more information on the North Bay Fire talk from Kevin Lunde.	Naomi Feger	07/25/18	Complete		06/14/18
Steering Committee Action Items from 4/25/18	Finalize the January SC meeting summary.	Ila Shimabuku	05/01/18	Complete		04/25/18
Steering Committee Action Items from 4/25/18	Send calendar invites for SC meeting dates in 2019.	Ila Shimabuku	05/01/18	Complete		04/25/18
Steering Committee Action Items from 4/25/18	Prepare discussion materials (the cost associated with each workgroup, the cost to prepare proposals vs convene the WG, and recent outcomes from each WG) to inform a long-term planning discussion on the future of RMP workgroups at the 2018 MYP workshop.	Philip Trowbridge	10/01/18	Complete	On agenda	04/25/18
Steering Committee Action Items from 4/25/18	Add agenda item to June 14 TRC meeting: ask the TRC to recommend a study that could be funded immediately using $82,000 of available SEP funds (either a new study that can start immediately or a study from the list of possible SEPs).	Philip Trowbridge	06/01/18	Complete	On agenda.	04/25/18
Steering Committee Action Items from 4/25/18	Prepare an agenda for the October MYP Workshop that the SC can review in July.	Philip Trowbridge	07/15/18	Complete	On agenda	04/25/18
Steering Committee Action Items from 4/25/18	Email a draft 2018 RMP Annual Meeting agenda (with talk titles, speaker names, and moderators) for SC review.	Jay Davis	05/14/18	Complete	Sent 6/4/18.	04/25/18
Technical Review Committee Action Items from 3/14/18	Finalize the December 14, 2017, TRC meeting summary and post to the website and public-meetings folder.	Ila Shimabuku	03/20/18	Complete		03/14/18
Technical Review Committee Action Items from 3/14/18	Confirm the September 20 meeting date with Chris Sommers, Shannon Alford, and Jim Mazza. Schedule meeting once confirmed.	Ila Shimabuku	03/26/18	Complete	This date did not work. Staff are using a doodle poll to fix a new date.	03/14/18

Primary	Deliverable	Assigned To	Due Date	Status	Comments	Meeting Date
Technical Review Committee Action Items from 3/14/18	Check on the status of 2018 bivalve sampling permits.	Paul Salop	04/01/18	Complete		03/14/18
Technical Review Committee Action Items from 3/14/18	Create a document or web page on the SFEI website which explains the differences in USGS, RMP, and WB segmentations; shows a map which delineates the differences in segmentation; and includes links to Phil's slides from today's TRC meeting as well as relevant historical materials such as the 1987 "Segmentation of the San Francisco Bay/Delta" report.	Ila Shimabuku	06/01/18	Complete	Report drafted and sent to the TRC on 6/4/18.	03/14/18
Technical Review Committee Action Items from 3/14/18	Check whether BAL would consider lowering their minimum detection limit by a factor of two in anticipation of the 2019 selenium repeat study.	Don Yee	06/01/18	Complete		03/14/18
Technical Review Committee Action Items from 3/14/18	Determine whether DOC results from the 2017 Water Cruise can provide insight the direction of the bias between the RP and IP results for copper.	Don Yee	06/01/18	Complete	DOC correlation is unnecesary since they already pinned it on a Ti interference	03/14/18
Technical Review Committee Action Items from 3/14/18	Look into historical copper data from USGS, San Jose, and S.R. Hanson. Ask Tony Rattonetti at SFPUC analyze samples collected for the selenium IC study for dissolved copper. Develop visual comparisons for presentation to the TRC in June.	Don Yee	06/01/18	Complete		03/14/18
Technical Review Committee Action Items from 3/14/18	Report back to the TRC with a draft final project description including judging criteria.	Cristina Grosso	06/01/18		Delayed. There was not enough time on the June TRC agenda for this action item. It will be completed for the September TRC meeting.	03/14/18
Technical Review Committee Action Items from 3/14/18	Notify the Steering Committee of the data analysis challenge by email.	Philip Trowbridge	03/20/18	Complete		03/14/18
Technical Review Committee Action Items from 3/14/18	Replace the Guadalupe trends topic with a presentation on results from the Advanced Data Analysis project in the Annual Meeting draft agenda and update with other ideas.	Jay Davis	04/01/18	Complete		03/14/18
Technical Review Committee Action Items from 3/14/18	Discuss organizing a Bay-Delta session at SETAC with Bridgette DeShields.	Philip Trowbridge	04/01/18	Complete		03/14/18
Steering Committee Action Items from 1/24/18	Update Steering Committee roster, email lists, and future meeting invitations to include new members	Ila Shimabuku	02/15/18	Complete		01/24/18
Steering Committee Action Items from 1/24/18	Highlight the adjusted SC and TRC meeting start and end times when sending out the agenda packages.	Philip Trowbridge	03/07/18	Complete		01/24/18
Steering Committee Action Items from 1/24/18	Report back to the Steering Committee on how the acoustic release samplers were purchased.	Philip Trowbridge	04/25/18	Complete	On agenda	01/24/18
Steering Committee Action Items from 1/24/18	Update 2018 and 2015 RMP budgets to reflect SC approvals on 1/24/18.	Philip Trowbridge	01/31/18	Complete		01/24/18
Steering Committee Action Items from 1/24/18	Change footnote text on page six of the multi-year plan from "Triggers will be updated..." to "Comparisons to triggers will be updated..."	Ila Shimabuku	01/29/18	Complete		01/24/18
Steering Committee Action Items from 1/24/18	Send a link to the microplastics video to the SC when it is ready to be released.	Rebecca Sutton	02/15/18	Complete		01/24/18
Steering Committee Action Items from 1/24/18	Share finalized slides from Item 8 with Steering Committee.	Philip Trowbridge	01/29/18	Complete		01/24/18
Steering Committee Action Items from 1/24/18	Regarding sediment strategy: Look into collaborative efforts with Santa Clara Valley Water District, BAFPAA, Jim Fiedler, and the Resilient by Design project.	Philip Trowbridge	01/31/18	Complete	A study to evaluate data from flood control agencies was added to the lists of potential studies.	01/24/18
Steering Committee Action Items from 1/24/18	Proceed with booking October 11 with the David Brower Center and send out a save-the-date to SC and TRC committee members.	Ila Shimabuku	02/01/18	Complete		01/24/18
Technical Review Committee Action Items from 12/14/17	Finalize the September 14, 2017, TRC meeting summary and post to the website and public-meetings folder.	Ila Shimabuku	12/20/17	Complete		12/14/17

Primary	Deliverable	Assigned To	Due Date	Status	Comments	Meeting Date
Technical Review Committee Action Items from 12/14/17	Upload powerpoint of latest copper and cyanide concentrations from the 2017 Water Cruise to RMP web page after data and slides have been finalized.	Ila Shimabuku	06/30/18		Delayed until data have been QA'ed. Cyanide data is complete but Cu data are still awaiting a decision from the TRC about which results to use. This decision will be made in September 2018.	12/14/17
Technical Review Committee Action Items from 12/14/17	Add agenda item to March TRC meeting: Discuss the differences in the names and boundaries of the Bay segments used by the RMP, Water Board, and USGS.	Philip Trowbridge	03/01/18	Complete	Topic added to agenda item list.	12/14/17
Technical Review Committee Action Items from 12/14/17	Look into moving two bivalve sites outside of State Lands Commission territory.	Paul Salop	01/01/18	Complete		12/14/17
Technical Review Committee Action Items from 12/14/17	Present a proposal for the purchase of an acoustic-release system to the SC in January. The proposal is to include budgeting and permitting information.	Paul Salop	01/01/18	Complete	On agenda for 1/24/18 SC meeting. Verbal update will be given.	12/14/17
Technical Review Committee Action Items from 12/14/17	Add the North Bay fires event to the “Summary of RMP Program Changes” spreadsheet.	Ila Shimabuku	12/20/17	Complete		12/14/17
Technical Review Committee Action Items from 12/14/17	Consider a “What Made the Headlines” article in the upcoming RMP Update (and future reports) that includes significant water-quality-related events like substantial RMP findings, excessive rainfall, fires, Dungeness crab closures, shark die-offs, and others.	Jay Davis	03/01/18	Complete		12/14/17
Technical Review Committee Action Items from 12/14/17	Implement the TRC’s suggestions regarding lab intercomparison studies.	Philip Trowbridge	01/01/18	Complete		12/14/17
Technical Review Committee Action Items from 12/14/17	Implement the TRC’s suggestions regarding lab intercomparison studies.	Don Yee	01/01/18	Complete	Went to Bight '18 Chem planning meeting. Many of our priority tissue & sediment matrix analytes, will request contract lab participation, & solicit stakeholder (BASMAA/BACWA) internal & contract labs	12/14/17
Technical Review Committee Action Items from 12/14/17	Look into what methods the selenium IC labs used to calculate the minimum detection limit.	Don Yee	01/01/18	Complete	currently communicating w/ labs on their MDL derivation methods	12/14/17
Technical Review Committee Action Items from 12/14/17	Include explicit financial penalties for overdue datasets in future RMP laboratory contracts.	Philip Trowbridge	01/01/18	Complete	After discussion with QA staff, we decided that this provision would create more challenges than it would solve. Fixing data that were incorrect because the lab was rushing is worse than late data. The current practice of checking in with labs regularly is already working well.	12/14/17
Technical Review Committee Action Items from 12/14/17	Present any steps taken on Richard’s data-analysis contest to the TRC.	Cristina Grosso	03/01/18	Complete	On agenda for 3/14/18 meeting	12/14/17
Technical Review Committee Action Items from 12/14/17	Implement the TRC’s suggestions for informatics.	Cristina Grosso	12/31/18	Complete		12/14/17
Steering Committee Action Items from 11/01/17	Conduct succession planning for the chair and vice chair of the Steering Committee and Technical Review committee.	Tom Mumley	10/31/18			11/01/17
Steering Committee Action Items from 11/01/17	Update charter as presented to the SC on 11/1/17.	Philip Trowbridge	11/17/17	Complete	Revised charter available at: http://www.sfei.org/documents/charter-regional-monitoring-program-water-quality-san-francisco-bay-0	11/01/17
Steering Committee Action Items from 11/01/17	Finalize July Steering Committee meeting summary and upload it to the RMP webpage.	Ila Shimabuku	11/07/17	Complete		11/01/17
Steering Committee Action Items from 11/01/17	Create calendar invites for the proposed 7/25/18 and 10/24/18 Steering Committee meetings.	Ila Shimabuku	11/07/17	Complete		11/01/17

Primary	Deliverable	Assigned To	Due Date	Status	Comments	Meeting Date
Steering Committee Action Items from 11/01/17	Plan for the addition of dry docks as contributors to the RMP and present to the SC. Planning will include deciding what category dry docks should fall into (if not their own), fees, and whether they will be required to have a designated representative for the Steering Committee and Technical Review Committee.	Philip Trowbridge	01/15/18	Complete	It turns out that Dry Docks are not able to join the RMP. Therefore, no action is required. Update on the agenda for the 1/24/18 meeting.	11/01/17
Steering Committee Action Items from 11/01/17	Develop a procedure for how to add stakeholders to the RMP.	Philip Trowbridge	01/15/18	Complete	Canceled because Dry Docks are not able to join the RMP. A discussion about whether procedures are needed in general is on the agenda for the 1/24/18 meeting.	11/01/17
Steering Committee Action Items from 11/01/17	Refine proposal by addressing feedback from today's discussion, conduct a review by the TRC, and return to the Steering Committee for further approval.	Rebecca Sutton	11/20/17	Complete	Revised proposal approved by SC on 11/29/17.	11/01/17
Steering Committee Action Items from 11/01/17	Send a doodle poll to the list of no-shows to collect information on why so many registered participants did not attend the meeting.	Ila Shimabuku	11/07/17	Complete	We don't have a list of those who did and did not attend so I cannot complete this task.	11/01/17
Technical Review Committee Action Items from 9/14/17	Finalize the June 8, 2017, TRC meeting summary and post to the public meetings folder.	Ila Shimabuku	09/25/17	Complete		09/14/17
Technical Review Committee Action Items from 9/14/17	Create a calendar event for the March 8, 2018 TRC meeting	Ila Shimabuku	09/25/17	Complete		09/14/17
Technical Review Committee Action Items from 9/14/17	Adjust the calendar event for the November 1, 2017, Multi-Year Planning meeting to include TRC members.	Ila Shimabuku	09/25/17	Complete		09/14/17
Technical Review Committee Action Items from 9/14/17	Reach out to all TRC and SC members to confirm their planned attendance at the RMP's Annual Meeting.	Philip Trowbridge	09/25/17	Complete		09/14/17
Technical Review Committee Action Items from 9/14/17	Revise the funding request memo for PBDEs in Tern eggs and put it on the agenda for the SC	Philip Trowbridge	11/01/17	Complete	On SC agenda	09/14/17
Technical Review Committee Action Items from 9/14/17	Develop a more specific plan for intercomparability studies to discuss at the December TRC meeting	Don Yee	12/14/17	Complete	On agenda for December mtg.	09/14/17
Technical Review Committee Action Items from 9/14/17	Revise S&T Design based on feedback from the TRC and include it in the Multi-Year Plan	Philip Trowbridge	11/01/17	Complete		09/14/17
Technical Review Committee Action Items from 9/14/17	Determine why the RMP decided to test for water-column toxicity every 2 years instead of less frequently and report back to the TRC.	Jay Davis	12/14/17	Complete	On agenda for December mtg.	09/14/17
Technical Review Committee Action Items from 9/14/17	Report back to the TRC in December with information on the matrix that drives the continuing 303d listing for legacy pesticides and information on OEHHA guidelines for legacy pesticide in fish tissue.	Richard Looker	12/14/17	Complete	On agenda for December mtg.	09/14/17
Technical Review Committee Action Items from 9/14/17	Send information on all RMP data on legacy pesticides collected after 2006. Include both data tables and time series plots.	Philip Trowbridge	11/15/17	Complete	On agenda for December mtg.	09/14/17
Technical Review Committee Action Items from 9/14/17	Agendize a discussion of deploying radio-controlled moorings for bivalve samples for the December TRC meeting.	Philip Trowbridge	12/14/17	Complete	On agenda for December meeting	09/14/17
Technical Review Committee Action Items from 9/14/17	Ask Derek Muir about comparing results from the passive samplers to measured water concentrations. Report back to the TRC with the results from AQUAGAPS and how water concentrations from past RMP cruises compare.	Diana Lin	08/30/18		Delayed until data from AQUAGAPS is available.	09/14/17
Steering Committee Action Items from 7/19/17	Send calendar invite for April 26, 2018 SC meeting	Ila Shimabuku	08/01/17	Complete		07/19/17
Steering Committee Action Items from 7/19/17	Revise the list of projects eligible for SEPs and share it with the Water Board	Philip Trowbridge	08/01/17	Complete		07/19/17

Primary	Deliverable	Assigned To	Due Date	Status	Comments	Meeting Date
Steering Committee Action Items from 7/19/17	Revise the matrix showing the Status and Trends design to show the changes taking effect in 2017 and post to the RMP website	Philip Trowbridge	08/01/17	Complete		07/19/17
Steering Committee Action Items from 7/19/17	Send out Annual Meeting registration information to RMP participants	Philip Trowbridge	08/01/17	Complete		07/19/17
Steering Committee Action Items from 7/19/17	Send the SC the article written for the 20th anniversary of the RMP and the article on the 50-year vision from the 2015 Pulse	Jay Davis	08/01/17	Complete		07/19/17
Steering Committee Action Items from 7/19/17	Have a discussion with John Coleman regarding federal funding	Philip Trowbridge	08/01/17	Complete		07/19/17
Steering Committee Action Items from 7/19/17	Reach out to colleagues at other regional programs (Chesapeake, Great Lakes, Puget Sound, etc) about common messages regarding federal funding	Philip Trowbridge	08/01/17	Complete	Discussed issue with Peter Tango and Scott Phillips at CBP.	07/19/17
Steering Committee Action Items from 7/19/17	Prepare a short letter the describes the importance of the USGS Bay Monitoring Program	Philip Trowbridge	09/30/17	Complete	Letter prepared. Seeking WB signatures.	07/19/17
Steering Committee Action Items from 7/19/17	Provide details of Delta RMP monitoring to Jessica Burton Evans	Philip Trowbridge	08/01/17	Complete		07/19/17

Bay RMP Deliverables Scorecard Report

Key to Status Colors:
Green indicates greater than 90 days until the deliverable is due.
Yellow indicates a deliverable due within 90 days.
Red indicates a deliverable that is overdue.

Focus Area	Project	Primary	Deliverable	Assigned To	Due Date	Due Date Extended	Old Due Date	Status	Comments
Annual Reporting	Bay RMP (2018)	4. Annual Reporting	2018 RMP Update	Jay Davis	09/30/18				
Annual Reporting	Bay RMP (2018)	4. Annual Reporting	2017 Annual Meeting	Philip Trowbridge	10/06/18				
Communications	Bay RMP (2018)	5. Communications	Q3 Estuary News Article	Jay Davis	09/30/18				
Communications	Bay RMP (2018)	5. Communications	Q3 RMP eUpdate	Jay Davis	09/30/18				
Communications	Bay RMP (2018)	5. Communications	RMP Update for BACWA Board	Philip Trowbridge	10/31/18				
Communications	Bay RMP (2018)	5. Communications	RMP Update for BASMAA Board	Philip Trowbridge	10/31/18				
Communications	Bay RMP (2018)	5. Communications	RMP Update for LTMS Program Managers	Philip Trowbridge	10/31/18				
Communications	Bay RMP (2018)	5. Communications	RMP Update for BPC	Philip Trowbridge	10/31/18				
Communications	Bay RMP (2018)	5. Communications	RMP Update for WSPA BATS Meeting	Philip Trowbridge	10/31/18				
Communications	Bay RMP (2018)	5. Communications	RMP Update for RB2 staff	Philip Trowbridge	10/31/18				Include a brown bag presentation by RMP staff.
Communications	Bay RMP (2018)	5. Communications	Q4 Estuary News Article	Jay Davis	12/31/18				
Communications	Bay RMP (2018)	5. Communications	Q4 RMP eUpdate	Jay Davis	12/31/18				
Communications	Bay RMP (2018)	5. Communications	Presentation of RMP data at up to 6 conferences or local meetings (oral presentations and posters)	Philip Trowbridge	12/31/18				
Data Management	Bay RMP (2018)	3. QA and Data Services	Annual QAPP Update	Don Yee	07/31/18		05/31/18		The QAPP has been updated and is being reviewed by partner laboratories.
Data Management	Bay RMP (2018)	3. QA and Data Services	Online Data Access CD3	Cristina Grosso	12/31/18				(1) Pending: Automate generation of TEQs; (2) In-progress: Expand functionality of data download tool; (3) Completed: Implement display of toxicity summary data; (4) In-progress: Tool maintenance and performance upgrades; (5) Pending: Add the SFB Basin Planning Units to CD3
Data Management	Bay RMP (2018)	3. QA and Data Services	Database Maintenance	Amy Franz	12/31/18				(1) Add 2002 and 2003 CTR data to CD3 (2) Add basic water quality data from YSI for RMP water cruises in 2010, 11, 12, 15 to CD3 (3) Check that all records in the legacy RMP database are also in the RDC database (4) Make sure all RMP data has associated Lat/Longs so data can be exchanged with WQX (5) Move RDC database to Data 2 (6) Update database to implement changes made by CEDEN for standard vocabulary codes, business rules and database structure (7) Update records and address issues as identified by internal staff (8) Perform scheduled database maintenance. ($6,250)
Data Management	Bay RMP (2018)	3. QA and Data Services	Updates to SOPs and Templates	Amy Franz	12/31/18				Convert old java code for Pulse maps to R (1) Modify and design data reporting templates. (2) Update queries for bird and bivalve tissue data (3) Maintain data management standard operating procedures and work flow documentation (4) Continue discussion on how to manage sums (5) Continue to work with CEDEN to provide input of updating the CEDEN data checker with SWRCB staff.

Focus Area	Project	Primary	Deliverable	Assigned To	Due Date	Due Date Extended	Old Due Date	Status	Comments
Data Management	Bay RMP (2018)	3. QA and Data Services	QA Officer Report for 2018 S&T Activities	Don Yee	03/31/19				Report will cover 2018 Bird Egg, 2018 Bivalve, and 2018 Sediment data.
Dioxin	Bay RMP (2017)	Dioxin Synthesis Report	Dioxin Synthesis Report	Don Yee	09/30/18		12/31/17		Draft originally due 12/31/2017; Delayed due to competing priorities (year-end deadlines for San Leandro Bay SEP Report) and then staff absences. Draft to PCB/Dioxin WG due 5/3/2018. Final draft by 9/30/18.
Emerging Contaminants	Bay RMP (2014)	Emerging Contaminants Special Studies /	Alternative Flame Retardants Study - Final Report	Rebecca Sutton	09/30/18		06/30/15		Manuscript has been reviewed by the SC, TRC, ECWG. SFEI has made edits and is waiting for the lead author (Da Chen) to finalize and submit the manuscript to a journal. Publication date will depend on the journal.
Emerging Contaminants	Bay RMP (2016)	EC Non-targeted Analysis	Report on Non-Targeted Analysis of Water-Soluble CEC Compounds	Rebecca Sutton	09/30/18		06/30/17		Draft report presented to ECWG on 3/30/17. Dr. Ferguson has requested an extension for his draft report to 5/31/18 to allow him to do additional analyses with newly purchased, faster and higher-resolution equipment. Dr. Ferguson is actively working on this report and has been slowed down due to the large number of new detects from the new equipment.
Emerging Contaminants	Bay RMP (2016)	EC Non-targeted Analysis	Fact Sheet on Non-Targeted Analysis of Water-Soluble CEC Compounds	Rebecca Sutton	09/30/18		06/30/17		Fact sheet is to accompany the final report. Provide final fact sheet to EB Parks.
Emerging Contaminants	Bay RMP (2018)	CUPs and Wastewater Contaminants in Margin Sediment and Water	Technical Report	Matt Heberger	09/30/18				Draft report due by summer '18; final due by 9/30/18
Emerging Contaminants	Bay RMP (2018)	Pharmaceuticals in Wastewater: Data Analysis and Reporting	Technical Report	Diana Lin	09/30/18				Draft report due by summer '18; final due by 9/30/18
Emerging Contaminants	Bay RMP (2018)	CUPs and Wastewater Contaminants in Margin Sediment and Water	Data upload to CEDEN	Amy Franz	11/01/18				
Emerging Contaminants	Bay RMP (2018)	North Bay Post-Fire Monitoring	Brief technical memorandum with results of non-targeted analysis	Meg Sedlak	11/30/18				Draft memo to TRC/SC in November 2018. Final memo in February 2019.
Emerging Contaminants	Bay RMP (2017)	Imidacloprid in Ambient Bay Water	Fact sheet on imidacloprid in ambient Bay water	Diana Lin	12/31/18		06/30/18		Draft due on 9/30/18; final due on 12/31/18 - Review by ECWG. Due dates extended by 6 months because of delays at the laboratory. Results delivered in April 2018.
Emerging Contaminants	Bay RMP (2017)	Phosphate Flame Retardants in Bay Water	Report on phosphate flame retardants in ambient Bay water	Rebecca Sutton	12/31/18		08/31/18		Delayed because lab partner has not provided results on schedule. Review by ECWG
Emerging Contaminants	Bay RMP (2017)	Bisphenol in Bay Water	Report on bisphenol compounds in ambient Bay water	Ila Shimabuku	12/31/18				Draft report by 9/30/18; final due 12/31/18 -- Review by ECWG
Emerging Contaminants	Bay RMP (2017)	Triclosan in Small Fish	Report on triclosan in small fish	Diana Lin	12/31/18		07/31/18		Report delayed by 6 months because lab partner has not provided data. AXYS is still finalizing the lab method. New schedule. Draft by 10/31/18; final due 12/31/18 -- Review by ECWG
Emerging Contaminants	Bay RMP (2018)	EC Strategy	CEC Strategy Document Update	Rebecca Sutton	12/31/18				Update the RMP CEC Strategy document with revised tiered framework tables and multi-year plan, discussion of new RMP data and information gathered (Task 1); include discussion of role of improved Bay contaminant transport model in informing understanding of fate and transport of emerging contaminants in the Bay
Emerging Contaminants	Bay RMP (2018)	North Bay Post-Fire Monitoring	Manuscript on results of non-targeted analysis	Rebecca Sutton	01/31/19				Manuscript will be prepared by academic partners (SDSU, DTSC, Duke). Not a RMP deliverable.
Emerging Contaminants	Bay RMP (2018)	Non-targeted Analysis of Sediment and Water	Fact sheet and technical report	Rebecca Sutton	05/05/19				Draft report and fact sheet by spring '19 in time for ECWG meeting; Final report and fact sheet by summer '19
Emerging Contaminants	Bay RMP (2018)	Non-targeted Analysis of Sediment and Water	Manuscript	Rebecca Sutton	05/05/19				
Exposure and Effects	Bay RMP (2017)	EE Estrogen Linkage Studies	Estrogen Receptor Assay Technical Report	Nancy Denslow (Univ. Florida)	07/31/18		12/31/17		Report has gone through TRC and EEWG review. Minor comments sent to contractor on 7/9/18. Final report expected by 7/20/18.
Exposure and Effects	Bay RMP (2018)	Support for Sediment Bioaccumulation Evaluations	Technical Report	Diana Lin	09/30/18		04/15/18		Draft: April 2018; Final: June 2018 -> delayed to get comments from EEWG, Working on draft report, expect draft in Aug 2018.
Exposure and Effects	Bay RMP (2018)	Synthesis of Benthic Community Data in the Whole of San Francisco Bay using the M-AMBI Index	Technical memo covering the M-AMBI threshold adjustment process and the results of the validation exercise	Philip Trowbridge	12/15/18				

Focus Area	Project	Primary	Deliverable	Assigned To	Due Date	Due Date Extended	Old Due Date	Status	Comments
Exposure and Effects	RMP SEP	9. DMMO Data Synthesis for PCBs	Technical Report	Jay Davis	03/30/19				The results of the PCB data analysis from the DMMO data will be reported as a technical report. SEP deadline was revised from 9/30/18.
Governance	Bay RMP (2018)	2. Governance	July SC Meeting	Philip Trowbridge	07/25/18				
Governance	Bay RMP (2018)	2. Governance	September TRC Meeting	Philip Trowbridge	09/13/18				
Governance	Bay RMP (2018)	2. Governance	October SC Meeting	Philip Trowbridge	10/24/18				
Governance	Bay RMP (2018)	2. Governance	December TRC Meeting	Philip Trowbridge	12/13/18				
Governance	Bay RMP (2018)	2. Governance	Honoraria Payments for Science Advisors	Philip Trowbridge	12/31/18				
Microplastics	Bay RMP (2018)	Microplastics in San Francisco Bivalves	Technical Report	Meg Sedlak	12/15/18				Results will be included in the Moore Microplastic Project final report.
Microplastics	Bay RMP (2017)	Microplastic Characterization Study (Moore Foundation)	Baseline Report - Year 2	Meg Sedlak	12/31/18				
Microplastics	Bay RMP (2018)	Microplastics in San Francisco Bivalves	Presentation to TRC/SC	Meg Sedlak	03/15/19				
Nutrients	Bay RMP (2018)	Ship-based sampling and sample analysis	Results reported in FY18 NMS Annual Report	Dave Senn	09/15/18				Ship-based discrete samples will be collected by USGS aboard the R/V Peterson on ~12 full-bay cruises and an additional ~12 South Bay cruises.
Nutrients	Bay RMP (2018)	Open-Bay and Slough Moored Sensors: Data Analysis, Interpretation, and Maintenance	Results reported in FY18 NMS Annual Report	Dave Senn	09/15/18				Maintain the network of moored sensors in open waters and margin areas of Lower South Bay measuring dissolved oxygen, etc. Data analysis with a major focus on quantitative mechanistic interpretation to identify factors contributing to observed DO conditions, possibly including the use of simplified reactive-transport models.
Nutrients	RMP SEP	3. Hydrodynamic and Water Quality Model in SFB and LSB	A final hydrodynamic and nutrient calibration and validation report	Dave Senn	12/31/18				The primary goals for this study are to calibrate and validate numerical models used for (1) predicting how anthropogenic nutrients (nitrogen and phosphorous) enter and react within the Bay; (2) predicting how the Bay responds to these inputs, including phytoplankton blooms and low dissolved oxygen; and (3) exploring how various nutrient load reduction management decisions will affect habitat condition.
PCB Strategy	Bay RMP (2016)	PCB Margins Conceptual Model	San Leandro Bay Conceptual Model Report	Jay Davis	08/31/18		03/31/18		This deliverable will be an update to the CM report prepared in 2017. The update will incorporate the field data from Phase II and Phase III sampling efforts. Draft was sent to PCB WG on 5/3/18. Final by August 2018.
PCB Strategy	Bay RMP (2018)	San Leandro Bay Fish Diet Analysis	Technical Report	Jay Davis	08/31/18		03/31/18		Andy Jahn subcontract. Report prepared. Awaiting comments from PCBWG before finalizing.
PCB Strategy	Bay RMP (2017)	PCB Margins Conceptual Model	Steinberger Slough Priority Margin Unit Conceptual Model Report	Jay Davis	09/30/18		08/31/17		Revised due dates due to workflow (year-end SEP project deadlines): Draft for WG/TRC/SC by August 2018. Final by 9/30/18 -- Review by PCB WG.
PCB Strategy	Bay RMP (2018)	Richmond Harbor Priority Margin Unit Conceptual Model Development	Technical Report	Jay Davis	05/15/19				$30K needed from 2019 or SEP. Draft report on Richmond Harbor due May '18; Final report on Richmond Harbor due August '18
Program Management	Bay RMP (2018)	1. Program Management	Q3 RMP Financial Report	Philip Trowbridge	07/25/18				
Program Management	Bay RMP (2018)	1. Program Management	Q4 RMP Financial Report	Philip Trowbridge	10/24/18				
Program Management	Bay RMP (2018)	1. Program Management	2019 Multi-Year Plan	Philip Trowbridge	01/31/19				Draft in October '19, Final in January '19
Program Management	Bay RMP (2018)	1. Program Management	2019 Detailed Workplan	Philip Trowbridge	01/31/19				Draft in October '19, Final in January '19
Sediment Strategy	Bay RMP (2018)	Sediment Strategy Support	Updated Dredged Material and Sediment Supply Multi-Year Plan	Philip Trowbridge	10/31/18				
Sediment Strategy	Bay RMP (2018)	Hosting and Support for DMMO Database	Provide technical assistance for hosting and maintaining the DMMO database	Cristina Grosso	12/15/18				Met with Project Team (USACE, USEPA, ExaData, RB2, SFEI) on 5/21/18 to review documentation on the DMMO database and website components, data flow, and roles and responsibilities. The group agreed on the priorities for SFEI, and the long-term goals and objectives of the DMMO database. Next Project Team meeting is scheduled for 7/27/18.
Sediment Strategy	Bay RMP (2018)	Hosting and Support for DMMO Database	Assist with data uploads	Cristina Grosso	12/15/18				USACE staff are compiling an inventory of data templates that are pending upload to the DMMO database.

Focus Area	Project	Primary	Deliverable	Assigned To	Due Date	Due Date Extended	Old Due Date	Status	Comments
Sediment Strategy	Bay RMP (2018)	Hosting and Support for DMMO Database	Develop BETA version of a web-based tool to compile "Tier 1" track records	Cristina Grosso	12/15/18				
Sediment Strategy	RMP SEP	8. North Bay Selenium Synthesis	Monitoring Design Framework Report	Jay Davis	12/31/18				Examination of the linkages between three indicators (water, sediment, tissue), statistical framework for monitoring design and data evaluation, and consideration of analytical methods.
Sediment Strategy	Bay RMP (2018)	Mallard Island SuspendedSediment Monitoring	Data collected, processed, and QA/QCed by the USGS. Data made available to the public once approved.	Philip Trowbridge	12/31/18				USGS subcontract
Sediment Strategy	Bay RMP (2017)	Sediment Monitoring Strategy	Sediment Monitoring Strategy (in collaboration with HWRB Project)	Philip Trowbridge	01/01/19				Draft due 1/1/19; Final due 6/30/19. Part of Healthy Watershed Resilient Baylands Project.
Sediment Strategy	Bay RMP (2018)	Improved Lower South Bay suspended-sediment flux measurements at Dumbarton Bridge	Basic Data Report with sediment flux computations, detail of methods used, and data generated from the study, with no interpretation	Philip Trowbridge	03/31/19				USGS subcontract
Sediment Strategy	RMP SEP	10. Napa and Sonoma Streamgages	Data Products	Philip Trowbridge	06/30/19				For both gauges: suspended sediment and bedload sediment sample results as well as 15-minute records of turbidity, SSC, suspended load, and bedload (depending on rating curves developed) served on the USGS public website.
Sediment Strategy	RMP SEP	10. Napa and Sonoma Streamgages	Presentation	Philip Trowbridge	06/30/19				Presentation slides showing an analysis of sediment loads and comparisons with historical data.
Selenium Strategy	Bay RMP (2015)	Selenium Special Studies / Selenium Sturgeon Tissue Plug Monitoring	2015 Sturgeon Muscle Plug Final Report	Jennifer Sun	09/30/18		05/31/16		Preliminary results presented at the Selenium Workgroup meeting in May 2016 and at the RMP Annual Meeting in October 2016. To get the most value from this deliverable and to be efficient with reviewers' times, this report will be rolled into a larger report on the tissue plug results from 2015, 2016, and 2017. Draft shared with SeWG in May 2018. Final by 9/30/18.
Selenium Strategy	Bay RMP (2016)	Selenium 2016 Derby Monitoring	2016 Sturgeon Derby Final Report	Jennifer Sun	09/30/18		12/31/16		2016 Derby results will be combined with 2017 Derby results in one report. Combining data will make for a better analysis. Draft shared with SeWG in May 2018. Final by 9/30/18.
Selenium Strategy	Bay RMP (2017)	2017 Sturgeon Derby Monitoring	Technical Report on Selenium in White Sturgeon from the 2017 Sturgeon Derby	Jennifer Sun	09/30/18		12/31/17		Draft shared with SeWG in May 2018. Final by 9/30/18. Data from 2016 and 2017 will be combined into one report.
Selenium Strategy	RMP SEP	6. Suisun Bay Selenium Monitoring Study	Upload 2016 and 2017 Tissue Plug Samples to CEDEN	Jennifer Sun	09/30/18				MMP funds
Selenium Strategy	RMP SEP	6. Suisun Bay Selenium Monitoring Study	Field Studies Report (2015, 2016, 2017 Muscle Plug Data)	Jay Davis	09/30/18				MMP funds. Report will combine results for muscle plugs from 2015, 2016, and 2017. Funds from budget year 2015 will for the 2015 Plug Report will be also used for this report. Draft shared with SeWG in May 2018. Final by 9/30/18. SEP deadline is 12/31/18.
Selenium Strategy	RMP SEP	6. Suisun Bay Selenium Monitoring Study	Financial Oversight	Jennifer Sun	12/31/18				Laboratory analysis by USGS and UCD.
Sources Pathways and Loadings	Bay RMP (2016)	STLS Trends Strategy Support	POC trends. Guadalupe Trends Model Report	Philip Trowbridge	07/31/18		12/31/16		Report is in final draft form as is being reviewed by SPLWG and TRC. History: This task started in 2016 but has continued through 2018 will an evolving scope. 2016 Trends Strategy funds were initially used to explore a power analysis using data from four well-sampled watersheds to determine a monitoring program that would be sufficient to track trends. Peer reviewers later recommended additional data exploration in one watershed (Guadalupe River). A trends model for the Guadalupe River was developed and presented to the SPLWG in May 2017. The model was refined in 2017. There was a call with the trends advisors in November 2017. A technical report on the new model was prepared by AMS by 12/31/17. Comments from science advisors and STLS were received by 2/28/18. The report was revised by 12/31/18. Draft was sent to SPLWG/TRC in May 2018. Will be finalized in July 2018..
Sources Pathways and Loadings	Bay RMP (2017)	STLS POC Watershed Characterization	Report on Pollutants of Concern monitoring in WY 2017	Alicia Gilbreath	07/31/18		05/31/18		Draft was sent to SPLWG/TRC in May 2018. Will be finalized in July 2018..
Sources Pathways and Loadings	Bay RMP (2018)	Trends strategy development	Develop a regional trends strategy road map	Jing Wu	07/31/18				Draft : April 2018; Final: July 2018

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Sources Pathways and Loadings	Bay RMP (2018)	Planning Support for Stormwater Alternative Flame Retardants Conceptual Model	Technical Report	Diana Lin	08/31/18		04/15/18		Report drafted. Comments received from ECWG. Waiting for any final comments from SPLWG before finalizing.
Sources Pathways and Loadings	Bay RMP (2018)	Small Tributaries Loading POC Watershed Characterization Reconnaissance Monitoring	Advanced Data Analysis Interpretative Report	Jing Wu	11/01/18				Advanced analysis interpretive report due as a draft by July 2018 and final by November 2018. Preliminary results were presented to the SPLWG in May 2018. Expected internal deadlines: July 13 - Draft internal review July 20 - Draft to STLS review August 31- Draft to SPLWG/TRC review September 30 - Final draft
Sources Pathways and Loadings	Bay RMP (2018)	STLS POC Stormwater-Regional Watershed Spreadsheet Model Support	Provide technical support for RWSM model users	Jing Wu	12/31/18				Written reviews of new versions of the RWSM produced by BASMAA. Provision of any new versions on the RMP website.
Sources Pathways and Loadings	Bay RMP (2018)	Small Tributaries Loading Program Management	STLS management	Jennifer Hunt	12/31/18				STLS Management (meeting agendas, meeting summaries, tracking and addressing action items)
Sources Pathways and Loadings	Bay RMP (2018)	Small Tributaries Loading POC Watershed Characterization Reconnaissance Monitoring	Technical report on the WY 2018 reconnaissance monitoring	Alicia Gilbreath	03/15/19				
Sport Fish	Bay RMP (2018)	2. Governance	Sport Fish WG Meeting	Jay Davis	10/31/18		05/31/18		Sport Fish WG meeting will be in the fall, not the spring.
Status and Trends	Bay RMP (2018)	6. Status and Trends C. 2018 Bivalve Cruise (Summer 2018)	Cruise plan	Ila Shimabuku	07/31/18		06/01/18		Draft in progress. Being reviewed by AMS. To finalize by 7/20.
Status and Trends	Bay RMP (2018)	6. Status and Trends G. 2018 Sediment Cruise (Summer 2018)	Cruise plan	Amy Franz	07/31/18				In progress. Remaining details as of 7/16/18: Getting the special study details from the PIs; adding in staff schedule; determining grain size lab (tried to go with USGS but no response so changing to ALS)
Status and Trends	Bay RMP (2018)	6. Status and Trends G. 2018 Sediment Cruise (Summer 2018)	Manage subcontracts for field and laboratory work & staff cruise	Philip Trowbridge	07/31/18				
Status and Trends	Bay RMP (2017)	6. Status and Trends F. Margins Sediment Study	Final Report for South Bay Margins Sediment Study	Don Yee	09/14/18				Original schedule was: Draft to TRC by 12/31/18; final by 3/31/19. Moved up the deadline to September 2018 to present results at Annual Meeting.
Status and Trends	Bay RMP (2018)	6. Status and Trends C. 2018 Bivalve Cruise (Summer 2018)	Manage subcontracts for field and laboratory work & staff cruise	Philip Trowbridge	09/30/18				
Status and Trends	Bay RMP (2017)	6. Status and Trends L. PBDE Analysis for Archived 2016 Bird Eggs	Analysis of 12 archived tern egg samples. Results reported in an EDD.	Ila Shimabuku	12/31/18				Archive samples will be run at the same time as the 2018 samples. The results will be QA'ed and uploaded along with the 2018 samples. AXYS gathering permits so Paul can ship.
Status and Trends	Bay RMP (2018)	6. Status and Trends J. Sample Archive	Maintain and enhance the Archive Data Sample tool and respond to archive sample requests	michaelw@sfei.org	12/31/18				(1) Standardize vocabulary for station names and other fields (2) Add field for Station Name and separate Station Codes from Station Names (3) Identify and summarize missing data (4) Create an Access query that can be used to provide managers with information on the number of containers and the mass of material in those containers for different container types/uses. (5) Work backwards. First clean up the most recent 5 years of data. Then, extend back to the last 10 years. After 10 years, the archives are less and less useful. 40-50 hours available for Michael. Use 20 hours to take a first cut at the tasks and then have a check-in meeting.
Status and Trends	Bay RMP (2018)	6. Status and Trends F. 2018 Bird Egg Monitoring Data Mgmt	Format, QA, and Upload 2018 Bird Egg Data	Amy Franz	01/01/19				As part of the QA Memo, trend plots of bird egg data will be generated.
Status and Trends	Bay RMP (2018)	6. Status and Trends D. Bivalve Cruise Data Management	Format, QA, and Upload 2018 Bivalve Cruise Data	Amy Franz	03/01/19				
Status and Trends	Bay RMP (2018)	6. Status and Trends H. 2018 Sediment Cruise Data Mgmt	Format, QA, and Upload 2018 Sediment Cruise Data	Amy Franz	03/01/19				