

RMP Steering Committee Meeting

April 26, 2023 9:00 AM – 2:00 PM

HYBRID MEETING In-person: First floor conference room at SFEI Remote Access: <u>https://us06web.zoom.us/j/92590225613</u> Meeting ID: 925 9022 5613 Dial by your location +1 669 900 6833 US (San Jose) +1 346 248 7799 US (Houston) +1 253 215 8782 US (Tacoma)

AGENDA

1.	Introductions and Review Goals for the Meeting	9:00 (10 min)
		Tom Mumley
2.	Decision: Approve Meeting Summary from SC Meeting on January 25, 2022; Confirm Dates for Future Meetings	9:10 (10 min)
	Scheduled SC meetings: August 10, 2023 Set date for MYP: October 25? Nov 1?	Tom Mumley, Group
	Other scheduled meetings: TRC meeting: June 20 2023 Annual Meeting: October 12	
	Materials: SC Meeting Summary, pages 6-18	
	 Desired outcomes: Approve meeting summaries Confirm future SC meeting and Annual Meeting dates 	

3.	Information: TRC Meeting Summary	9:20 (10 min)
	 Topics discussed at the most recent TRC meeting included: updated 303(d) list wet season sampling update S&T update and refined prey fish design Bay margins report and future design floating percentile method report interlaboratory comparison planning Materials: TRC Meeting Summary, pages 19-32 Desired Outcome: Informed committee 	(To min) Jay Davis
4.	 Information: RMP Financial Update for 2023 Quarter 1 The RMP Financial Update summarizes the balance of budgeted and reserved RMP funds as well as its cash position. Materials: Financial Update Memo, pages 33-66 Memo Documenting Funding Requests from the Sediment Workgroup That Were Approved Via Email, pages 67-74 Update on Use of Matching Funds for Destination Clean Bay WQIF Project Desired outcomes: Informed Committee 	9:30 (30 min) Jen Hunt Amy Kleckner Melissa Foley
5.	 Decision: Pursuing WQIF Funding in 2023 The WQIF will again have a substantial amount of funding available. Staff are considering submitting a proposal to expand RMP-funded work on PFAS in stormwater. Materials: None Desired Outcome: Approval of plan to submit a proposal and use RMP funds as match. 	10:00 (20 min) Jay Davis Kelly Moran

6.	Decision: Stormwater CEC Groundwork Project Budget and Scope	10:20
	Revision	(15 min)
	A revised scope and budget for this project was approved by the RMP	Jay Davis
	Stormwater CECs Stakeholder-Science Advisory Team via email in a thread started on March 14	Kelly Moran
	Materials: Email thread, original proposal from July 2022, table summarizing revised budget and scope, pages 75-83	
	Desired Outcome:	
	 Approval of revised budget and scope. 	
7.	Decision: Revised Scope for Prey Fish Component of Status and Trends	10:35
	Staff have refined the proliminary design for the provision component of the power	(15 min)
	S&T design. At their March meeting the TRC recommended the refined design	Jay Davis
	to the SC for approval. The original budget included in the current Multi-Year	
	sampling of PFAS in an additional fish species, improved cost estimates for	
	items in the original budget, and analysis of PCBs in PMU fish to cover an	
	Materials: Powerpoint slides, to be presented at meeting	
	Desired Outcome:	
	 Approve the budget and scope 	
8.	Break	10:50
•		(10 min)
9.	Decision: Process for Consideration of MMP Proposals	11:00 (20 min)
	MMP proposals were funded at the January SC meeting, and the need for a	
	documented process for considering MMP proposals was identified.	Jay Davis
	Materials: Memo on process for consideration of MMP proposals, page 84	
	Desired Outcomer	
	 Approval of the proposed process for consideration of MMP proposals 	

10.	 Decision: Updated SEP List The SEP list was updated based on the discussion at the January SC meeting. Materials: Updated SEP List, pages 85-91 Desired Outcome: Approval of the updated list Information: Progress on Workgroup Strategy Updates and Additional Planning Guidance to Workgroups Update the Committee on the status of updating workgroup strategies and coordination among them, leading to a major update of the Multi-Year Plan for 2024. Discussion of any additional planning guidance to workgroups (item on annual SC calendar from the MYP). Materials: Slides presented at the meeting Desired Outcome: Informed Committee 	11:20 (15 min) Amy Kleckner 11:35 (15 min) Jay Davis
	 Agreement on additional planning guidance to workgroups 	
12.	Decision: Approval of Rationale for Workgroup Formation/Deactivation	11:50 (15 min)
	This topic was on the January agenda but not discussed due to time constraints.	Jay Davis
	Materials: Memo on proposed rationale for workgroup formation/deactivation, pages 91-92	
	Desired Outcome:	
	 Approval of the proposed rationale for workgroup formation/ deactivation 	
13.	Lunch	12:05 (40 min)

14.	Discussion: RMP Website Update	12:45
	Discussion of the new and improved version of the RMP website.	(20 min) Martin Trinh
	Materials: Website pages presented at the meeting	
	Desired outcomes:Feedback on the revised website	
15.	Discussion: Communications	1:05 (30 min)
	Brainstorm on speakers for the RMP Annual Meeting and a featured project for the RMP Update.	Jay Davis
	Materials: Slides presented at the meeting	
	 Desired outcomes: Ideas for speakers and a featured project 	
16.	Discussion: Status of RMP Deliverables and Action Items	1:35 (10 min)
	Materials: Action Items & Deliverables Stoplight Reports, pages 94-105	
	Desired outcomes:	Amy Kleckner
	 Informed committee Feedback on progress and due dates 	
17.	Discussion: Plan Agenda Items for Future Meetings	1:45
	Desired outcome:	(5 min)
	 Identify future agenda items, including science updates 	Tom Mumley
18.	Discussion: Plus/Delta	1:50 (5 min)
		Tom Mumley
19.	Adjourn	1:55

Recently Completed RMP Reports/Products

Lindborg, A. R.; Overdahl, K. E.; Vogler, B.; Lin, D.; Sutton, R.; P. Ferguson, L. 2023. Assessment of Long-Chain Polyethoxylate Surfactants in Wastewater Effluent, Stormwater Runoff, and Ambient Water of San Francisco Bay, CA. SFEI Contribution No. 1126. American Chemical Society.



Bay RMP Steering Committee Meeting

January 25, 2023 San Francisco Estuary Institute

Meeting Summary

Attendees

SC Member	Affiliation	Representing	Present
Eric Dunlavey	City of San Jose	POTW-Large	Y
Amanda Roa	Delta Diablo	POTW-Small	Y
Karin North**	City of Palo Alto	POTW-Medium	Y
Adam Olivieri	BAMSC / EOA, Inc.	Stormwater	Y
John Coleman	Bay Planning Coalition	Dredgers	N
Tessa Beach	US Army Corps of Engineers	USACE	N
Tom Mumley*	SF Bay Regional WQCB	Water Board	Y
Maureen Dunn	Chevron	Refineries	Y

* Chair, ** Vice Chair, alternates in gray and italicized

Staff and Others:

- Jay Davis, SFEI
- Amy Kleckner, SFEI
- Martin Trinh, SFEI
- Jen Hunt, SFEI
- Rebecca Sutton, SFEI
- Diana Lin, SFEI

- Luisa Valiela, EPA
- Gerardo Martinez, SF Bay Regional WQCB
- Xavier Fernandez, SF Bay Regional WQCB

1. Introductions and Review Goals for the Meeting

Jay Davis began the meeting by introducing the new RMP manager, Amy Kleckner. Amy provided background on her previous work with the USGS and the Tiburon Center. Additionally, Gerardo Martinez of the SF Bay Regional Water Board will be taking over for Carrie Austin working on Hg TMDLs under Richard Looker. Following introductions from Steering Committee (SC) members, Tom Mumley briefly reviewed the meeting's agenda. Key agenda items include financial updates, project status updates, workgroup strategy updates, the success of the WQIF proposal, and approval of the 2023 Multi-Year Plan and 2023 budget.

2. Decision: Approve Meeting Summary from MYP Workshop and SC Meeting on November 2, 2022, and Confirm Dates for Future Meetings

Tom Mumley asked the group for any final comments on the previous meeting's summary. Receiving no comments, he continued to confirm the dates for upcoming meetings. The SC meeting was confirmed for April 26, 2023, and the proposed date of August 10, 2023, was tentatively approved. The Technical Review Committee (TRC) will meet on March 29, 2023 and June 20, 2023.

The RMP Annual Meeting has been confirmed for October 12, 2023. Melissa Foley previously confirmed the David Brower Center was available and that SFEI has a hold on that date.

Action Item:

• Send out calendar invitations for the August 10, 2023 SC meeting (Martin Trinh, February 1, 2023)

Decision:

• Karin North motioned to approve the meeting summary. Adam Olivieri seconded the motion. The motion was carried by all present members.

3. Information: TRC Meeting Summary

Jay Davis provided an overview of the previous Technical Review Committee meeting. Don Yee of SFEI relayed the results of the Bay Margins survey. The North Bay work was recently completed and data analysis is currently underway. This completed the whole margins series with general findings of lower contaminant concentrations in the North Bay than other subembayments. Once normalized for TOC, margins concentrations were observed to be lower than open Bay concentrations. Internal review has concluded and a draft report will be delivered to the SC and TRC in February.

Jay outlined the update to the Status & Trends (S&T) monitoring plans. The S&T update will be dynamic as the RMP pilots a new design that emphasizes wet weather sampling. Jay mentioned earlier storms that required TRC input on decisions dealing with sampling feasibility related to complications with equipment availability and data value. Jay reiterated that the RMP would be working closely with the TRC as the S&T design is implemented.

Dave Senn of the Nutrient Management Strategy (NMS) presented on the work done on the recent harmful algal bloom (HAB) and plans for additional analysis. Events such as this prompted the TRC to discuss the desire to develop protocols for event-based monitoring such as fires and floods. Richard Looker suggested that the algae bloom response could provide a foundation for developing these protocols. These discussions will take place following the completion of the MYP update.

4. Information: RMP Financial Update for 2022 Quarter 4

Jen Hunt provided the regular financial update for Q4 of 2022. For 2022, 62% of funds have been expended on the year with 94% of invoiced RMP fees collected. There is a surplus of \$42k that has been reduced from \$138k in the previous quarter after funding for various projects was approved by the SC. Many subtasks within Tasks 1-5 have been closed. For 2021, 80% of funds have been expended with 99% of invoiced fees collected. For 2020, 92% of the budget has been expended and 100% of fees have been collected. For years 2019 and 2018, both years have had 99% of the budget expended and all fees collected. Jen reported earnings of \$14.7k (1.51% rate) from the Q3 LAIF. Jen showed the summary of unbudgeted funds and noted the set-aside funds had been steady in recent quarters. There were no requests for encumbrances this quarter. Requests for funds will occur in later agenda items.

Information: Review the Status of Incomplete Projects from 2022 and Prior Years

Amy Kleckner of SFEI provided a review of the status of incomplete projects from 2018 to 2022. The final remaining project from 2018 is the non-targeted analysis of sediment that has been delayed in large part to instrument issues and shifting priorities of academic partners. This project has revised its deliverables and will require additional funding to meet its new projected deadline of December 2023. The proposed fact sheet/technical report and associated budget will be discussed further in a later agenda

item. The collection, analysis, and report on selenium in sturgeon muscle plugs originally planned for 2019 has been delayed as collections were not conducted in 2019, 2020, 2021, and 2022. Collections planned for March and April of 2023 should allow for completion by the end of summer 2023.

Incomplete projects from 2020 include a report on PCB monitoring with passive samplers in Steinberger Slough and Redwood Creek and a report on the North Bay margins sediment sampling. A draft manuscript has been shared with the PCB workgroup and is expected to finalized later this spring after revisions in response to comments from Frank Gobas. The North Bay margins report has an internal draft under review at the moment and is expected to be completed by the end of January. The bathymetric change DEM and report has completed its data release and the report is under review by the USGS, with an estimated completion timeline of December 2023.

Incomplete projects from 2021 include the S&T design review report that is currently being revised after external comments were received. It is expected to be completed by this spring. The update to the DMMO database is in progress and an extension has been requested to allow time to discuss the DMMO Database priorities with the DMMO Database Project Team. SFEI has subcontracted with Exa to revise the data templates. This work is currently in progress. The DMMO Database Project Team met earlier to review the draft templates. SFEI is working on revising the upload scripts and modifying the database to accommodate the streamlined data template structure and is estimated to conclude by this summer. The toxicology thresholds for CECs report is currently in the data analysis phase and a draft will be provided in April for the Emerging Contaminants (EC) Workgroup. Field work has been completed for PCB remediation monitoring in San Leandro Bay, although a delay in lab reporting results has delayed completion of the report to July 2023. The floating percentile methodology draft report has been completed and will produce a final report by April 2023. Finally, for 2021, the integrated modeling and modeling strategy report is currently being written, with an internal draft estimated to be completed by late February.

For incomplete RMP projects from 2022, data are currently being analyzed for the CECs in urban stormwater. All data have been received and staff are actively working with UW partners to interpret data and prepare a manuscript. An update will be provided at the upcoming ECWG meeting. Model development for the in-Bay contaminant model is currently ongoing with an expected completion of 2027. The Watershed Dynamic Model is also in development with an estimated final timeline of Spring 2024. The CEC modeling exploration draft report is in progress, expecting to finalize by the end of this summer. Samples are being collected for the tire related contaminants project, although this is intended to be a multi-year project. For

ethoxylated surfactants, Lee Ferguson of Duke University has been updating analytical methods so samples are still being analyzed. The report for this effort is expected to be completed in 2024. Data are still being collected by the USGS for the sediment delivery to marshes in Central and North Bay report with an expected completion of 2024.

Incomplete SEP projects include the stormwater flow and sediment to the Bay report and data release for which samples are currently being collected. This effort is expected to be completed by winter of 2023. Data analysis has been completed for the North Bay selenium project, with a report in progress. Melissa Foley is still helping out with this effort and Luisa will pass this report on to Diane Fleck of the EPA. A draft report for the sunscreens in water effort is currently in review and is expected to be finalized in June. The reports for settling velocity of suspended sediment in south SF Bay and sediment flux at Benicia Bridge are complete and are currently being reviewed by the USGS. Samples have been collected for guaternary ammonium compound analysis, which is part of a larger NSF effort. SFEI has completed its input for the Bay land use update and is waiting for MTC to release the data. MTC has the final say on layer release that Tan needs for the watershed model; SFEI has a draft that he is using for now. A draft report is nearly complete for the sediment conceptual model, with an expected finalization in March. A report is currently in progress for the sediment delivery to a south SF Bay marsh effort. A draft report is underway for the Integrated watershed-Bay modeling strategy, with an expected completion by the end of this year. The Regional Watershed Spreadsheet Model Update has been put on hold due to the delay in obtaining land use information from the MTC.

The Committee expressed approval of the timelines presented.

6. Decision: Approve Final Multi Year Plan for 2023

Jay noted that a draft of the Multi-Year Plan (MYP) had been shared at the last MYP/SC meeting. Feedback from the SC and TRC has been received and incorporated, and the document is ready to be approved at this meeting. Deletions from the draft MYP include the deletion of deadlines for the Municipal Regional Stormwater Permit, Mercury and PCBs Watershed Permit for Municipal and Industrial Wastewater, and Nutrient Watershed Permit for Municipal Wastewater in 2022, 2022, and 2029, respectively. Each will keep their renewals of 2027, 2027, and 2024 respectively. Additionally, pH, temperature, salinity, and hardness have been removed from the ongoing Determination of Wastewater Permit Limits. Finally, the new state plan on effluent and receiving water toxicity is no longer a driver. Edits and additions to the Decisions, Policies and Actions include the implementations of the mercury and PCB TMDLS in 2027, 303(d) and 305(b) reports in 2023, 2026, and 2029, updates to the CEC tiered risk-based framework, current use pesticide driver, copper driver, and tribal and subsistence use as a potential future driver. Tom thanked Luisa for suggesting many of these edits.

Decision:

• Eric Dunlavey motioned to approve the final Multi-Year Plan for 2023. Adam Olivieri seconded the motion. The motion was carried by all present members.

7. Information/Decision: Update on SEPs and MMP Funds

Jay began this item by asking the Committee to reaffirm the current SEP list, explaining to the Committee that it is useful for Tom to ensure the list is current and updated. Rebecca Sutton brought up the new pilot for PFAS in harbor seals and porpoises that may be accomplished solely through alternate funding. SEPs that are currently underway include the \$119K temporal variability in sediment delivery to a North and a Central San Francisco Bay salt marsh that is expected to be final at the end of February and the new \$252K algae bloom data analysis. Regarding cleanup of the SEP list, Eric suggested the year proposed seems an obvious place to start for determining at a high level whether a project might have become "stale" if it has not been pursued for more than 5 years for example. It would not automatically boot a project off the SEP list but would signal the project is in need of closer re-consideration. The Committee reaffirmed the current SEP list.

Jay requested Committee decisions on whether to fund two proposals to use MMP funds. The first proposal was presented previously at the November meeting. The Analysis and Reporting of Non-Targeted Analysis (NTA) for Sediment Data could not be completed by the analytical lab (Lee Ferguson of Duke University) so work will be completed by SFEI. Rebecca Sutton presented four funding options. The first choice is completing a technical report only for \$22.8K with the addition of a fact sheet for a total of \$34.1K. An alternative is to produce a manuscript for \$26.3K, with the option to add a fact sheet for a total of \$37.6K. The upgrade from a technical report to a manuscript would be an additional \$3.5K with the addition of a fact sheet to either option an additional \$11.3K. Becky urged the Committee to think of their target audience for these products. The technical report would be most apt for Committee members and other parties already familiar with the subject. Meanwhile a manuscript would be more accessible to the broader scientific community. There is already much interest in the paint pigments from yellow road paint and if this information is disseminated correctly, it is likely an interested party could help develop future methods. Fact sheets are great concise ways to communicate to everyone. Becky reiterated it is up to the SC how much they are willing to spend and who they want to reach. Tom expressed his support

for any effort that helps show the efficacy of NTA and that would help the RMP become less dependent on academic labs. Amanda gave her vote of support for fact sheets, stating they were more likely to be read and understood by all parties, with Eric seconding this, noting fact sheets were easy for stakeholders to disseminate to peers. Maureen liked the idea of a fact sheet with the caveat that preliminary data from NTA are not used for regulatory purposes.

The second MMP proposal is a new one that has been developed by Becky Sutton with the approval of Melissa Foley. This PFAS in Archived Sport Fish Communications Supplement would supplement a 2022 special study of PFAS in archived sport fish and include the production of a manuscript and presentation at a conference. The Water Board provided funds to this project. Becky explained that the original proposal was a bare bones report. However, motivated by fish consumption as an important exposure pathway, comparable to drinking water, the RMP is hoping to reach larger audiences with these findings. With new analytical methods that encompassed 40 analytes (up from the previous availability of 13 analytes) and the ability to tease out temporal trends. Tom supported disseminating this data but expressed concern that some findings may be sensationalized. Karin agreed that peer-reviewed journals and conferences are a good way to increase RMP visibility. Adam inquired if a short communication would suffice as it is less expensive and labor intensive.

Jay will bring a suggested process for handling MMP proposals to the SC at the April meeting. There is no procedure at the moment.

Action Items:

- Include NMS projects in the SEP list (Jay Davis, February 28, 2023).
- Bring a suggested process for handling MMP proposals to the SC at the April meeting (Jay Davis, April 26, 2023)
- Jay coordinate with RMP staff to clean up the current SEP list, share it with Tom, and then bring it to the SC at the April meeting (Jay Davis, March 30, 2023)

Decisions:

- The Committee reaffirmed the current SEP list.
- Maureen Dunn motioned to approve the completion of a manuscript and fact sheet for the Analysis and Reporting of Non-targeted Analysis (NTA) Sediment Data. Karin North seconded the motion. The motion was carried by all present members.
- Adam Olivieri motioned to approve the PFAS in Archive Sport Fish Communications Supplement. Karin North seconded the motion. The motion was carried by all present members.

8. Decision: Funding Request for Sampling Additional Storms

Alicia Gilbreath of SFEI presented a request for additional funding to sample additional storms in the current water year. With WY2023 already including the second wettest 21-day period in SF in the last 180 years, the RMP has exhausted the funding allocated for this water year. Originally, the stormwater team requested \$10K of funds this year in addition to \$80K of unused funds rolled over from previous years for a total of \$90K to support Pollutants of Concern (Hg, PCBs, and suspended sediment) monitoring. The effort was intended to be a multi-year study to support loads modeling and trends tracking by sampling four to six storms at three flow-gauged locations over two to three years. The study sought to optimize sampling methods for a cost-effective monitoring program to address reductions in pollutant loads required by TMDLs, while comparing strategies for determining annual pollutant loads and determining the power and sample size needed to detect declining trends in concentrations. Earlier years determined that sampling a first flush, a large storm event, and 4-6 total samples per year achieved a decent middle ground of power.

Alicia showed a table that displayed which type of storm had been sampled for each site. Each site still needed a large storm with Guadalupe River and Walnut Creek missing their first flushes. With an extremely strong and able stormwater team this year, Alicia estimates the RMP would be able to handle up to six more events at a cost of \$12K per event (\$7K for sampling and labor with \$5K for laboratory analysis) for a total request of up to \$72K to be spent pending the occurrence of targeted storms. Unspent funds would be returned after the wet season. This work would support the developing Watershed Dynamic Model that addresses PCBs and Hg with Tan confirming this number of storms was sufficient to support the model. The TRC echoed strong support for this request. Alicia clarified that sampling more storms now could decrease the need to sample storms in later, potentially drier years. Maureen inquired as to why two sites were not able to be sampled at first flush, with Alicia explaining a variety of factors contributed to this especially as Guadalupe River and Walnut Creek are rain shadowed. Tom weighed in, clarifying that first flush is variable depending on the watershed and pollutant. \$90K has already been expended this first year of a three year effort. Committee members noted that the upcoming PCB TMDL should be a priority with first flush data for Guadalupe River deemed important. Tetra Tech monitored Hg in the Guadalupe watershed this year and has hit their guota so nobody is currently slated to monitor future events there. Eric stated that with the wet year the Bay Area is currently experiencing, SFEI should take advantage of this opportunity.

The Committee inquired about SFEI's ability to sample multiple sites in the same storm. Alicia clarified that this was the strongest stormwater team in recent years with

seven to eight potential leads. Maureen voiced support for this, along with Tom. Dialogue will continue at the Sources, Pathways, and Loadings Workgroup meeting. If six storms do not occur this water year, the funds would not automatically roll over to future years and be returned instead.

Decision:

• Karin North motioned to approve the allocation of \$72K (initially from the 3022 unallocated funds, then from SEP MMP funds if necessary) to support the POC study in the case of six additional storms this year. Maureen Dunn seconded the motion. The motion was carried by all present members.

9. Information: Progress on Workgroup Strategy Updates

Jay will send slides to the SC summarizing the progress workgroups are making in determining their strategy for the upcoming MYP redesign. The SC and TRC will be able to share feedback at their respective upcoming meetings.

10. Discussion: Factors to Consider in Activating or Deactivating Workgroups

Jay will send an email to the SC outlining the proposed procedures in determining the status of workgroups.

11. Discussion: Adding an Advisor to the Microplastic Workgroup

Diana Lin of the Microplastics Workgroup proposed the addition of an advisor to the Workgroup. The upcoming Microplastics Strategy aims to provide pivotal guidance for the RMP and other collaborators by revising management questions, prioritizing monitoring data needs, providing leadership in steering science and management discussions, and demonstrating RMP collaborative approach and philosophy for the upcoming State Plastics Monitoring Strategy. The Ocean Protection Council (OPC) just approved \$3.6 million to address plastics with \$750K reserved for a Statewide Plastics Monitoring Strategy and Plan. There is also a \$2.5 million proposal to implement a pilot monitoring program. At the moment, the Microplastics Workgroup only has one advisor, who has been influential in determining the new strategy recently approved by the SC. Diana proposed adding a new advisor, Dr. Barbara Beckingham, an associate professor at the College of Charleston, South Carolina. Her research on legacy and emerging contaminants, with an emphasis on microplastics and tirewear particles align with those of the RMP. Her engineering and chemistry background will provide valuable guidance on the Microplastics Strategy. The budget to add an advisor would be \$2.5K annually for

the honorarium as well as \$2K for travel expenses in the event that the RMP returns to in-person meetings. Tom and Luisa inquired as to the level of OPC and statewide support, with Tom expressing that he has become more supportive of microplastics work as statewide and third-party support has increased recently.

Decision:

• Eric Dunlavey motioned to approve the addition of Dr. Barbara Beckingham as an advisor to the RMP Microplastic workgroup. Amanda Roa seconded the motion. The motion was carried by all present members.

12. Discussion: Funding Additional Items as Part of Status and Trends

Continuing discussion from the MYP workshop, the SC discussed whether regular pathway monitoring should be included in S&T as an early indicator and if model maintenance tasks should be moved out of the special studies budget and into the S&T budget or other long-term pot of funding. Jay proposed a decision process that starts with special studies under ECWG (similar to other S&T matrices). High priority CECs that are identified become candidates for S&T pathway monitoring with proposed monitoring feeding into the S&T review process outlined at the MYP Workshop (starting with the S&T Review Subcommittee [S&TRS] then reviewing with advisors after which designs are finalized by the TRC and then approved by the SC). The S&T design will be reevaluated after three years but possibly sooner. Adam Olivieri reminded the group of the significant costs committed to the last redesign of the S&T this past year, but Jay stated that regular check-ins (as opposed to the first redesign in twenty years) would be significantly cheaper. Tom supported this structure.

Model maintenance does not fit neatly into the S&T, so Jay has proposed creating a new category for these necessary funds. Proposed titles include "long term elements, core elements, model maintenance". Examples of model maintenance currently needed include the watershed dynamic model (\$50k/year starting in 2024) and the in-Bay fate model (\$150K/year starting in 2026). Jay brought forth a proposed process to address model maintenance. Proposed scopes would be peer reviewed by relevant workgroups with approved scopes reviewed by the TRC and then approved by the SC. However, funds would come from the new budget category. After work is performed, future scopes will be reviewed every two to three years by the relevant workgroup. Eric noted a concern about the turnover of both models and modelers as time goes on, questioning what would sustain nutrient work in the future. Tom explained that model maintenance would be essential. Adam suggested charging fees to what are open source models at the moment, with Eric seconding this. However, with the influx of EPA money, this will

have to be discussed further in the future. This could be housed under the EPA's new program office with an understanding that a certain amount of funds are needed to support O&M. This could be a place to look for base funding in the future. Tom also emphasized that the RMP's relationship with the USACE is as strong as ever. As the RMP enters workgroup season and the annual special studies funding process, the summer SC meeting will be a key checkpoint. The Committee gave a general consensus of allowing Jay to create the appropriate funding categories as necessary.

Action Items:

• Prepare a proposal for WDM maintenance for review by the SPLWG (Tan Zi, May 2023)

Decisions:

• Allow inclusion of pathway monitoring in S&T and model maintenance in a separate long-term funding category following the process outlined in this item.

13. Information: Successful Water Quality Improvement Fund Proposal – Destination Clean Bay (and Carquinez Strait Fish)

Jay reviewed the successful Water Quality Improvement Fund (WQIF) proposals the RMP recently submitted and had been involved in. Destination Clean Bay was a joint proposal by the RMP and NMS that aims to identify optimal paths to meeting water quality goals by using monitoring and modeling as decision support tools. Observations made through monitoring will inform the modeling decision support tools that will aid in the development of management plans. The EPA will provide matching funds of approximately \$3 million to support this effort. Task 1 will prioritize data collection for model development with \$980k provided by the EPA. The RMP will monitor local tributaries and Bay water for PCBs, CECs, and nutrients. The EPA funds will primarily be allocated for labor. The CEC stormwater task was allocated \$287k for labor and direct expenses, including \$30k for labs and \$67k for equipment such as the development of remote samplers. The NMS will focus on monitoring shoals and developing remote sensors to track suspended sediment and nutrients in the open Bay. Task 2 will focus on creating models to estimate PCB, CEC, and nutrients loadings from the watersheds of the SF Bay. With \$1.22 million in funds from the EPA, Task 3 will focus on creating a management toolbox to evaluate the fate and transport of sediment. PCBs, and CECs using models. Task 4 will be supported by \$780k of EPA funds to evaluate future scenarios and identify nutrient management alternatives and nature-based solutions. Jay clarified that this collective effort will occur over a timeline of four years.

Jay concluded the item by sharing a WQIF project that will complement the RMP. All Positives Possible (APP), a community-based organization that supports African-American community members based in Vallejo, will lead the Carquinez Strait Fish and Preservation Project. With a total budget of \$949k, the effort will involve RMP-style and citizen science fish collection and include a consumption survey. \$400k will be available to SFEI (and subcontractors) to lead fish monitoring efforts. The study will be fully comparable to RMP studies and will focus on mercury (Hg), PCBs, and PFAS. This effort is expected to be conducted in this upcoming year.

Karin expressed concerns about staffing and budget to support these efforts but Jay assured the Committee that SFEI will be proactive in hiring as well as finding staffing options.

14. Discussion: Communications

For this agenda item, Jay gave a brief review of various RMP communication products. Jay thanked all involved for their contributions to the 2022 Pulse. Keeping up with the theme of the 50th Anniversary of the Clean Water Act, Jay contributed to an op-ed published in the San Francisco Chronicle reflecting on the Act. Content from the Pulse has also been the basis of recent presentations to the San Mateo County CCAG and Contra Costa Clean Water Program Management Committee.

Jay then gave a quick summary of attendee feedback following the 2022 Annual Meeting. 85 people attended the event in person at the David Brower Center, joined by 245 online participants on Zoom. Survey results indicated favorable feedback, with the hybrid format and individual speakers being lauded in particular. The Center has been reserved for October 12, 2023 for the upcoming Annual Meeting. Jay informed the group that the Estuary News will be sunsetting, with its final issue coming in March 2023. Ariel Rubissow Okamoto has expressed interest in a final RMP article related to the issue theme of restoration.

Jay concluded the item by reviewing the communications strategy developed by the Steering Committee in 2014. He noted that many communications elements have changed over the years, for example noting how the Annual Meeting's new hybrid format has allowed for a wider audience. A poll was sent out to survey SC and TRC members on which communications products to prioritize.

The SC unanimously agreed that the website should be a priority. Luisa suggested that SFEI investigate which pages are drawing the most web traffic, making sure to prioritize those pages in the redesign. Eric agrees that the website update will be integral to communications, with the website serving as a landing spot for other

resources and should be among the primary locations the RMP can direct interested parties to. With many efforts being conducted on environmental justice and fish data, Maureen questioned the group on the best way to get that data to the public. Luisa suggested one-page summaries as accessible material that could feature on the website. Tom supported Luisa's one-page summary and Jay's fact sheet suggestions, stating that investing the time to create concise, communicable products using simple language would benefit both the public as well as Committee members. Adam reiterated that key resources such as presentations, executive summaries, and abstracts should be easily accessible on the website.

15. Discussion: Status of RMP Deliverables and Action Items

Amy briefly reviewed the status of RMP deliverables and action items, which can be found in further detail in Agenda Item 5.

16. Discussion: Plan Agenda Items for Future Meetings

Jay will work with Tom and Karin to plan agenda items for the upcoming SC meeting on April 26, 2023.

17. Discussion: Plus/Delta

The group commended Amy's work in contributing to her first SC meeting. The SC will target a return to a hybrid meeting format for upcoming meetings.

18. Adjourn



Bay RMP Technical Review Committee Meeting

March 29, 2023

Meeting Summary

Attendees

TRC Member	Affiliation	Representing	Present
Yuyun Shang	EBMUD	POTW	Yes
Mary Lou Esparza	Central Contra Costa Sanitary District	POTW	Yes
Tom Hall	EOA, Inc.	POTW	Yes
Heather Peterson	City and County of SF	CCSF	Yes
Anne Hansen Balis	City of San Jose	POTW	Yes
Bridgette DeShields*	Integral Consulting	Refineries	Yes
Chris Sommers	BASMAA (EOA, Inc.)	Stormwater	Yes
Shannon Alford	Port of San Francisco	Dredgers	No
Richard Looker	SF Bay Regional WQCB	Water Board	Yes
Luisa Valiela	US EPA	US EPA-IX	Yes
lan Wren	Baykeeper	NGOs	No
Jamie Rose Sibley Yin	US Army Corps of Engineers	USACE	Yes

Staff and Others

- Jay Davis SFEI
- Amy Kleckner SFEI
- Bryan Frueh City of San Jose
- Tom Mumley SFBRWQCB
- Paul Salop AMS
- Xavier Fernandez SFBRWQCB

- Warner Chabot SFEI
- Rebecca Sutton SFEI
- Miguel Mendez SFEI
- Don Yee SFEI
- Martin Trinh SFEI

1. Introductions and Review Agenda

Bridgette opened the meeting with a round of introductions and previewed the upcoming agenda. Jamie Yin from the US Army Corps of Engineers was introduced to the TRC as she will be replacing Tessa Beach going forward. Jamie has previous experience working with the Delta RMP. The new RMP manager, Amy Kleckner, was formally introduced to the TRC as well. Jay proceeded to outline upcoming agenda items: updated 303(d) list by the Water Board, Wet Season S&T Monitoring Update and Design, Bay Margins Sediment Survey, and Floating Percentile Method Report.

Action Item:

- Send Charter and Multi-Year Plan to Jamie Yin (Jay Davis, April 15, 2023)
- Decision: Approve Meeting Summary from December 8, 2022, and Confirm/Set Dates for Future Meetings and Confirm TRC Chair

Bridgette DeShields asked the group for any final comments on the previous meeting's summary. Receiving no comments, Bridgette confirmed the dates for upcoming meetings. The next TRC meeting was confirmed for June 20, 2023. The TRC scheduled the fall meeting for September 19, 2023. To end this item, the TRC approved the December meeting summary and reconfirmed Bridgette DeShields as chair, with her acceptance.

Action Item:

• Send out calendar invites for June 20, 2023 TRC meeting (Martin Trinh, April 15, 2023)

Decisions:

- The motion to approve the December TRC meeting summary was carried by all present members.
- The motion to reconfirm Bridgette DeShields as meeting chair was carried by all present members.

3. Information: SC Meeting Summary from January 25, 2023

Jay Davis went over the notable items from the January Steering Committee meeting, beginning with the approved Multi-Year Plan (MYP) and Mandatory Minimum Penalty (MMP) projects. Analysis and reporting of Non-Targeted Analysis for Sediment Data and the PFAS in Archived Sport Fish Communications Supplement were approved by the SC, but the Committee identified a need to formalize a process for reviewing MMP proposals. Luisa Valiela asked Tom Mumley if he preferred to have a ranked list to assist prioritizing and identifying needs. Tom clarified that MMP funds can be amassed without having to be assigned, with Xavier Fernandez agreeing that it is good to have projects in the pipeline. Chris Sommers reminded the TRC that a barebones process used to exist and could be revived. The SC should confirm that the current SEP list is up to date, with the TRC potentially adding periodic reviews of the list throughout the year. The TRC is hesitant to add to the workload of the RMP workgroups, but Chris suggested that appropriate workgroups annually receive the list of applicable SEP projects with suggested modifications from RMP staff and provide input on the list, including what to take off of it. Additionally, the SC approved the addition of Dr. Barbara Beckingham as an advisor to the Microplastic workgroup

The SC also allowed for the inclusion of pathway monitoring in S&T and model maintenance in a separate long term funding category.

Other notable topics from the Steering Committee meeting, such as the status of incomplete projects, approval of additional funds for wet season monitoring, and communications products were also on the March TRC agenda.

Information: Water Board Presentation of Updated 303(d) List

Xavier Fernandez of the San Francisco Bay Regional Water Quality Control Board provided an overview of the recently updated 303(d) list with an integrated report set to be released for Region 2. Xavier reported there would be 14 new listings for indicator bacteria in the Bay, with four listings being driven by shellfish harvesting use. Xavier clarified for Luisa that these bacteria listings were all beaches, but Chris informed the group that there are a few freshwater surface waters (creeks) proposed for listing based on bacteria (Castro Valley Creek and Lower San Mateo Creek). Other notable items have been listed as Category 3 due to insufficient data, but beneficial uses are potentially threatened. Temperature, ocean acidification, and microplastics are being considered. A brief discussion ensued on microplastics, with Tom Mumley explaining that Richard Looker and he had microplastics classified as category 3 which is essentially a watch list. Tom clarified for Luisa that data collected by SFEI would not need to be submitted to the state database. Tom Hall inquired if bacteria listings were linked to shellfish harvesting, with Xavier clarifying that the Water Board was currently investigating that. The time may have arrived for the RMP to monitor bacteria in the Bay, especially in relation to shellfish harvesting water quality. The 4 beaches with listings driven by shellfish harvesting are Crown Beach, Encinal Beach, Fort Baker (Horseshoe Cove), and Keller Beach.

Jay inquired if there were any data needs the RMP could fill, particularly regarding ocean acidification. Xavier clarified that drivers like climate change are outside of the scope of the RMP and not actionable. Luisa offered to connect Jay to labs at UC Davis working on this. Tom Hall mentioned efforts at SCCWRP that feature Lorien Fono on the technical advisory group. Tom Mumley referenced the new listing of dissolved oxygen in the Pacific as an outgrowth of SCCWRP studies and increased coastal monitoring.

5. Discussion: Wet Season Sampling Update

Alicia Gilbreath of SFEI gave an update on this year's historic wet season sampling. To date, this year has recorded 154% of the normal rainfall and currently ranks as one of the top five wettest wet seasons in San Francisco's rainfall record. This is in stark contrast to the drought-like conditions of the previous years. This has allowed the stormwater team to obtain samples for a variety of efforts for both legacy and emerging contaminants for both the Water Board and EPA. However, Priority Margin Unit (PMU) samples remained elusive until earlier this week, when the planets aligned to allow the storm team to sample for PCBs near the GE property at low tide. To accommodate the increased rainfall, the SC approved a request for additional stormwater funds to sample potential future storms this year for Pollutants of Concern (POC: PCBs, total Hg, and SSC) monitoring.

Alicia clarified for Yun Shang that results of the PMU monitoring could be available by later this year or early 2024, with Luisa inquiring if these data could be expedited. Chris commented that EOA had also been experiencing delays with AXYS for data release. Tom pointed the RMP to Setenay Frucht as the Water Board's point of contact for PCBs.

Don Yee was asked about the viability of remote samplers for tidal areas and CECs sampling. Luisa inquired about the security of leaving these samplers out, but Don clarified that tidal channels tended to be more gentle and pointed to the recent PMU sampling that deployed a passive sampler near the Oakland flea market.

Action Items:

Do what we can to expedit the turnaround of the GE data (Amy Kleckner, June 30, 2023)

6. Discussion: S&T Monitoring Update and Design

Jay introduced this agenda item by informing the TRC that it would remain a standing item during the early implementation phase of the S&T redesign. Amy proceeded to give an update on the S&T monitoring occurring in the past year as well as in the upcoming year. She began by reviewing the timing of the various S&T efforts with wet season water sampling ongoing between October and April, dry season water along with Bay sediment by SFEI and AMS between July-September, near-field prey fish and sediment along with margins sediment with Moss Landing Marine Labs in August, and marine mammals with the Marine Mammal Center beginning now through September.

Going into further detail, Amy reviewed the S&T monitoring that had been conducted earlier in the season to measure contaminants of emerging concern (CECS: PFAS, bisphenols, and OPEs). Four targeted near-field and four paired deep Bay stations were sampled three times in WY 2023. The upcoming dry season sampling will include sampling for PFAS, bisphenols, OPEs, Cu, and CN from 22 stations distributed across the five Bay segments: Six of these stations are fixed: one in each of the five subembayments and an additional one in the LSB. 16 sites will be randomly selected using the GRTS framework. Marco Sigala (SJSURF) will conduct the sediment sampling occurring in the dry season. 12 targeted stations were selected to overlap with wet season water sampling, with PFAS, bisphenols, TOC, N % solids, grain size to be sampled in August 2023. The same analytes will be sampled at 12 random stations in the margins. 17 total stations (seven targeted stations (1 in each subembayment + 2 more from CB/SB/LSB) and 10 random stations (all located in the CB/SB/LSB region) will be sampled for the deep Bay sediment effort for PFAS, bisphenols, TOC, N % solids, grain size, and PBDEs (to be discontinued after this year). The water cruise will most likely embark on the TomCat again following a successful outing in 2021. However, there have been issues scheduling a sampling vessel for the sediment efforts. The USGS Turning Tide, used for the 2018 effort, is not available this year, nor is the IEP Endeavor. The TomCat remains an option, as a winch will be installed in May. The CSUM Questuary is also available for use as it has an operating hydraulic A-frame and winch, however, it does not have a lot of deck space. Other options include chartering sport fish vessels, but this remains an expensive last resort.

Jay proceeded to expand on the near-field sediment and prey fish pilot effort. Currently 12 stations have been budgeted for sediment and fish, which will be sampled concurrently by Marco Sigala. The effort will focus on areas where there is an overlap with near-field wet season water, PCB PMU, and sport fish sampling. At the December meeting, the TRC discussed adding the airport stations. The effort will collect Mississippi silverside or topsmelt as primary indicator species at 12 stations with three composites per station for PFAS analysis. Samples will be archived for potential analysis of other contaminants (e.g., bisphenols, OPEs, other CECs, PCBs). There have been indications of bioaccumulation of bisphenols and OPES, although not as strong as PFAS, so some samples will be archived. The original draft had a budget in the MYP of \$120K. Following more detailed planning, Jay requested an additional \$31K to fund the inclusion of staghorn sculpin collection at nine stations (1 composite per station, totaling \$19K, with other additional costs of \$12K). Sculpin had the highest levels of PFAS in a previous prey fish pilot study. An additional request of \$7K was made for analysis of PCBs at PMU stations in San Leandro Bay, which covers an element of the PCB multi-year plan).

A marine mammal pilot will begin this year with 2023 as year one of a two year special study. The goal is to analyze 10 harbor seals and 10 harbor porpoises, with animals recovered within the Bay as the highest priority. SGS AXYS will analyze PFAS in the liver and serum, while the Crimmins lab (AEACS, Clarkson Univ.) will conduct nontarget analysis (NTA) of liver and blubber. The Hoh lab of SDSU will also conduct NTA of blubber. The Marine Mammal Center is collecting the samples starting now (April 2023). The end goal of this effort is to provide a recommendation to the final S&T study design by June 2025.

Amy concluded her section by reporting that the S&T Design Report currently had a draft in review. Following final advisor comments, a final draft is expected to be delivered on or around early June 2023.

Decision:

• The Committee approved of the proposed funding for the prey fish pilot study.

7. Break

8. Discussion: Bay Margins Sediment Survey – North Bay Report and Future Design

Don Yee reviewed the 2020 North Bay Margins Sediment results. The North Bay study was the last in the series of margins pilot studies, with Central Bay completed in 2015 and South Bay in 2017. The objectives of the study were to assess contaminant concentrations in the margins and determine whether those levels are of concern and if they are different from concentrations measured in the open Bay. The South Bay margins constitute a much larger proportion of area relative to the North Bay, which is in turn larger than the Central Bay. The North Bay margins were expected to be influenced

by the heavily industrial land use (e.g., refineries) and Delta inputs, including mercury from historic gold mining in the Sierra. This effort completed the boxed set. Comparing total Hg in the North Bay to the whole Bay, highest concentrations most likely resulted from large watersheds and had some redistribution. PCBs more met expectations with South Bay and Central Deep Bay concentrations at lower concentrations than their respective margins, although the opposite trend was observed in the North Bay. Many pollutants show significant correlation to fines and TOC across margin regions. Evaluating all the margins against each other, concentrations in the CB margins were higher. Isolating comparison between just the North and South Bay, the South Bay was found to have higher concentrations using raw values, but even normalized, those values were decidedly higher.

In conclusion, as expected, concentrations in the NB margins were lower than those in the CB margins, due to fewer high sources/loads and large diluting clean Delta loads. NB margins concentrations were also less than those found in the SB margins, likely due to lower inputs and faster hydrodynamic turnover. Looking at raw values, the NB margins were surprisingly lower than concentrations found in the deep North Bay. Normalizing TOC flips concentrations back to being higher in the North Bay margins than the deep North Bay.

Overall, observations somewhat followed expectations for legacy contaminants. Margins concentrations were highest in the Central Bay followed by the South and North Bays respectively. For PCBs, concentrations were highest in the margins as compared to the deep Bay (except for in the North Bay). Hg was found to be higher in the deep Bay than the margins in NB & SB. Since sampling density in NB and SB was low, it cannot be definitely concluded there are no "hotspots in the North Bay, but it is likely any potential hot spots would not be abundant.

Don is working on completing the final margins report and requests any comments/edits by April 12, 2023. He noted this effort was a good start, but continued to state that sample counts were much lower than the samples taken in the Central Bay. The North Bay may have hotspots even if they are not abundant. Finding these potential hotspots through random sampling requires huge N or luck.

For the upcoming round of sampling, Don described the plan for S&T sampling at 12 targeted "near-field" sites at some repeat sites to evaluate trends near known expected sources, often upstream of margins "frame". The proposed plan for margins sampling calls for 24 stations, including new GRTS sites for discovery and some fixed stations. The proposed plan calls for 17 eep Bay sites sampled for CECs every 5 years (7 historical +10 GRTs random CB/SB/LSB) and 27 sites sampled for CECs and

CTR/legacy contaminants every 10 years (possibly 7 historical + 5 GRTS repeat + 15 GRTS random).

Tom Mumley inquired as to what benefit is there in continued margins sampling, given the lack of a major difference between margins and deep Bay and the plan for near-field sampling to monitor watershed loading. Don noted the importance of margins habitat for exposure of humans and wildlife, an area for entry of new contaminants, and the lack of data for this area. Jay noted this work had already been included in the budget and redesign report. Tom agreed on keeping margins sampling roughly as planned, and pointed out the need to coordinate with the Wetland Regional Monitoring Program. Luisa Valiela agreed on coordinating with the WRMP and suggested scheduling a meeting with Christina Toms to discuss fixed stations to complement WRMP biological monitoring and fill the sediment contaminant monitoring data gap for the WRMP. Xavier Fernandez supported this action item. The Committee approved of the deep Bay 5 year design (7 historical + 10 GRTS random CB/SB/LSB), and stated that the deep Bay 10 year design can be decided further down the road.

Decisions:

- The Committee approved of moving forward with margins monitoring.
- The Committee approved of the 5 year sampling plan for the deep Bay (7 historical + 10 GRTS random CB/SB/LSB)

Action Items:

- Schedule a meeting with Christina Toms to discuss possible coordination of RMP fixed station locations with the WRMP (Amy Kleckner, May 15, 2023)
- Check with Marco Sigala on whether he can wait until the June TRC meeting for a final decision on margins sediment sampling locations (Amy Kleckner, April 30, 2023)
- Either schedule a TRC call before the next meeting or have an agenda item at the next meeting to present a recommended design for approval (Amy Kleckner, June 20, 2023)

9. Discussion: Floating Percentile Method Report

For this agenda item, Don reviewed the recently completed Floating Percentile Method Report. The goal of this effort was to derive sediment thresholds for "surface" vs "foundation" re-use based on distribution of local paired chemistry and toxicity tests. Commonly tox thresholds are determined for chemicals one at a time in lab tests, while for specific locations toxicity might occur at higher or lower concentrations due to antagonistic or synergistic effects of multiple chemicals and ancillary characteristics. Thus the FPM attempts to find appropriate local thresholds based on the results of local tox tests. For this effort, we collated local data, most of it from RMP and the DMMO databases. For sediment re-use, biota are more exposed to surface sediments, so it is desired that they be less toxic (in this case the 5th percentile was sought), while foundation sediments are buried deeper with less exposure to resident biota, so can be more toxic, and 75th percentile was calculated.

FPM was used in a 2004 report to the Coastal Conservancy/Port of Oakland comparing different methods of deriving sediment quality guidelines. When SFEI attempted to use the tool with several analytes at once like in the prior effort, it was shown to be unstable. When datasets were duplicated for analytes and given dummy names, the first analyte had different surface and foundation results, but the dummy analyte just went straight to its max value for both. Similar issues were found with unduplicated data, e.g. if the names for As and Zn data were swapped in in the source data table, thresholds would be expected to be swapped, but instead totally different results were obtained. Because of this, the FPM calculations were conducted one analyte at a time.

Major differences in this effort as compared to 2004 were that the prior effort ignored non-detects, leaving the data set truncated. This was likely an artifact of increased foundation and surface values (e.g., 50% NDs yield surface value > median).

PAHs were an example of a well behaved dataset, with few non-detects, and many detected samples without toxicity, so a concentration where a 5th percentile of the toxic results were found could be determined. Through a middle range of concentrations around 1000, the frequency of toxicity found rises rapidly, suggestive of PAH-caused toxicity, and a 75th percentile concentration in toxic samples is also easily found.

In contrast, chlordanes were an example of a problematic dataset. Over half of the results were non-detect, and within that half of samples that were non-detects, nearly 40% of the all toxic samples with chlordanes reported were found. In this case, the 5th percentile of toxic results is indeterminate, so the surface calculation instead is set at the concentration where increasing concentrations appear to start increasing the incidence of toxicity. The 75th percentile is still in a quantitative zone though, with toxicity rising continually with increasing concentrations.

When analytes were run one at a time we were able to calculate low and high percentiles of toxic results for each of the chemicals, using the 5th and 75th percentiles for most cases. Interestingly, the FPM foundation (75th percentile) results for both amphipods and mollusks were in a pretty similar range as the 2000 Water Board surface sediment criteria. Looking at the results from the prior FPM study, it also

appears the analysis sequence artifact impacted their calculations, as only a few of the analytes had differing surface and foundation results.

For the surface values, 5% of toxic hits were used like in 2004. Usually, <30% of all samples (including non-toxic) occur below the FPM-derived surface value. Results were often 10x or more lower than 2004 FPM results and all well below SFBRWQCB surface criteria.

In conclusion, FPM was limited by reported/considered analytes. Unreported analytes may drive toxicity and synergism was unaccounted for (e.g., 1 analyte at 7th percentile vs 10 analytes at 4th). Single analyte FPM resulted in much lower surface and foundation than 2004, however multi-analyte FPM were unlikely to yield higher surface guidelines. SFBRWQCB surface values were near the FPM foundation values (75% of tox hits). FPM surface values would need to be near 75th percentile of all data to match current surface values. Beyond the FPM, 75th percentile of tox results were greater than or equal to the 75th percentile of all results, with the criteria just based on (total) percentiles virtually the same.

10. Break

11. Discussion: Interlaboratory Comparison Studies for 2023

For this agenda item, Don reviewed a recently completed interlaboratory comparison study conducted by the RMP and sought advice for a potential PFAS interlaboratory comparison in 2023. There are \$60K in funds dedicated for intercomparison studies this calendar year.

Working with Brooks Applied Laboratory (BAL), the RMP compared BAL's legacy "reductive precipitation" method (1640m) with their new column chelation method (BA-5021). The legacy method precipitated solids to preconcentrate but required frequent re-runs. The column chelation method holds the advantage of being faster and automated but early years returned very high, biased results. In the first round of testing in 2017, the column chelation methods returned results around 50% higher than the reductive precipitation method. Differences in results have steadied at 15% in subsequent years of testing in 2019 and 2021 which is within the target range. These two years were conducted pro-bono. 2023 results also registered a difference of 15% between the two methods. Don asked the TRC if these results indicated that the intralab comparison and the legacy method could be retired. The TRC answered affirmatively, but would like Richard Looker to provide the final confirmation. Don provided some context into past studies SFEI has conducted for PFAS in different matrices, primarily working with SGS AXYS for Status & Trends as well as Eurofins for other studies. He introduced a preliminary study design that would compare a total of six paid samples by both SGS AXYS and Eurofins - two nearfield/Bay samples provided in duplicate, two effluent samples provided in duplicate, with the labs analyzing their own control samples in triplicate and cross-sending those LCS for duplicate analysis. Stormwater could be considered in place of effluent samples but the variable SSC may be troublesome. Becky voiced support for effluent testing.

Other analyte candidates include PBDEs in sediment (in the final year of their study, and thus low priority), bisphenols or OPEs (although methods may be immature and labs few), water metals (have conducted intercomparison in the past with CCSF), and cyanide (finicky method with many non-detects). Another possibility for interlab comparison would be to send three or four of the highest concentration sediment samples to a second lab for PFAS analysis, following results from AXYS. This would require archiving samples for all sites. In case this option is approved, Don advocated for storing sediment samples anyways.

The Committee tentatively approved of the initial PFAS in nearfield/Bay and effluent water.

Decisions:

• Move forward with PFAS intercomparison using near-field, Bay, and effluent samples (Don Yee, December 31, 2023)

Action Items:

- Check with Richard Looker on ending the intercomparison for the copper analysis (Don Yee, May 15, 2023)
- Reach out to CCSF to see if they could be the primary metals lab along with Brooks. If not, look into commercial labs such as CalTest (Don Yee, May 15, 2023)

12. Information: Progress on Workgroup Strategy Updates

Jay introduced this agenda item by informing the TRC that it would remain a standing item through the remainder of this year as the RMP workgroups update their respective strategy documents.

The Microplastics workgroup held a strategy meeting on March 14 and will hold a full WG meeting on Monday, April 10, 2023 where they will also update their management questions. Current projects overlapping with other workgroups include the Stormwater

monitoring (SPLWG, ECWG), Air monitoring (ECWG) and planned future projects with overlap include stormwater monitoring (SPLWG, ECWG) and air monitoring (ECWG). Additionally, a state plastics monitoring strategy and pilot have been planned so the RMP process can inform state activities.

The Emerging Contaminants team will hold a workgroup meeting on April 19-20, 2023 and expects to finalize their management questions (particularly question four) at these meetings. Current projects overlapping with other workgroups include the SPL monitoring/modeling, in-Bay model and planned future projects with overlap include SPL monitoring/modeling, in-Bay model, air monitoring. Science and Stakeholder (SST) meetings will help integrate EC and SPL strategy (includes selecting near-term MQs specific to this effort). Introductory strategy revision chapters were shared with the strategy subgroup in mid-March.

The Sources, Pathways, and Loadings (SPL) team will hold a strategy meeting on April 12 with a core group to update management questions with full workgroup meeting days meeting with ECWG on Apr 20, one day on May 23. Current projects overlapping with other workgroups include the CEC stormwater groundwork (ECWG), IWBMS (PCBWG, ECWG, SedWG, MPWG) and planned future projects with overlap include stormwater M&M, WDM application.

The RMP is developing a Stormwater CECs Approach as a cross-workgroup project between the ECWG and SPLWG to address ECWG management questions and support Status & Trends CECs work. This effort currently uses \$250K-\$300K per year of Special Study funds and is overseen by an external advisory group drawn from ECWG & SPLWG (a Stormwater CECs Stakeholder Science Advisor Team (SST)). Monitoring will be piloted in WY 2024 with near-term priority sub-management questions to guide the Approach being discussed at the ECWG/SPLWG joint meeting on Apr 20 with the goal to obtain feedback and finalize. A project update will also be provided at the joint meeting, with the next SST meeting in summer.

The Sediment Workgroup conducted strategy meetings on January 31, 2023 (Part 1. MQ3-5), February 8, 2023 (MQ 1-2), and March 23, 2023 (Part 2. MQ 3-5). A full workgroup meeting is scheduled for May 11, 2023 where management questions will be updated. Current projects overlapping with other workgroups include the In-Bay model (PCBWG), IWBMS (SPLWG) and planned future projects with overlap include the In-Bay model (PCBWG) and WDM applications (SPLWG). The workgroup is currently focused on developing a sediment monitoring & modeling workplan and updating MQs 3-5. Updating MQ 1-2 was put on hold after the strategy meeting with SC members. The

workgroup is still considering adding a 3rd advisor. A draft sediment conceptual model report was shared with the workgroup on March 16.

The PCBWG will meet in the beginning of June. Its management questions are currently updated. Current projects overlapping with other workgroups include the In-Bay model (ECWG, SedWG, Nutrients) and IWBMS (SPLWG). Jay noted most of the PCBWG multi-year plan funding is covered by the WQIF and a SEP.

13. Discussion: Communications Update

Jay opened discussion to brainstorm ideas for various RMP communication products. In preparation for the upcoming RMP Annual Meeting, Becky Sutton offered to provide some highlights from the CECs in stormwater screening study along with some big picture thoughts on future work. Phase 2 BACWA PFAS - Diana and Lorien could speak on phase two of the BACWA PFAS study. Additionally, the RMP could discuss the CEC Strategy Revision or share preliminary data on the Quaternary Ammonium Compounds effort as well as the floating percentile method and a wet season sampling report. As for this year's RMP Update, Jay proposed featuring the CECs in stormwater effort.

Jay concluded the item by reviewing the communications strategy developed by the Steering Committee in 2014. He noted that many communications elements have changed over the years, particularly noting how the Annual Meeting's new hybrid format has allowed for a wider audience. He shared the results of a SC and TRC wide poll that emphasized the high prioritization of the Annual Meeting, RMP Website, and shorter format summaries for interested parties. Luisa suggested that Warner could feature the RMP more prevalently in his email communications.

Action Item:

Jay talk to Warner about featuring RMP items in his emails (Jay Davis, May 15, 2023)

14. Information: Status of Deliverables and Action Items

Amy reviewed the deliverables and action items with the TRC members. The stoplight report for this meeting was recently updated with the 2022 and 2023 deliverables. Amy began by reporting the short-term RMP sample archive purging, Margins Draft Report, Floating Percentile Draft Report, Stormwater Conceptual Model Report - SFEI Contribution #1109 and study design for Special Study: PFAS in Archived Sport Fish had all been recently completed.

Following with overdue items, she expanded on the PCB In-Bay contaminant modeling report section, for which modeling work began earlier this year with a revised timeline to be developed at PCBWG meeting in June 2023. Sturgeon sampling is currently being conducted for sturgeon selenium monitoring data management

Overdue items scheduled for completion soon include the NB Selenium Clam and Water Data Report (4/30/23), 2020 QA Summary for S&T Activities (3/31/23), and 2021 QA Summary for S&T Activities currently waiting for bird egg data (5/31/23). The CECs stormwater monitoring strategy document has been delayed due to complications in the stormwater groundwork project (2/28/24) while the Sediment Flux Richmond Bridge Data Release will not be moving forward in 2023 as planned due to USGS staffing issues (12/31/24).

Projects due before the June TRC meeting include the Sunscreen in wastewater technical report, Sediment conceptual model report, S&T QA Reports, North Bay Selenium Report, Floating percentile sediment guidelines, and Integrated watershed modeling and monitoring strategy for which a draft is in review and expected to be completed by mid-May.

Bridgette applauded Amy's conciseness and suggested the abbreviated deliverables list be included in future agenda packages in addition to the more detailed stoplight reports.

15. Discussion: Plan Agenda Items for Future Meetings

The group was aware the June meeting would focus mostly on special study prioritization. The Annual Meeting and RMP Update will be discussed. An update on S&T implementation will be given as well as a discussion and decision on margins stations.

16. Discussion: Plus/Delta

Overall, the group was commended for their sustained effort and focus throughout the day. The TRC voiced their appreciation for the science updates from Don and expressed their desire to hold the June TRC in person.



DATE: April 14, 2023

TO: RMP Steering Committee

FROM: Jen Hunt, Amy Kleckner and Sarah Lowe

RE: RMP Financial Update – Period Ending 3/31/2023

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 information presented is for job to date labor and expense billing through March 31, 2023, hereafter referred to as the "current period."

RMP 2023 Budget

\$0 of the \$3,865,174 (0%) in 2023 invoiced fees have been collected. 2023 invoices have not been sent out yet. Notes:

- 1. The full 2023 revenue is \$4,584,374 which includes
 - a. \$400,00 which is a pass through from USACE to USGS
 - b. \$300,000 from set aside funds
 - c. \$19,200 from undesignated reserve
- 2. In RMP 2023, we are passing \$515,000 in revenue directly through to the NMS to support NMS projects;
- 3. The full 2023 planned expenses are \$4,617,135 (including the \$400k in item 1 above and \$515k in item 2 above);
- 4. RMP 2023 has an overall deficit of \$32,761
- 5. The total amount invoiced does not include the \$400,000 that will go from USACE to USGS directly;
- 6. Table 6 showing the outstanding Accounts Receivable for 2023.

The expected fees are the sum of core fees (\$3,435,574) and supplemental fees paid by wastewater agencies (\$329,600) under Water Board Order R2-2016-0018 and updated Order R2-2021-0028 (hereafter referred to as Alternative Monitoring and Reporting funds or AMR funds) and \$100,000 in stormwater fees per the Municipal Regional Permit.

As of March 31, 2023, we are 12% expended on the total budget.

RMP 2022 Budget

\$3,515,151 of the \$3,601,438 (98%) in 2022 invoiced fees have been collected. Notes:

- 1. The full 2022 revenue is \$4,038,513 and includes \$400,00 which is a pass through from USACE to USGS.
- 2. In RMP 2022, we are passing \$508,000 in revenue directly through to the NMS to support NMS projects;
- 3. The full 2022 planned expenses are \$3,688,513 (including the \$400k in item 1 above and \$508k in item 2 above);

1

- 4. The total amount invoiced does not include the \$400,000 that will go from USACE to USGS directly;
- 5. RMP 2022 has an overall surplus of \$30,248. Note that the previous surplus amount was \$137,713. At the November 2022 Steering Committee meeting, the SC authorized usage of \$108,000 of surplus funds to support multiple tasks: 1) \$35k for the Emerging Contaminants Workgroup Strategy update, 2) \$27k for the Microplastics Workgroup Strategy update, 3) \$10.5k for the Sources, Pathways, and Loading Workgroup Strategy update 3) \$35.5k for the Regional Watershed Dynamic Model. In addition, the Steering Committee also authorized up to \$72,000 for additional stormwater sampling during Water Year 2023. As of 3/31/2023, \$12,000 of the \$72,000 has been allocated for additional stormwater monitoring.
- 6. Table 6 showing the outstanding Accounts Receivable for 2022.

The expected fees are the sum of core fees (\$3,718,033) and supplemental fees paid by wastewater agencies (\$320,480) under Water Board Order R2-2016-0018 and updated Order R2-2021-0028 (hereafter referred to as Alternative Monitoring and Reporting funds or AMR funds).

As of March 31, 2023, we are 72% expended on the total budget.

RMP 2021 Budget

<u>Revenue</u>

\$3,669,205 of the \$3,675,093 (99%) in 2021 invoiced fees have been collected. Notes:

- The full 2021 revenue is \$4,091,093 and includes \$400,00 which is a pass through from USACE to USGS and \$16,000 from undesignated funds. \$50,000 of RMP 2021 revenue was transferred (deducted from the revenue) from RMP 2021 to Set-Aside Funds for S&T Monitoring and an additional \$74,516 was transferred (deducted from the revenue) to the undesignated reserve. Therefore operating revenue is \$3,966,577;
- 2. The full 2021 planned expenses are \$3,963,060;
- 3. During Q1 2022, the dredger invoice amount was determined. This amount was \$5,391 higher than planned. The full revenue amount has been updated in item 1 above.
- 4. The total amount invoiced does not include the \$400,000 that will go from USACE to USGS directly;
- 5. Due to the higher than planned dredger revenue, RMP 2021 has an overall net surplus of \$3,517 (was previously a deficit of \$1,800).
- 6. Table 6 shows the remaining outstanding Accounts Receivable for 2021.

The expected fees are the sum of core fees (\$3,795,792) and supplemental AMR funds paid by wastewater agencies (\$279,301).

As of March 31, 2023, we are 83% expended on the total budget.

RMP 2020 BUDGET

<u>Revenue</u>

\$3,873,720 of the \$3,873,721 (100%) in 2020 invoiced fees have been collected. Notes:

- The full 2020 revenue is \$3,991,846 which includes \$88,129 from set aside funds for RMP Program Review, \$30,000 from undesignated reserve, and deducts \$275,000 which was transferred to Set-Aside Funds for S&T Monitoring;
- 2. The total amount invoiced does include the \$400,000 that will go from USACE to USGS directly;

- 3. The total amount invoiced includes the \$93,196 for Caltrans;
- 4. The total RMP 2020 local dredger revenues have been calculated at \$82,814, which is lower than the original estimate of \$209,489; and
- 5. RMP 2020 budgets were adjusted to reflect the lower dredger revenue (reduced multiple budgets by a total of \$53,800) and there remains an overall revenue shortfall of \$18,168.

The expected fees are the sum of core fees (\$3,594,416) and supplemental AMR funds paid by wastewater agencies (\$279,301).

As of March 31, 2023, we are 93% expended on the total budget.

The RMP budget is now planned at \$3,735,014 which results in a deficit of \$18,168. We have closed all of tasks 1-5 and the balance remaining in these tasks is \$203k. After accounting for the \$18k deficit, there's a remaining balance of \$185k in tasks 1-5. We will hold these funds in the RMP 2020 account until we unencmuber the entire year.

RMP 2019 BUDGET

<u>Revenue</u>

\$3,459,851 of the \$3,460,087 (99%) in 2019 fees have been collected. SFEI has written off the expected revenue from Marina Dredge Neighbors in the amount of \$200. After accounting for this write off, all 2019 funds have been received. Notes:

- 1. The full 2019 revenue is \$3,819,850 which includes \$109,762 from undesignated reserve funds;
- 2. The total amount invoiced does not include the \$250,000 that went from the USACE to the USGS directly.

The expected fees are the sum of core fees (\$3,430,087) and supplemental AMR fees paid by wastewater agencies (\$279,301). There is reduced dredger revenue of \$262,334 (\$150,000 in reduced revenue from USACE and \$112,334 reduced revenue from local dredgers). Due to this lower than expected revenue, the planned 2019 RMP expenses exceeded revenue by \$36,108. At the August 2019 Steering Committee meeting, a decision was made to move \$16,762 from Undesignated Reserve Funds to RMP 2019 and to reduce the RMP 2019 unallocated budget from \$19,346 to \$0. These two changes balanced the RMP 2019 budget.

Expenses

Overall, 94% of the 2019 funds have been spent through September 30, 2022. To date, we are over budget on some tasks by about \$58.7k (\$39.7k on workgroup meetings, \$10k on the water cruise, and \$9k on the Selenium North Bay clam study (these overages were previously approved by the RMP SC)). Through 3/31/2022, we have a positive balance of about \$115.7k on tasks-1-5 (program management tasks). This \$115.7k balance will be needed to cover previous Steering Committee approved overages. We aim to complete remaining tasks on budget and will wait until we are near 100% complete on projects to unencumber funds.

Unencumbrances this Quarter

• There is no request to unencumber at this meeting.

RMP 2018 BUDGET

<u>Revenue</u>

3

\$3,596,060 of the \$3,596,060 (100%) in 2018 fees have been collected. The expected fees are the sum of core fees (\$3,326,493) and AMR fees paid by wastewater agencies (\$269,575).

Expenses

Overall, 98% of the 2018 funds have been spent. The remaining projects are mostly special studies. For the Status and Trends tasks, most of the remaining expenses are laboratory invoices and data management.

Unencumbrances this Quarter

• There is no request to unencumber at this meeting.

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. In the first quarter of 2022, \$350,000 was transferred to the S&T set aside funds from RMP 2022. The current balance of all set-aside funds is **\$1,077,975**. The current balance of each set-aside fund is shown in Table 2. At the start of CY2023, \$300,000 was withdrawn from this account and moved to RMP year 2023. The historical and projected balance of the S&T Set-Aside Fund is shown in Figure 3.

Dedicated Dredger Reserve Fund

The balance of the Dredger Reserve Fund was reset to zero on January 1, 2018, when new dredger fees took effect. In 2018, there was a \$62,665 credit to the Fund for dredger fees associated with the 6-month "stub year" that was created when the new fee schedule was developed^[1]. There was also a debit of \$109,060 because the local dredger fee payments were below their target for the year. In 2019, 2020 and 2021, there was a dredger revenue reduction due to dredged materials below targets of \$262,334, 209,498, and \$196,757, respectively. Therefore, the balance of the Dredger Reserve is currently -**<u>\$714,984.</u>** 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 \$400,000 (this was increased from \$200,000 at the October 2018 Steering Committee meeting) to allow for response to unanticipated funding needs or revenue shortfalls.

Going forward, all RMP earned interest will be deposited directly into Undesignated Funds and will be reported each quarter.

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 balance of Undesignated Funds through the current period is **\$1,055,823**. Table 4 shows the withdrawals and deposits in the Undesignated Funds during the last two budget years. Q4 2022 LAIF interest was \$24,209 (2.17% interest).

Supplemental Environmental Project (SEP) Funds

The total amount of RMP SEP funds received through the current period is \$3,504,520, which includes \$11,650 of additional funding for project oversight that supported previously completed and closed projects (no change since
last reporting period). There are \$80,289 of unallocated SEP (MMP) settlement funds that were previously received and are available.

As of the end of the current reporting period, \$2,464,976 was spent on current and previous SEP projects, which includes 30 projects to date. The current balance of SEP funds is **\$1,039,544** (includes the unallocated funds that have been received and not yet committed to a project). Table 5a summarizes the budget status for current, active SEP projects through this reporting period. Descriptions of the active and approved projects are listed in Table 5b.

FOR STEERING COMMITTEE APPROVAL

• No items for approval.



Figure 1 Bay RMP 2023 Budget. Budget and expenses through the current period by category.



Figure 2: Bay RMP Undesignated Funds Balance over the past three years. The height of the bar shows the total balance of the Undesignated Funds. The bar is color coded to indicate the RMP policy that \$400,000 of the Undesignated Funds should not be spent. Note that prior to December 2018, the RMP policy for restricted Undesignated Funds was \$200,000. The increase to \$400,000 was approved at the October 2018 Steering Committee meeting.



S&T Monitoring Dedicated Set-Aside Funds and S&T Budget

Figure 3. Contributions to and withdrawals from the S&T Set-Aside Fund from 2014 to 2022, anticipated contributions and withdrawals from 2023 to 2028, S&T actual budget for 2014 to 2021, and S&T projected budget for 2023 to 2028.

Table 1a: Bay RMP 2023 Budget: Budget and expenses for active tasks through the current period by line item.

Task	Sub task	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 001 Program Management	A	Budget and Workplan Development	\$46,000	\$5,698	12%
	В	Contract and Financial Management	\$70,000	\$8,735	12%

Task	Sub task	Subtask Name	Budget	Expenses JTD	% Complete
	с	Technical Oversight	\$71,100	\$22,990	32%
	D	Internal Coordination	\$115,000	\$32,952	29%
	E	External Coordination	\$41,500	\$6,976	17%
	F	Administration	\$7,500	\$0	0%
Task Number: 002 Governance	A	SC meetings	\$51,000	\$13,255	26%
	В	TRC meetings	\$51,000	\$13,308	26%
	с	General WG meetings (MF, E	\$63,800	\$13,281	21%
	D	External Science Advisors	\$60,000	\$500	1%
	E	Emerging Contaminants WG	\$52,000	\$19,073	37%
	F	Microplastic WG	\$13,000	\$7,500	58%
	G	SPLWG	\$44,000	\$1,431	3%
	Н	Sediment WG	\$40,000	\$7,289	18%
	I	PCB WG	\$22,000	\$0	0%

Task	Sub task	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 003 QA and Data Services	А	Quality Assurance System	\$38,200	\$193	1%
	В	Online Data Access: CD3	\$73,200	\$8,408	11%
	с	Database Maintenance	\$62,000	\$11,512	19%
	D	Updates to SOPs and Templates	\$43,800	\$6,990	16%
	E	DMMO Database Support	\$52,800	\$2,001	4%
Task Number: 004 Annual Reporting	A	Pulse Report	\$80,000	\$0	0%
	В	Annual Meeting	\$85,000	\$2,238	3%
Task Number: 005 Communications	А	Communications Plan Implementation	\$51,200	\$2,662	5%
	В	Stakeholder Engagement	\$28,000	\$1,775	6%
	с	Responses to Information Requests	\$22,500	\$662	3%
	D	Outreach Products	\$17,000	\$0	0%

Task	Sub task	Subtask Name	Budget	Expenses JTD	% Complete
	E	Presentations at Conferences and Meeting	\$65,000	\$0	0%
	G	RMP Website Maintenance	\$18,800	\$3,262	17%
Task Number: 006 S&T Monitoring	A	USGS Sacramento Support	\$0	\$0	
	В	USGS Menlo Park Support	\$0	\$0	
	С	Dry season Bay water cruise	\$217,000	\$5,620	3%
	D	Dry season Bay water cruise data mgmt	\$40,000	\$1,687	4%
	E	Wet season water sampling	\$57,535	\$2,555	4%
	F	Wet season water data mgmt	\$15,000	\$1,529	10%
	G	Nearfield and margins sediment & prey fi	\$275,000	\$1,785	1%
	Н	Nearfield and margins sed & prey fish da	\$50,000	\$0	0%

Task	Sub task	Subtask Name	Budget	Expenses JTD	% Complete
	I	S&T Laboratory Intercomparison Studies	\$60,000	\$0	0%
	J	Sample archive	\$80,000	\$34,244	43%
	к	S&T Field Sampling Report & Support	\$20,000	\$0	0%
	L	Ambient Bay sediment	\$170,000	\$855	1%
	м	Ambient Bay sediment data mgmt	\$30,000	\$0	0%
Task Number: 021 Special Study: PCBs in sediment and fish		Special Study: PCBs in sediment and fish	\$75,000	\$4,952	7%
Task Number: 022 Special Study: Nutrients Moored sensor h		Special Study: Nutrients Moored sensor h	\$0	\$0	#DIV/0!
Task Number: 023 Special Study: Microplastic Strategy		Special Study: Microplastic Strategy	\$13,000	\$973	7%
Task Number: 027 Special Study: STLS Strat. Supp. & Coord		Special Study: STLS Strat. Supp. & Coord	\$35,000	\$7,523	21%

Task	Sub task	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 029 Special Study: STLS Regional Model Devel		Special Study: STLS Regional Model Devel	\$130,000	\$15,365	12%
Task Number: 030 Small Tributaries Pollutants of Concern	В	Labs and Subs	\$10,000	\$1,246	12%
Task Number: 031 Special Study: SPL Tidal Area Remote Sam	A	Site planning	\$21,156	\$17,518	83%
	В	Field work	\$31,556	\$7,936	25%
	с	Reporting	\$7,000	\$0	0%
	E	Project management	\$7,000	\$0	0%
Task Number: 032 Special Study: SPLWG Strategy		Special Study: SPLWG Strategy	\$30,000	\$1,151	3.8%
Task Number: 033 Special Study: EC Strategy Support		Special Study: EC Strategy Support	\$60,000	\$6,382	11%
Task Number: 034 Non Targeted data mining	В	Analysis	\$30,000	\$0	0%
Task Number: 035 CEC: Tires Strategy		CEC: Tires Strategy	\$10,000	\$1,114	11%
Task Number: 036 CEC: Groundwork for CEC stormwater	A	Stakeholder Meetings & Project Mgmt	\$40,000	\$22,935	57%

Task	Sub task	Subtask Name	Budget	Expenses JTD	% Complete
	В	Remote Sampler Pilot	\$75,000	\$40,461	54%
	С	Location Database	\$32,000	\$11,806	37%
	D	Data Analysis of SW Pilot Project	\$53,000	\$20,519	39%
	E	Model Development	\$50,000	\$0	0%
Task Number: 037 Special Study: Tire-related Contaminants	A	Study Des & Smple Collection	\$30,000	\$0	
	В	Data Mgmt	\$5,000	\$0	
	с	Data Analysis & Report	\$5,000	\$0	0%
Task Number: 038 Spec Stud: EC Ethoxyl Surfact in Water	A	Project Management	\$30,000	\$0	0%
	В	Data Services	\$0	\$31	
	С	Analysis and Reporting	\$0	\$0	
Task Number: 039 Spec Stud: SPL SW CECs Strategy Year 2	A	Draft Approach	\$24,000	\$0	0%
	В	Report	\$31,000	\$0	

Task	Sub task	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 040 Special Study: PFAS and NTA in marine ma	A	Study design and Collection	\$19,500	\$6 <i>,</i> 650	34%
	В	Data Management	\$4,000	\$0	0%
	С	Analysis and Reporting	\$103,928	\$240	0%
Task Number: 042 Special Study: Suspended Sediment in LSB		Special Study: Suspended Sediment in LSB	\$52,000	\$0	0%
Task Number: 043 Sediment WG Workplan		Sediment WG Workplan	\$18,200	\$6,690	37%
Task Number: 044 Special Study: Sediment Flux Richmond Br		Special Study: Sediment Flux Richmond Br	\$70,000	\$0	0%
Task Number: 045 Special Study: Sediment Delivery to Mars		Special Study: Sediment Delivery to Mars	\$135,000	\$0	0%
Task Number: 046 PFAS in fish	A	Analysis and Reporting	\$32,500	\$8,166	25%
Task Number: 047 Sediment Modeling (\$11k to for 3300/21E)		Sediment Modeling (\$11k to for 3300/21E)	\$11,000	\$2,777	25%
Task Number: 031 Special Study: SPL Tidal Area Remote Sam	D	Sampler Development	\$18,288	\$9,722	53%

Task	Sub task	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 034 Nontargeted data mining	A	Study Design	\$7,000	\$0	0%
	С	Reporting	\$8,000	\$0	0%
Task Number: 070 Unallocated		Unallocated	\$0	\$0	

Table 1b: Bay RMP 2022 Budget: Budget and expenses for active tasks through the current period by line item.

Task	Subtask	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 001 Program Management	A	Budget and Workplan Development	\$44,300	\$42,009	95%
	В	Contract and Financial Management	\$105,200	\$77,795	74%
	D	Internal Coordination	\$98,200	\$98,221	100%
	E	External Coordination	\$42,800	\$38,715	90%
	F	Administration	\$7,000	\$1,628	23%
Task Number: 002 Governance	A	SC meetings	\$54,500	\$50,866	93%
	В	TRC meetings	\$55,700	\$42,973	77%
	D	External Science Advisors	\$60,000	\$22,244	37%
Task Number: 004 Annual Reporting	A	Pulse Report	\$129,000	\$78,062	61%
Task Number: 005 Communications	A	Communications Plan Implementation	\$47,100	\$29,370	62%
	В	Stakeholder Engagement	\$27,000	\$25,901	96%

Task	Subtask	Subtask Name	Budget	Expenses JTD	% Complete
	С	Responses to Information Requests	\$20,700	\$18,553	90%
Task Number: 006 S&T Monitoring	В	USGS Menlo Park Support	\$0	\$0	
	С	Winter StormWater	\$94,465	\$52,943	56%
	D	Winter StormWater Data Mgmt	\$20,000	\$14,962	75%
	E	S&T Bivalves	\$20,000	\$775	4%
	F	N Bay Se Mon DataMgt	\$30,000	\$4,446	15%
	G	North Bay Selenium Monitoring	\$97,000	\$50,506	52%
	Η	Dry season Bay water cruises	\$25,000	\$3,311	13%
	l	S&T Laboratory Intercomparison Studies	\$22,000	\$3,904	18%
	J	Sample archive	\$43,000	\$40,486	94%
	К	S&T Field Sampling Report & Support	\$10,000	\$1,585	16%
Task Number: 020 Special Study: PCB In-Bay contaminant mo		Special Study: PCB In- Bay contaminant mo	\$56,000	\$45,907	82%

Task	Subtask	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 023 Special Study: Microplastic Strategy		Special Study: Microplastic Strategy	\$37,000	\$12,637	34%
Task Number: 027 Special Study: STLS Strat. Supp. & Coord		Special Study: STLS Strat. Supp. & Coord	\$45,500	\$36,690	81%
Task Number: 029 Special Study: STLS Reg. Model Devpmt.		Special Study: STLS Reg. Model Devpmt.	\$125,500	\$104,636	83%
Task Number: 030 Small Tributaries Pollutants of Concern	В	Field Work	\$2,807	\$0	0%
	E	Labs and Subs	\$52,193	\$18,864	36%
Task Number: 031 PCB monitoring at GE property		PCB monitoring at GE property	\$21,200	\$1,276	6%
Task Number: 032 AQUA- GAPS passive sampler		AQUA-GAPS passive sampler	\$10,000	\$0	0%
Task Number: 033 Special Study: EC Strategy Support		Special Study: EC Strategy Support	\$125,000	\$104,967	84%
Task Number: 034 Special Study: EC in Urban Stormwater	A	Stormwater Sampling	\$33,000	\$4,909	15%
	В	Data Management	\$5,000	\$4,992	100%
	С	Analysis and Reporting	\$62,000	\$7,571	12%
Task Number: 035 CEC modeling exploration		CEC modeling exploration	\$25,000	\$15,513	62%

Task	Subtask	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 036 Spec Stud: MPWG RMP Tire Strategy		Spec Stud: MPWG RMP Tire Strategy	\$25,500	\$25,443	100%
Task Number: 037 Spec Stud: EC Tire-related contam in Bay	A	Study Des & Smple Collection	\$27,993	\$18,332	65%
	В	Data Mgmt	\$12,007	\$12,007	100%
	С	Data Analysis & Report	\$10,000	\$0	0%
Task Number: 038 Spec Stud: EC Ethoxyl Surfact in Water	А	Project Management	\$2,509	\$0	0%
	В	Data Services	\$3,500	\$0	0%
	С	Analysis and Reporting	\$12,100	\$0	0%
	D	Laboratory analysis	\$11,891	\$9,337	79%
Task Number: 039 Spec Stud: SPL SW monitor strat for CECs		Spec Stud: SPL SW monitor strat for CECs	\$50,000	\$17,166	34%
Task Number: 043 Sediment WG Workplan		Sediment WG Workplan	\$10,000	\$14,737	147%
Task Number: 044 Special Study: Upload Data to DMMO		Special Study: Upload Data to DMMO	\$20,000	\$183	1%
Task Number: 045 Special Study: Sedimiment Temp variabili		Special Study: Sediment Temp variabili	\$155,000	\$87,830	57%

Task	Subtask	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 046 PFAS in fish	A	PFAS in fish	\$11,500	\$4,281	37%
	В	Data Management	\$10,500	\$7,607	72%

Table 1c: Bay RMP 2021 Budget: Budget and expenses for active tasks through the current period by line item.

Task	Subtask	Subtask Name Budget		Expenses JTD	% Complete
Task Number: 004 Annual Reporting	A	Pulse Report	\$95,000	\$92,072	97%
Task Number: 006 S&T Monitoring	D	2021 Water Cruise Data Mgmt	\$35,000	\$27,703	79%
	E	Bird Egg Sampling	\$226,000	\$64,501	29%
	F	2021 Bird Egg Data Mgmt	\$30,000	\$1,490	5%
	G	North Bay Selenium Monitoring	\$73,316	\$74,190	101%
	1	S&T Laboratory Intercomparison Studies	\$28,000	\$13,229	47%
	J	Sample Archive	\$84,000	\$74,542	89%
	К	S&T Field Sampling Report & Support	\$12,000	\$5,021	42%
Task Number: 021 Special Study: PCB Remediation Monitorin	C	Labs	\$39,034	\$16,612	43%
	D	Reporting	\$12,830	\$5,684	44%

Task	Subtask	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 024 Special Study: MicroP Conceptual Model		Special Study: MicroP Conceptual Model	\$40,000	\$39,900	100%
Task Number: 026 Special Study: STLS Integrated Conceptua		Special Study: STLS Integrated Conceptua	\$49,640	\$44,305	89%
Task Number: 030 Special Study: STLS WY20 POC Recon Monit	В	Field Work	\$14,259	\$4,631	32%
	С	Data Management	\$47,782	\$39,083	82%
Task Number: 034 Special Study: EC in Urban Stormwater	В	Data Management	\$40,000	\$39,568	99%
	С	Analysis and Reporting	\$41,446	\$31,783	77%
Task Number: 035 Special Study: Toxicology Strategy		Special Study: Toxicology Strategy	\$60,000	\$55,503	93%
Task Number: 046 Special Study: DMMO Database Enhancement		Special Study: DMMO Database Enhancement	\$40,000	\$4,641	12%
Task Number: 048 S&T RMP Prog Rev		S&T RMP Prog Rev	\$220,000	\$126,336	57%
Task Number: 049 Special Study: Microplastics Sed Core		Special Study: Microplastics Sed Core	\$3,500	\$0	0%

Table 1d: Bay RMP 2020 Budget: Budget and expenses for active tasks through the current period by line item.

Task	Subtask	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 006 S&T Monitoring	E	2020 N Bay Margins Sediment Mon FieldWk	\$220,600	\$215,656	98%
	I	S&T Laboratory Intercomparison Studies	\$37,000	\$27,363	74%
	К	S&T Field Sampling Report & Support	\$23,000	\$3,122	14%
Task Number: 021 PCB PMU Monitoring with Passive Samplers	A	Sampling	\$35,000	\$33,550	96%
Task Number: 041 Special Study: Selenium N.Bay Clam&Water	A	Planning & field work	\$77,050	\$73,617	96%

Table 1e: Bay RMP 2019 Budget: Budget and expenses for active tasks through the current period by line item.

Task	Subtask	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 006 S&T Monitoring	К	S&T Field Sampling Report & Support	\$22,000	\$12,255	56%
Task Number: 035 Special Study: EC Ethoxylated Surf. Stud	A	Sample Collection and Reporting	\$98,300	\$67,012	68%
	В	Data Management	\$24,700	\$6,147	25%

Task	Subtask	Subtask Name	Budget	Expenses JTD	% Complete
Task Number: 042 Special Study: Selen'm Sturg Muscle Plug		Special Study: Selen'm Sturg Muscle Plug	\$22,000	\$8,277	38%
Task Number: 070 Unallocated		Unallocated	\$0	\$0	

Table 1e: Bay RMP 2018 Budget: Budget and expenses for active tasks through the current period by line item.

Task	Subtask	Subtask Name			% Complete
Task Number: 036 EC Non- Targeted Analysis of Sed & Water		EC Non-Targeted Analysis of Sed & Water	\$101,000	\$78,811	78%

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

Reserve Type	Purpose	Balance
Dedicated Set-Aside Fund	Monitoring Contingency	\$50,000
Dedicated Set-Aside Fund	S&T Monitoring	\$1,027,975
	TOTAL	\$1,077,975

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"		\$62,665 (received) \$62,665 (total)
2018	-\$109,060	-\$46,395
2019	-\$262,334	-\$308,729
2020	-\$209,498	-\$518,227
2021	-\$196,757	-\$714,984

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

Budge t Year	Deposit or Withdrawal	Authorizat ion	Date of Authorizat ion	Amount	Comment
2021	Withdrawal	Steering Committee	1/21/2021	-\$16,000	Withdraw \$16k from UR to RMP 2021 for \$6k for MPWG and \$10k for tire contaminant conceptual model
2017	Deposit	Steering Committee	4/27/2021	\$25,000	unecumbered \$25,000 from RMP 2017 to reserve
2021	Deposit	Program Manager	3/31/2021	\$5,083	Q1 2021 LAIF interest
2021	Deposit	Program Manager	6/30/2021	\$3,697	Q2 2021 LAIF interest
2021	Deposit	Program Manager	9/30/2021	\$2,884	Q3 2021 LAIF interest
2021	Deposit	Program Manager	12/31/2021	\$2,640	Q4 2021 LAIF interest
2021	Deposit	Program Manager	3/31/2022	\$3481	Q1 2022 LAIF interest
2022	Deposit	Steering Committee	4/27/2022	\$74,516	new fees from schnitzer steel - from rmp 2021 to undesignated reserve
2022	Deposit	Program Manager	6/30/2022	\$6,015	Q2 2022 LAIF interest

2022	Deposit	Program Manager	9/30/2022	\$14,744	Q3 2022 LAIF interest
2023		Steering Committee	2/23/2023	-\$8,200	\$8,200 withdrawal from undesignated funds approved by SC on 2/23/23 allocated for 3023-43
2023	Withdrawal	Steering Committee	2/23/2023	-\$11,000	\$11,000 withdrawal from undesignated funds approved by Tom/SC on 3/21/23 to be allocated to RMP project task XXXX to support the completion of the SEP project 3300- 21E
2022	Deposit	Program Manager	12/31/2022	\$24,209	Q4 2022 LAIF interest

Table 5a: Bay RMP Supplemental Environmental Project (SEP) Settlement Funds budget status for open, current projects or projects that ended within the last quarter. Listed are the amount of funds received and allocated to specific projects, the amount spent through the end of this reporting period, and the amount of unallocated funds available for this reporting period. The RMP maintains records of each settlement payment in their accounting system.

Active RMP SEP Projects	Amount Funded	Amount Spent	SEP Project Balance
Task 012: PCB Shiner Surfperch PMU Survey	\$59,752	\$59,712	\$40
Task 013: Lower South Bay Sediment Transport Monitoring Study (closed this period)	\$158,000	\$158,000	\$0
Task 014: Quantifying Stormwater Flow and Sediment Flux to the Bay	\$385,000	\$316,902	\$68,098
Task 015: North Bay Selenium Clam and Water Data Management and Reporting	\$40,000	\$35,519	\$4,481
Task 016: Sunscreen in Wastewater	\$36,500	\$35,794	\$706
Task 017: Characterizing the settling velocity of suspended sediment across channel and shoals in South San Francisco Estuary (closed this period)	\$227,700	\$227,700	\$0
Task 019: ECWG Special Study 2020 Q_Ammonium Compounds Survey	\$58,200	\$29,907	\$28,293
Task 020: SPLWG 2020 MTC Bay Area Land Use Update Support (closed this period)	\$50,000	\$50,000	\$0
Task 021: Sediment Dynamics Assessment and Uncertainty Analysis for San Francisco Bay (closed this period)	\$142,500	\$142,500	\$0
Task 023: Integrated Watershed-Bay Modeling Strategy and Pilot Implementation	\$200,000	\$50,227	\$149,773
Task 024: Regional Watershed Spreadsheet Model Update	\$23,300	\$569	\$22,731
Task 025: Temporal Variability in Sediment Delivery to a San Francisco Bay Salt Marsh - USGS (Closed this period)	\$59,511	\$59,511	\$0
Task 026: Characterizing Per- and Polyfluoroalkyl Substances (PFAS) and Chlorinated Paraffins in San Francisco Bay Sediment	\$106,150	\$4,914	\$101,236
Task 027: High speed mapping of water quality parameters on the eastern shoal of South San Francisco Bay	\$184,470	\$71,474	\$112,996
Task 028: San Francisco Bay Sediment Transport and Fate Modeling	\$408,000	\$0	\$408,000
Task 029: PFAS in Archived Sport Fish Manuscript (new)	\$25,500	\$199	\$25,301
Task 030: Non-targeted Analysis (NTA) Sediment Data Manuscript (new)	\$37,600	\$0	\$37,600
Unallocated	\$80,289	\$0	\$80,289
Total for above active projects and unallocated funds	\$2.282.472	\$1.242.928	\$1.039.544
Total for all SEP Projects	\$3,504,520	\$2,464,976	\$1,039,544

Table 5b: Active Bay RM	Supplemental Environmenta	al Project Descriptions
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Study Name	Budget	Description	Status
Task 012 PCB Priority Margin Unit (PMU) Surfperch Survey	\$59,752	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.	Approved
Task 013 Lower South Bay Sediment Transport Monitoring Study (LSB Sediment Flux Study Year 2)	\$158,000	For January through September 2019, the San Francisco Bay Regional Monitoring Program (RMP) will continue the observations of suspended-sediment flux obtained in 2018 and will study the effects of flocculation on suspended-sediment flux measurements at the Dumbarton Bridge. The study will provide a monitoring dataset to understand the amount of sediment that is transported into and out of Lower South Bay (the "sediment flux"). An interpretive technical report for RMP's 2018 – 2019 results will be submitted. This data is critically important for restoring marshes for the South Bay Salt Ponds Restoration Project and for understanding transport of sediment-associated contaminants. At two locations in the water column at Dumbarton Bridge, continuous, 15-minute observations of turbidity, water velocity, and depth will be collected. These datasets will be related to suspended-sediment concentration and channel discharge using periodic boat-based measurements; the product of these two quantities is suspended-sediment flux. This sediment flux monitoring will follow previously established United States Geological Survey (USGS) methods (Shellenbarger et al., 2013). To quantify the effect of flocculation on these sediment flux computations, additional field campaigns will be conducted to observe in situ floc size and particle size distributions through an entire tidal cycle during spring and neap tides of the dry (July – Sept) and wet (Oct – June) seasons.	Approved (closed this period)

Study Name	Budget	Description	Status
Task 014 Quantifying stormwater flow and sediment	\$385,000	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 non-urban watersheds. This project aims to fill these data gaps.	Approved
Task 015 North Bay Selenium Clam and Water Data Management and Reporting	\$40,000	The goal of the study is to provide data quality assurance, data management, and preparation of a data report for clam and water selenium monitoring conducted by the Regional Monitoring Program for Water Quality in San Francisco Bay (RMP) in North San Francisco Bay. This monitoring is being conducted by the RMP in support of the North Bay Selenium TMDL. This study will cover clam and water selenium data generated by RMP monitoring in 2019 and 2020.	Approved
Task 016 Sunscreens in Wastewater	\$36,500	Recent qualitative work has indicated the presence of one sunscreen active ingredient, oxybenzone, in Bay water and wastewater effluent. Oxybenzone and other sunscreen active ingredients have been shown to cause adverse effects, such as endocrine disruption in fish and bleaching on coral reefs. The City of San Francisco is considering a resolution to examine the occurrence and potential impacts of some of these compounds. This sunscreen screening study will help assess whether they may be a potential concern for the Bay.	Approved
Task 017 USGS Characterizing the settling velocity of suspended sediment across channel and shoals in South San Francisco Estuary	\$227,700	The goal of this work is to collect needed data on flocculation and variation in settling velocity of suspended sediment particles simultaneously in the channel and shoals of South San Francisco Estuary. These data will improve our understanding of the processes controlling sediment flocculation and ground-truth parameterizations of settling velocity that can be used to improve models of sediment transport for the San Francisco Estuary. Results will inform management questions regarding the beneficial reuse of dredged sediment, the sediment accretion in tidal marshes, and sources and trajectories of sediment-bound contaminants from watersheds and Bay margins into the Estuary. Informing these management questions is a priority of the San Francisco Bay Regional Monitoring Program for Water Quality.	Approved Started 7/2020

Study Name	Budget	Description	Status
Task 019 ECWG Special Study 2020 Quaternary Ammonium Compounds Survey	\$58,200	Quaternary ammonium compounds (QACs) are surfactants widely used in a variety of consumer products, particularly as antimicrobials. The current COVID-19 pandemic is thought to have increased use of products containing QACs, which is expected to continue into the near future. QACs have been detected in San Francisco Bay sediment, and are considered Possible Concern within the RMP tiered risk-based framework for emerging contaminants in the Bay. This ECWG special study will determine the concentrations of at least 22 QACs in Bay Area wastewater influent and effluent and basis to access the tamparel transfer to COV/ID 10	Approved Started 7/2020
Task 020 SPLWG 2020 MTC Bay Area Land Use Update Support	\$50,000	Geographic information on land use forms the basis of data and information generated to inform many key planning, management, and policy decisions. The first comprehensive information on Bay Area land use was released by the Association of Bay Area Governments (ABAG) in 1995, updated in 2000, and again in 2005 to reflect the (then) latest information about land use on a parcel basis. The goal of this project is to support the Metropolitan Transport Commission (MTC) in generating a one-time regional update of the basic land-use information for the Bay Area to support timely planning and assessment needs within the RMP community. Working with RMP staff, the MTC plans to develop the digital geospatial product in a way that can then be updated regularly on 2-5 year intervals.	Approved Started 7/2020 (closed this period)
Task 021 Sediment Dynamics Assessment and Uncertainty Analysis for San Francisco Bay	\$142,500	The goal of this project is to produce a detailed conceptual model of sediment dynamics for San Francisco Bay. The model will be linked to key management questions and developed at appropriate spatial and temporal scales, which can be used to inform policy decisions and build frameworks for management, monitoring, and modeling decisions. When coupled with an analysis of the uncertainties for major variables relative to their magnitude within the system, this conceptual model will also be used to prioritize monitoring and modeling studies.	Approved Started 9/2020 (closed this period)
Task 023: Integrated Watershed-Bay Modeling Strategy and Pilot Implementation	\$200,000	This project will produce and implement a strategy that integrates, links, and advances modeling tools to evaluate transport and loading of pollutants and sediment to San Francisco Bay from its tributary watersheds and other sources and pathways, and to evaluate the fate and transport of the resulting exposure of the pollutants in the Bay. Currently available models include watershed and Bay dynamic simulation models, watershed spreadsheet models, food web models, and mass balance conceptual box models of the Bay and Bay margins. Integrated use of these modeling tools and monitoring data will provide improved understanding of the linkages between ecosystem components and will better answer management questions to inform preventive and corrective actions for pollutants of concern, including contaminants of emerging concern, and management of sediment sources and supply needed for sea level rise resilience	Approved

Study Name	Budget	Description	Status
		and adaptation, and habitat protection and restoration.	
Task 024: Regional Watershed Spreadsheet Model Update	\$23,300	The Regional Watershed Spreadsheet Model (RWSM) was developed to estimate average annual regional and sub-regional scale pollutant loads to San Francisco Bay from stormwater runoff. It is part of a class of deterministic empirical models based on the volume-concentration method. In the Bay Area, it has so far been used for providing first approximations of regional (Baywide) and sub-regional (e.g., individual county, Bay segment, or priority margin unit) estimates of PCBs, mercury, copper, nutrients, and microplastics. The model will be recalibrated for flow using a new calibration period (1991-2020) and updated land use data to be published by the Metropolitan Transportation Commission in March 2021. The recalibrated flow model will be used to improve the model calibration and load estimates for mercury and one or more other pollutants.	Approved
Task 025: Additional MMP Funding for Task 022 - Temporal Variability in Sediment Delivery to a San Francisco Bay Salt Marsh	\$59,511	The goal of this work is to investigate the influence of tides, waves, and water levels on sediment delivery and deposition on a tidal marsh surface in south San Francisco Bay. The project will include measurements of suspended sediment concentration (SSC) and suspended sediment flux (SSF) in the shallows adjacent to a marsh, SSF into the marsh through a tidal creek, deposition and accretion on the marsh, and the variation in deposition with elevation and vegetation density and type. Data will be collected in summer 2021 and data analyzed and reported by summer 2023. USGS subcontract 1515 - These SEP funds partially fund RMP 2021 Task 047.	Approved (closed this period)
Task 026: Characterizing Per- and Polyfluoroalkyl Substances (PFAS) and Chlorinated Paraffins in San Francisco Bay Sediment	\$106,150	This study will assess PFAS concentrations in San Francisco Bay sediment samples to improve our understanding of the occurrence and risks associated with PFAS in the Bay. Sediment samples collected throughout the Bay in 2018 and archived for the Status and Trends (S&T) Program will be analyzed, as well as a subset of samples expected to be collected in 2023 to provide information on current status. PFAS will be analyzed via targeted methods using tandem liquid chromatography/mass spectrometry (LC-MS/MS), and may also include analysis via the total oxidizable precursors (TOP) assay, which allows characterization of the overall presence of precursors rather than individual PFAS.	Approved

Study Name	Budget	Description	Status
Task 027: High speed mapping of water quality parameters on the eastern shoal of South San Francisco Bay	\$184,470	This study will conduct high speed mapping of water quality parameters covering the eastern shoals of South San Francisco Bay (monthly) over 4 months. The mapping surveys will include information about water quality, nutrients, phytoplankton, and near- field remote sensing of high spatial resolution on the shoals and into the channels. The results will provide a quantitative understanding of phytoplankton and nutrient dynamics on the shoals and how they link to nutrient cycling processes in the channels of San Francisco Bay.	Approved
Task 28: San Francisco Bay Sediment Transport and Fate Modeling	\$408,000	 This project will produce a foundational quantitative model of sediment transport and fate in San Francisco Bay that can be used to address management questions for polychlorinated biphenyls (PCBs), nutrients, and sediment. The study will have four major elements: Compilation of existing information on (a) sediment loadings and boundary conditions and (b) sediment properties and parameters in San Francisco Bay; Diagnostic analysis of sediment transport and fate model development; Application of the model to answer management questions for PCBs, nutrients, and sediment supply; and Coordination among the scientists working on the multiple facets of this effort and the stakeholders (including Regional Water Board staff) providing guidance via San Francisco Bay Regional Monitoring Program and Nutrient Management Strategy workeroups 	Approved
Task 029: PFAS in Archived Sport Fish Manuscript	\$25,500	This funding request would support SFEI staff to prepare a draft manuscript from a 2022 RMP study to examine archived samples of four fish species from previous RMP sport fish sampling events in 2009, 2014, and 2019 across subembayments. Publishing this work in a peer-reviewed journal is important to add to the growing body of literature regarding PFAS in fish and widely increase the reach of the important studies done by the RMP. In coordination with this manuscript, an additional communication supplement is recommended to highlight this work at the SETAC Conference in Europe in May. This would include costs for attendance as well as creation of a poster synthesizing the findings of the report/manuscript, modeled after previous RMP conference posters. This effort further aids in improving the audience informed of our work while building on peer networking and partnership opportunities globally.	Approved (New)

Study Name	Budget	Description	Status
Task 030: Non- targeted Analysis (NTA) Sediment Data Manuscript	\$37,600	This SEP funding supports the development of a manuscript that would report on non-targeted techniques to examine both nonpolar and polar contaminants in Bay sediment using data reported from a 2018 RMP study lead by Lee Ferguson at Duke and Eunha Hoh at San Diego State University. SFEI staff will use the data provided by the 2018 study to further assess the distribution patterns, pathway influences, potential compound sources, and available toxicity information to inform prioritization. In addition SFEI will develop a 2-page fact sheet to describe the results and their implications modeled after past RMP fact sheets for non-targeted analysis.	Approved (New)

Table 6	: Steering Committe	e RMP B	udget Sui	mmary				
as of 3/3	31/2023							
Budget and	I Current Expenses							
Year		Budget	Expended	Balance	Previously Unencumber ed	Unencumber ed this Period	Balance minus Unencum bered (Remaind er)	% Remainin g
		\$	\$	\$	\$	\$		
SEP		3,504,520	2,464,976	1,039,544	0	0	1,039,544	30%
2023		3,714,063	435,123	3,278,940				
2022		2,750,265	1,983,436	766,829			766,829	28%
2021		3,564,216	2,967,795	596,421	0	0	596,421	17%
2020		3,735,174	3,489,980	245,194			245,194	7%
2019		3,819,850	3,591,866	227,984	0	0	227,984	6%
2018		3,818,427	3,736,916	81,511	0	0	81,511	2%
	Grand Total	24,906,515	18,670,092	6,236,423	0	0	2,957,483	12%
Cash, Set-A	Asides, and Undesignated Fu	nds as of repo	rting date					
	Item	\$	Notes					
	Cash on Hand	4,898,212						
	< 2018 A/R & Remaining	0						
	Total Assets	4,898,212						
	Total Current Liabilities	-2,957,483						
Set Asides	Monitoring Contingency							
	Program Review							
	S&T Monitoring	-1,027,975						
	Total Liabilities	-3,985,458						
	Undesignated Funds	912,754	RMP SC has Undesignated	set a policy to d Funds (chan	o maintain a m ged from \$200	inimum baland 0k to \$400k in	ce of \$400K of Oct 2018).	
Year	Accounts Receivables & Remaining Interest:	Amount	Anticipate d	Notes				
			Collection s by					
2022	3022.17 Pinole/Hercules -	21,255						
	3022.36 C&H Sugar	18,672						
	3022.61 Port of Oakland -	11,061						
	Dredger 3022.64 City of Benicia	4,320						
	Marina - Dredger 3022.71 Loch Lomond	15,447						
	Marina - Dredger	14 000						
	Yacht Harbor - Dredger	14,000						

	3022.78 Kinder Morgan Richmond Term Dredger	1,522				
	3022.85 SF Marina Yacht Harbor (WB) - Dredger	4,862				
2021	3021.65 Marina Dredge Neighbors - Dredger	200	core fees			
	3021.74 San Francisco Marina - Dredger	5,504	core fees			
	3021.80 Marin Co Paradise Cove(SD#5) - AMR	184				

^[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. Specifically, for the last cycle of the old Fee Schedule, the fees were assessed for the period 7/1/15-6/30/16. For the first cycle of the new Fee Schedule, the fees will be assessed using the period 1/1/17-12/31/17. This left a 6-month gap of 7/1/16 to 12/31/16 (the "stub year"). Dredgers with in-Bay dredge disposal in this stub year were charged a fee for this disposal using the old Fee Schedule.



MEMORANDUM

Date:	February 23, 2023
To:	RMP Steering Committee
From:	Jay Davis and Amy Kleckner
Subject:	Documentation of Funding Requests from the Sediment Workgroup Approved via
	Email

This memo documents a decision made by the Steering Committee via email in February. Scott Dusterhoff, the lead of the Sediment Workgroup made a time-sensitive request for funding for two projects.

Request #1

Scott requested additional funds (\$11K) to complete the sediment conceptual model report (aka "Sediment Dynamics Assessment and Uncertainty Analysis for San Francisco Bay"). The funds were needed as soon as possible. They had very little left and were shooting to have the draft out for SedWG review by mid-March.

Background: This report offers the first ever conceptual-level understanding of sediment movement at different scales within the Bay that synthesizes current knowledge while also identifying critical gaps. As such, compiling and synthesizing all of the existing data related to Bay sediment supply, transport, and deposition that needed to be included was going to be a large undertaking. However, this has been a much larger effort than initially envisioned due to the number of relevant sediment studies that were released after the project scope and budget were developed in Summer 2020. The additional time required for data compilation and synthesis has resulted in the depletion of budget for report completion. I am therefore requesting \$11,000 in RMP funds to support the finalization of the Sediment Conceptual Model report, which is scheduled to be published in May 2023. These additional funds are equal to approximately 8% of the original project budget.

Request #2

An additional \$8,200 was requested to complete the effort of developing the Sediment Monitoring and Modeling Workplan and updating management questions 3-5.

Scott requested the following:

• Allow the \$8,800 in 3023 strategic planning funds (that were supposed to go to MQ1 and 2)

to be used for SMMW/MQ3-5

· Provide an additional \$8,200 to complete the SMMW/MQ3-5 effort

Background: The original budget for the SMMW/MQ3-5 effort was \$10K. It was going to be tough to pull off the originally envisioned MMMW development effort with \$10,000, and the effort to update MQ 3 - 5 expanded a bit during the recent meeting with Tom and many representatives from the SedWG. A detailed updated scope indicates that an additional \$17K is needed to complete this effort.

The Sediment Workgroup is in the process of updating and prioritizing Management Questions 3-5 as part of the larger multi-year workplan overhaul for the RMP. The Sed WG had also planned on updating MQs 1 and 2 in 2023 and allocated \$10k to that effort. A subgroup of RMP stakeholders (Tom, Luisa, Maureen, and Tessa) met on Feb 8 to discuss this plan for updating MQs 1-2. They suggested pushing that discussion back a year in favor of focusing on MQs 3-5 given the RMPs focus on MQs 3-5 in the near term. Given that suggested direction, it would be beneficial to reallocate the \$8,800 remaining for the MQ 1-2 effort to the MQ 3-5 effort in 2023.

The email thread where approval was provided is attached.

The funds, totaling \$19,200 (\$11,000 for the conceptual model report and \$8,200 for the SMMW/MQ3-5 effort), will come from Undesignated Funds.



Jay Davis <jay@sfei.org>

Re: [members-bay-rmp-sc] RE: [SC] RMP Steering Committee (Time Sensitive): Two Funding Requests from the Sediment Workgroup

1 message

Jay Davis <jay@sfei.org>

Thu, Feb 23, 2023 at 10:08 AM

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To: "North, Karin" <Karin.North@cityofpaloalto.org> Cc: Adam Olivieri <awolivieri@gmail.com>, "Dunlavey, Eric" <Eric.Dunlavey@sanjoseca.gov>, Bay RMP Steering Committee <bay-rmp-sc@sfei.org>, Lester McKee <lester@sfei.org>, "Roa, Amanda" <amandar@deltadiablo.org>, Scott Dusterhoff <scottd@sfei.org>

Hi all;

Many thanks for all of the timely responses. We will move forward with these funding increases, and will follow the recommendations to minimize late-stage requests like these. We'll document these decisions in the materials for the April meeting.

Jay

On Tue, Feb 21, 2023 at 3:45 PM North, Karin <Karin.North@cityofpaloalto.org> wrote:

I support and also echo previous comments- I would be checking in the all the teams now to see what funding requests are going to be coming to the Steering Committee sooner rather than later.

Karin

From: Adam Olivieri <awolivieri@gmail.com>
Sent: Tuesday, February 21, 2023 1:30 PM
To: Dunlavey, Eric <Eric.Dunlavey@sanjoseca.gov>
Cc: Bay RMP Steering Committee <bay-rmp-sc@sfei.org>; Jay Davis <jay@sfei.org>; Lester McKee
<lester@sfei.org>; Roa, Amanda <amandar@deltadiablo.org>; Scott Dusterhoff <scottd@sfei.org>
Subject: Re: [members-bay-rmp-sc] RE: [SC] RMP Steering Committee (Time Sensitive): Two Funding Requests from the Sediment Workgroup

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

I support and echo all previous comments.

Adam

On Tue, Feb 21, 2023 at 1:27 PM Dunlavey, Eric < Eric.Dunlavey@sanjoseca.gov> wrote:

I also support the funding request and echo both Tom's and Amanda's feedback and concerns.

Eric

From: Roa, Amanda <amandar@deltadiablo.org> Sent: Tuesday, February 21, 2023 1:14 PM To: Jay Davis <jay@sfei.org>; Bay RMP Steering Committee <bay-rmp-sc@sfei.org> Cc: Scott Dusterhoff <scottd@sfei.org>; Lester McKee <lester@sfei.org> Subject: RE: [SC] RMP Steering Committee (Time Sensitive): Two Funding Requests from the S</lester@sfei.org></scottd@sfei.org></bay-rmp-sc@sfei.org></jay@sfei.org></amandar@deltadiablo.org>	Sediment Workgroup
[External Email]	
Jay – I support the funding requests and Tom's feedback. I'm still relatively new to the Steering C observations may be based on limited understanding and background, but there do seem to be minute funding requests in general. I'm not sure if this is due to changes is staffing and leadersh nice to know whether projects need additional money further in advance so that it can be incorpor approvals.	Committee so my quite a few last- ip, but it would be prated with budget
Best,	
Amanda	
Amanda Roa	
Delta	
n 925 756 1940 f 925 756 1960 m 925 383 3336	
www.deltadiablo.org amandar@deltadiablo.org	
TRANSFORMING WASTEWATER TO RESOURCES	
Please consider the environment before printing this email	
From: Jay Davis <jay@sfei.org> Sent: Tuesday, February 21, 2023 7:59 AM To: Bay RMP Steering Committee <bay-rmp-sc@sfei.org> Cc: Scott Dusterhoff <scottd@sfei.org>; Lester McKee <lester@sfei.org> Subject: [SC] RMP Steering Committee (Time Sensitive): Two Funding Requests from the Sedin</lester@sfei.org></scottd@sfei.org></bay-rmp-sc@sfei.org></jay@sfei.org>	ment Workgroup
[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sende	r and know the
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AM San Francisco Estuary Institute Mail - Re: [members-bay-rmp-sc] RE: [SC] RMP Steering Committee (Time Sensitive): Two Funding Requests ... content is safe.

Good morning SC members;

The Sediment Workgroup leads (Scott Dusterhoff and others) are seeking approval of two small funding requests related to projects that are underway and due soon. I am handling this via email so the work can continue and be completed on schedule. I ran these past Tom as a first step, since he is actively involved in the Sediment Workgroup. The requests are below, followed by Tom's response to the requests (he's in support but with some critical feedback). Please respond by COB tomorrow (Wednesday) if possible.

Thanks,

Jay

Request #1

Scott is requesting additional funds (\$11K) to complete the sediment conceptual model report (aka "Sediment Dynamics Assessment and Uncertainty Analysis for San Francisco Bay"). The funds are needed as soon as possible. We have very little left and are shooting to have the draft out for SedWG review by mid-March.

This report offers the first ever conceptual-level understanding of sediment movement at different scales within the Bay that synthesizes current knowledge while also identifying critical gaps. As such, compiling and synthesizing all of the existing data related to Bay sediment supply, transport, and deposition that needed to be included was going to be a large undertaking. However, this has been a much larger effort than initially envisioned due to the number of relevant sediment studies that were released after the project scope and budget were developed in Summer 2020. The additional time required for data compilation and synthesis has resulted in the depletion of budget for report completion. I am therefore requesting \$11,000 in RMP funds to support the finalization of the Sediment Conceptual Model report, which is scheduled to be published in May 2023. These additional funds are equal to approximately 8% of the original project budget.

Request #2

An additional \$17K is needed to complete the effort of developing the Sediment Monitoring and Modeling Workplan and updating management questions 3-5.

We are requesting the following:

 $\cdot\,$ Allow the \$8,800 in 3023 strategic planning funds (that were supposed to go to MQ1 and 2) to be used for SMMW/MQ3-5

Provide an additional \$8,200 to complete the SMMW/MQ3-5 effort

Background

The original budget for the SMMW/MQ3-5 effort was \$10K. It was going to be tough to pull off the originally envisioned MMMW development effort with \$10,000, and the effort to update MQ

San Francisco Estuary Institute Mail - Re: [members-bay-rmp-sc] RE: [SC] RMP Steering Committee (Time Sensitive): Two Funding Requests ...

3 - 5 expanded a bit during the recent meeting with Tom and many representatives from the SedWG. A detailed updated scope indicates that an additional \$17K is needed to complete this effort.

The Sediment Workgroup is in the process of updating and prioritizing Management Questions 3-5 as part of the larger multi-year workplan overhaul for the RMP. The Sed WG had also planned on updating MQs 1 and 2 in 2023 and allocated \$10k to that effort. A subgroup of RMP stakeholders (Tom, Luisa, Maureen, and Tessa) met on Feb 8 to discuss this plan for updating MQs 1-2. They suggested pushing that discussion back a year in favor of focusing on MQs 3-5 given the RMPs focus on MQs 3-5 in the near term. Given that suggested direction, it would be beneficial to reallocate the \$8,800 remaining for the MQ 1-2 effort to the MQ 3-5 effort in 2023.

Response from Tom

Jay – I support the funding requests with some reservations, which are essentially water under the bridge now.

• Tom

One reservation is that we should and could have identified these needs much earlier. I know there are competing demands on everyone's time, but I expected more effort before rather than after the end of the calendar year so these needs could have been forecasted and brought to the Steering Committee in January. A working update of the management questions should and could have been accomplished months ago.

Another is the Conceptual Model project should and could have been completed months ago. Months (nearly a year) ago, I was already willing to accept less than I was expecting due to resource constraints. However, I also expected more interaction on completing the Conceptual Model report, which will be a living document, and consideration of critical improvements that would require more funding that will be part of the Sediment Monitoring and Modeling Workplan. Also, it seems the additional funding will only produce a draft report and likely not account for review and potential further revisions.

We all have a lot of competing commitments, and we've taken on a lot of new stuff on top of what was already in plan, including efforts to integrate all current and new stuff.

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San Francisco Estuary Institute Mail - Re: [members-bay-rmp-sc] RE: [SC] RMP Steering Committee (Time Sensitive): Two Funding Requests ...

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Dr. Jay Davis
he/him
Senior Scientist
San Francisco Estuary Institute/Aquatic Science Center
4911 Central Avenue, Richmond, CA 94804
(530) 304-2308
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Dr. he/him Senior Scientist San Francisco Estuary Institute/Aquatic Science Center 4911 Central Avenue, Richmond, CA 94804 (530) 304-2308

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Jay Davis <jay@sfei.org>

[RMP Stormwater CEC} Next Steps - Stormwater CEC Groundwork Project budget/scope revision (Task 1)

1 message

Kelly Moran <kellym@sfei.org> To: Stormwater CEC SST <bay-rmp-stormwater-cec@sfei.org> Wed, Mar 29, 2023 at 6:26 PM

74

Dear RMP Stormwater CECs Stakeholder-Science Advisory Team members,

Based on supportive responses from Lisa Austin, Steve Corsi, Rob Budd, Jon Butcher, Derek Muir, Miriam Diamond, and Anne Cooper Doherty, and (verbally) from Tom Mumley and lack of negative feedback, we plan to take the Stormwater CEC Groundwork Project budget/scope revision (Task 1) to the RMP Steering Committee and indicate that this group supports approving it.

Thank you all for taking time to review it, with special thanks to our science advisors for sharing helpful ideas and information to support our next steps!

Kelly D. Moran, Ph.D. (*she/her*) Senior Scientist San Francisco Estuary Institute kellym@sfei.org 650.627.8690

Begin forwarded message:

From: Kelly Moran <kellym@sfei.org> Subject: [RMP Stormwater CEC} Stormwater CEC Groundwork Project budget/scope revision (Task 1) - request review by Tues March 21 Date: March 14, 2023 at 1:12:00 PM PDT To: Kelly Moran <kellym@sfei.org>

Dear RMP Stormwater CECs Stakeholder-Science Advisory Team members, One of the RMP's stormwater projects - the Stormwater CEC Groundwork project - was written last summer as a placeholder project, with the plan (Task 1) to make budget/scope adjustments once the team was able to dig into the project and determine more clearly what the scope would be. We are now at that point.

We have attached proposed budget and scope revisions to this email, as well as a copy of the original project scope. The revision moves funds between tasks for reasons explained in the right hand column and defers a modeling task to 2024 funds (which we anticipate accessing in August, timing that coincides with staff availability to initiate work on the task).

We request that you review the revisions by next Tuesday March 21 and let us know if you have any questions or concerns, and if you approve. If you need more time, please let me know.

After obtaining approval from this group, we will bring the revised scope to the Steering Committee for final approval at their April Meeting.

We have discussed this with Tom Mumley (Steering Committee Chair) as a first step and he approves of the revised scope and approval process.

Thank you!

Kelly D. Moran, Ph.D. (*she/her*) Senior Scientist San Francisco Estuary Institute

Stormwater CEC	s Groundwor	k Project Rev			
This updates the preliminat	ry scope and approxim	ate budget provided	in the project prop	oosal. This is th	e Task 1 deliverable for the project.
Task	Original Approximate Estimate of Hours	Original Approximate Estimate of Cost	Revised Estimated Hours	Revised Cost	Reason for change from original approximate estimate
Labor					
Task 1: Revised	45	9.000	45	9 000	No change
Task 2: Remote Sampler Development and Pilot Stormwater Sampling	242	47,000	355	69,000	Inability to leverage USGS work as planned (USGS did not initiate sampler work until well after SFEI and has different priorities for sampler parts). At recommendation of lab (AXYS) and our advisors, added container adherence test, since we have to use a new sampling container material due to need to use flexible containers for the portable remote sampler. At the recommendation of our advisors, added testing of select sampler parts for a few CECs (provided pro-bono by Heather Stapleton's lab), which revealed contamination with OPEs, most importantly in sampler tubing (used in both remote sampler options). Added time for initial exploration of alternative sampler tubing. (Exploration of options for other contaminated parts will be deferred pending results of blank testing and selection of preferred remote sampler). Instead of the planned brief report on sampler pros, cons, and lessons learned, these will be included in an SST meeting presentation prior to the SST discussion of the sampler recommendation. Added a sampler design summary with photos, which will be an appendix to the Stormwater CEC Approach report.
Task 3: Sampling Locations Database	254	32,000	354	46,300	Identified a substantially larger number of candidate sites than anticipated (about 200; had anticipated two dozen at most). Rescoped effort to focus on the most important sites (65 urban sites) and on database elements essential for initial monitoring design. The large number of potential sites is good news from the viewpoint of the integrated modeling and monitoring design approach, but increases cost due to the number of sites that had to go through initial filtering, travel time associated with site visits, and the time involved in even the most basic (rough) delineation of the upstream watershed, which is necessary to obtain land use characteristics. We tested online tools and determined that site visits are essential to screen for sampling feasibility, including the various options for remote sampler mounting. The revised budget will provide for site visits to the urban sites (65), rough watershed delineations for all sites that pass the site visit screening, and a preliminary land use data summary for each watershed.
Task 4: Analysis and Reporting of Prior CECs Monitoring Data	324	53,000	324	53,000	No change
Task 5: Modeling Groundwork	354	50,000	0	0	Task deferred; funds shifted to other tasks. Projects feeding into this task have been delayed. Task will be included in the RMP 2024 proposal for Stormwater CECs Monitoring & Modeling.
Task 6: Stakeholder Meetings	144	25,000	200	40,000	Original budget underestimated need for detailed scientific stakeholder engagement. Revised budget includes additional stakeholder and science advisor interaction, greater involvement of senior staff, longer SST meetings, and additional staff preparation time based on the SST meeting workflow presented at the first SST meeting.
Contingency		6,000		0	Reassigned to tasks above
Brief report	(included above)	(included above	2)	Cover project reporting through the Stormwater CECs Approach report (fall 2023) and the Stormwater CECs Screening Project reporting (summer/fall 2023)
Subtotal Labor		222,000		217,300	
Laboratory and Other Direct Costs					
Laboratory		22,000		26,700	Updated laboratory costs for sampler blank testing and additional costs for container adherence test
Equipment, travel,		6.000		6.000	No change
Subtotal Directs		28,000		32,700	
Grand Total		250,000		250,000	No change

Special Study Proposal: Stormwater Contaminants of Emerging Concern (CECs) Monitoring Groundwork

Summary: This project will provide a means for the RMP to complete the groundwork necessary to develop robust, practical, and cost-effective systems for stormwater CECs monitoring. Proposed project elements include: (1) developing and pilot-testing remote stormwater samplers to support CECs sample collection; (2) expanding and rebuilding the SFEI stormwater sampling sites lists and converting it into a database focused on flow-gauged sites that includes the most important site characteristics for CECs monitoring site selection; (3) analyzing prior CECs stormwater monitoring data to inform integrated monitoring and modeling; (4) CECs model development groundwork sufficient to support this project and prepare for implementation of CECs monitoring; and (5) convening an ECWG/SPLWG stakeholder and science advisor team to support this project in parallel with the Stormwater CECs Strategy project.

> Because work in progress on the Stormwater CECs Strategy project, CEC Stormwater Loads Modeling Exploration project, and CECs monitoring data to be received in mid-2022 may create the need to refine the conceptual project scope and budget presented here, a revised budget with explanation of changes will be prepared upon project initiation and reviewed with stakeholders. Anticipated work products include: identification of the best remote stormwater sampler for stormwater CECs monitoring; stormwater sampling locations database (internal SFEI resource); and a report documenting the project's outcomes (some of which will be wrapped into other RMP deliverables).

Estimated Cost:	\$250,000 (early release requested)
Oversight Group:	ECWG and SPLWG
Proposed by:	Alicia Gilbreath, Kelly Moran, Tan Zi, Don Yee, Rebecca Sutton
Time Sensitive:	Yes, because it pairs with the second year of the Stormwater CECs Strategy
	project and is a precursor to implementing stormwater CECs monitoring

Deliverable	Due Date
Task 1. Revised budget	Fall 2022
Task 2. Remote sampler development and pilot testing	Winter 2022-Spring 2023
Task 3. Sampling location database development	Fall 2022-Summer 2023
Task 4. Analysis of prior CECs monitoring data	Winter 2022-Summer 2023
Task 5. CECs model development groundwork	Fall 2022-Fall 2023
Task 6. Meetings of ECWG/SPLWG stakeholder & science advisor team	Winter 2022-Fall 2023
Task 7. Draft Brief Report	Fall 2023
Task 8. Final Brief Report	December 2023

PROPOSED DELIVERABLES AND TIMELINE

Background

In CY 2022 the RMP funded the first year of a two-year study to develop a stormwater CECs monitoring approach ("Stormwater CECs Strategy") (the RMP will consider funding the second year of that project in parallel with this project proposal). Due to high CECs monitoring costs and technical challenges, a well-thought out, carefully focused approach is essential and the first step in establishing a long-term stormwater CECs monitoring program that addresses both Emerging Contaminants (EC) and Sources, Pathways, and Loadings (SPL) Workgroup management questions. The near-term focus is on developing a monitoring approach to answer the near-term priority management question of whether the local watershed runoff loads of various CECs families to San Francisco Bay are big or small (i.e., order of magnitude) as compared to loads from other pathways (e.g., municipal wastewater).

Early work on the recently-started Stormwater CECs Strategy project has identified essential groundwork necessary to move forward with CECs monitoring. This proposed project will provide a means for the RMP to complete the groundwork necessary to develop robust, practical, and cost-effective systems for stormwater CECs monitoring in parallel with completion of the Stormwater CECs Strategy project. This project is also intended to build off of the EC Strategy update (planned for completion in 2022) and to feed into the SPL Strategy update (planned to occur in 2023).

A cornerstone of the new stormwater CECs monitoring approach is the integration of modeling and monitoring designs to maximize the value of each sampling event. Consequently, this project proposal includes groundwork for both monitoring and modeling.

A second key element of the stormwater CECs monitoring approach is the use of remote samplers to reduce sample collection costs and increase the number of samples that can be collected during each storm event. While the specific remote sampler has not been selected, it is already clear that purchasing these remote samplers will require a significant capital investment, which will be a necessary precursor to full implementation of stormwater CECs monitoring. To support the sampler purchasing decision, this project will test remote samplers to identify the best sampler type for CEC and other stormwater pollutant monitoring.

This project depends on work in progress on three projects: the Stormwater CECs Strategy project (anticipated completion in 2023), CEC Stormwater Loads Modeling Exploration project (2022), and CECs in Urban Stormwater project (2023, with final monitoring data to be received in mid-2022). Consequently, some elements of the necessary work remain in flux and will be refined as the project proceeds.

Study Objectives and Applicable RMP Management Questions

Management Question	Study Objective	Example Information Application
1) Which CECs have the potential to adversely impact beneficial uses in San Francisco Bay?	N/A	
2) What are the sources, pathways and loadings leading to the presence of individual CECs or groups of CECs in the Bay?	Complete groundwork for future monitoring.	Implementing monitoring projects to determine whether stormwater pathway loads of various CEC families are large or small relative to other pathways flowing into the Bay, to inform stakeholder prioritization of monitoring and/or management strategies.
3) What are the physical, chemical, and biological processes that may affect the transport and fate of individual CECs or groups of CECs in the Bay?	N/A	
4) Have the concentrations of individual CECs or groups of CECs increased or decreased in the Bay?	N/A	
5) Are the concentrations of individual CECs or groups of CECs predicted to increase or decrease in the future?	N/A	
6) What are the effects of management actions?	N/A	

Table 1. Study objectives and questions relevant to the RMP ECWG management questions.

Approach

We have outlined below our current vision for the anticipated project elements, which include: (1) a revised budget to be prepared upon project initiation; (2) remote stormwater samplers; (3) stormwater sampling location database; (4) analysis of prior monitoring data; (5) CECs model development groundwork; and (6) cross-workgroup stakeholder and science advisor team.

Task 1: Revised budget

Upon project initiation, we will produce an updated budget that reflects the latest developments in the ongoing related projects, with an explanation of changes and review by stakeholders.

Task 2: Remote Stormwater Samplers

The transition to CECs monitoring heightens the need to develop a practical, cost-effective method for remotely collecting stormwater samples. Remote sampler capabilities reduce collection costs and make it possible to obtain many more samples per storm event than is possible with current manual sampling techniques. Having this capacity will shorten the time frame necessary to address CECs management questions requiring stormwater monitoring data. This element of the project entails developing and pilot testing remote stormwater samplers to support CECs sample collection.

RMP scientists intend to test two very different remote stormwater samplers. The USEPA has developed an in-stream remote sampling device (Kahl et al., 2014) that collects whole water samples using a micropump. These samplers have been successfully field-deployed >100 times in the Great Lakes region. The EPA is collaborating with the USGS, which is starting the process of modifying the current sampler design to include telemetry and stage-measurement capabilities. If these samplers prove practical for RMP needs, they would be less expensive and offer much greater sampling location flexibility compared to traditional remote samplers.

SFEI has the capacity to construct this type of sampler for pilot testing. We are currently in discussion with the EPA and USGS about coordinating our construction of these relatively easy-to-build samplers with them and parallel piloting of these samplers in Water Year 2023. We envision purchasing sampler test parts to evaluate designs, followed by constructing at least two fully-functioning test samplers. As these samplers are novel, their evaluation will require both operational feasibility and chemical evaluation.

In addition to pilot testing the EPA/USGS samplers, we would also test traditional automated pumping samplers, specifically drawing upon samplers we already have in-house (ISCO, model 6712). These samplers are placed on the side of the channel with tubing extending into the channel. This traditional sampling approach is well-proven and may be needed if the EPA/USGS samplers do not prove workable (e.g., if they have unacceptable levels of blank contamination). Deployment of the ISCO samplers is anticipated to be more labor-intensive (securing the conduit and tubing in the channel, housing the ISCO or leaving it outside a lock box, which leaves it vulnerable to vandalism) and overall more expensive (due to the cost of the sampler, tubing and cleaning costs for the tubing, as well as a more intensive effort to deploy) than the EPA/USGS samplers.

A sampler evaluation outline, including a schedule for sampler testing, sample analysis methods selection, QA/QC methods and sampling plan, and finalization of field methods will be developed by RMP staff in consultation with ECWG and SPLWG advisors.

SFEI will conduct QA/QC testing of the samplers to evaluate potential for sample contamination. The initial primary focus will be on sampler design to minimize contamination when sampling for the RMP's priority CECs families (e.g., PFAS, OPEs, bisphenols, and vehicle/tire contaminants). This will involve materials research, purchase, operational (performance/functional) testing, and QA samples such as equipment blanks and field blanks. QA testing for sampler contamination is expected to involve blank samples run through the two different remote samplers tested side-by-side. Sampler testing will be conducted in a location anticipated to have limited potential

environmental contamination (e.g., from ambient air). The specific chemical families to be included in the sampler design and testing have not been determined. Their selection will depend on the availability of information about the potential presence of these chemical families in sampler construction materials and/or likely to be present in stormwater, availability of a reliable laboratory capable of performing chemical analysis of the necessary members of each CEC family with suitable (low ng/L) reporting limits, and cost.

The EPA/USGS samplers will also be tested for operational feasibility, with a focus on real world deployments of empty sampler boxes to ensure in-creek deployments are secure, followed by limited field deployment (up to four sites) of fully-functioning samplers to test in-storm operation in Bay Area creeks.

Additional tasks required for sampler chemical testing and field deployments include: securing permits, training staff, pre-season and pre-storm preparation, the deployment and retrieval of samplers, shipping bottles to laboratories, and cleaning equipment.

Data management and QA will include field collection data entry, communications with laboratories, and QA review.

Data interpretation will include evaluating samplers for potential contamination and examining pilot data in the context of other CECs sampling work (including measurements at Bay Area municipal wastewater treatment plants and, to the extent available, stormwater sampling experience elsewhere).

In addition to the evaluation of contamination by the samplers, the overall experiences with the samplers will be evaluated to identify the remote stormwater sampler recommended for RMP purchase. In a brief written report, we will detail the pros and cons of each sampler and lessons learned from deployments under different conditions.

Task 3: Sampling location database

To select sites for the most effective and efficient monitoring design for CECs, both in the current proposal and future monitoring programs, we must develop an organized sampling location database that includes pertinent information that would be relevant to sampling various CECs. RMP staff have begun developing this sampling location database through funding from the Stormwater CECs Monitoring Strategy project, including gathering lists of sites sampled by the USGS, Water Board, municipalities, and SFEI. We also solicited information on potential sampling locations from the Permittees. In this task, we will compile these stormwater sampling sites lists and convert the compiled list into a database focused on flow-gauged sites that includes the most important site characteristics for CECs monitoring site selection. Flow-gauged sites will be targeted initially since flow data is beneficial to supporting modeling.

More specifically, this task involves compiling the existing site lists; selecting the most promising sites (e.g., has flow gauge) and then conducting site visits to assess for feasibility and safety; selecting the most promising sites for watershed mapping and either gathering the watershed delineations if available or delineating in ArcGIS; setting up a database for SFEI internal use that

includes key watershed characteristics (e.g., land use, directly connected impervious area estimates, road area); and linking the watershed maps to the database.

Task 4: Analysis of prior CECs monitoring data

The goal of this task is to analyze prior RMP CECs monitoring data to inform the RMP's integrated monitoring and modeling approach for stormwater CECs.

In Water Years 2019-2022, the RMP funded a multi-year effort to screen Bay Area stormwater for the five families of CECs. Thirty urban stormwater and reference samples have been collected to date. The full dataset from this four-year study will be available later this year.

After QA review, the data and other available Bay Area regional data can be coupled with geospatial data (e.g., land use, road map, imperviousness), to provide an initial dataset for assessing sample variability. The data analysis will provide a general picture of existing monitoring data and a rough estimation of sources of variability in the monitoring data. By exploring the variability between samples collected at the same location and between samples collected at different locations, the data analysis can further guide both monitoring and modeling approaches. For example, the analysis can help us answer the following questions: What is the variability between samples at the same location and at different locations? Are there any linkages between variability and geospatial features? Assessing monitoring data variability can address some key monitoring design questions, such as how many replicates are needed for a sampling site and how many sites are required for load estimation purposes. From a modeling point of view, which monitoring locations are suitable for load monitoring?

We anticipate focusing on two to four of the families of CECs included in the CECs in Urban Stormwater project (PFAS, OPEs, bisphenols, and vehicle/tire contaminants). The specific chemical families to be included in the data analysis have not been determined. The selection will depend on the monitoring data quality review outcome and cost.

Reporting for this task will be integrated into the reporting for the CECs in Urban Stormwater project to be completed in 2023. The project budget assumes coordination with that project, which does not include the type of monitoring data analysis necessary to achieve this project's goals.

Task 5: CECs model development groundwork

Modeling to support estimating the relative quantity of CECs transported to the Bay via the stormwater pathway compared to other pathways was identified at the 2021 and 2022 ECWG meetings as a near-term high priority. The CEC Stormwater Loads Modeling Exploration project, to be completed in 2022, will provide recommendations for modeling capacity development and monitoring design to support screening-level CECs stormwater loads estimation in the near term.

This project element will build upon those recommendations to allow the RMP to conduct the most critical portion of the CECs model development groundwork in 2023. The goals for this project element are to: 1) develop initial capacity to support the stormwater CECs monitoring study design for screening level load modeling, 2) identify and verify model assumptions for CECs (which will necessarily be quite different than those used for PCBs, mercury, and sediment) through

literature review and monitoring data analysis, 3) design the load modeling approaches and model structures for selected CECs and identify the data gaps and uncertainty levels for load estimation of different CECs, and 4) refine the scope for future phases of CECs modeling efforts. This will be accomplished by implementing portions of the recommendations for modeling capacity development that will be outlined in the CEC Stormwater Loads Modeling Exploration project report to be completed later this year.

Funding this task will avoid a pause in Stormwater CECs modeling work. Integrating this task into this project will ensure the RMP will be able to move forward with its cost-saving vision of integrating modeling with monitoring as it develops a CECs monitoring program. This task will also provide modeling support necessary to complete the Stormwater CECs Strategy Project in 2023.

Task 6: Cross-workgroup stakeholder and science advisor team

We will convene an ECWG/SPLWG stakeholder and science advisor team to support this project in parallel with completion of the Stormwater CECs monitoring approach. We anticipate holding four team meetings.

Budget

Detailed below is a conceptual budget for this project. Because this project builds off of other work that is currently underway, some tasks may require more or less work than is estimated below. For example, our collaboration with USGS on the remote sampler development will clarify the sampler parts that we will need to purchase and may add or modify testing plans (e.g., around telemetry controls). To address this uncertainty, the project scope includes a revised budget, which we will review with stakeholders. We have also added in a small contingency for unanticipated challenges.

 Table 2. Conceptual Budget (to be finalized in consultation with stakeholders via Task 1)

Expense	Estimated Hours	Estimated Cost
Labor		
Task 1: Revised Budget	45	9,000
Task 2: Remote Sampler Development and Pilot Stormwater Sampling	242	47,000
Task 3: Sampling Locations Database	254	32,000
Task 4: Analysis and Reporting of Prior CECs Monitoring Data	324	53,000
Task 5: Modeling Groundwork	354	50,000
Task 6: Stakeholder Meetings	144	25,000
Contingency		6,000
Laboratory and Other Direct Costs (Approximate)		

Laboratory

22,000

Expense	Estimated Hours	Estimated Cost
Equipment, travel, shipping		6,000
Grand Total		250,000
Budget Justification		

SFEI Labor

Labor hours are estimated for SFEI staff to complete all project elements included in Table 2.

Laboratory Costs

Estimated laboratory costs for analysis of samples and associated QA/QC are included in Table 2. These will be refined and specific laboratory partner(s) will be identified in the revised budget prepared at the initiation of the project.

Other Direct Costs

Other direct costs are anticipated to include costs for purchasing sampler test parts to evaluate designs and constructing at least two fully-functioning test samplers, travel, shipping, other miscellaneous sampling and sampler-testing related equipment. Estimates of other direct costs will be refined in the revised budget (Task 1).

Early Funds Release Request

If this project is approved, we request early release of funds for use in 2022 to allow coordination with other parallel projects and sampler testing during the winter rainy season.

Reporting

A report documenting the project's outcomes will be prepared. To minimize cost, reporting for some tasks will be wrapped into other RMP deliverables (e.g., reporting for the monitoring data analysis task will be integrated into the reporting for the RMP's CECs in Urban Stormwater project, which is also slated to be completed in 2023).

Reference

Kahl, M.D., Villeneuve, D.L., Stevens, K., Schroeder, A., Makynen, E.A., Lalone, C.A., Jensen, K.M., Hughes, M. Holmen, B.A., Eid, E., Durhan, E.J., Cavallin, J.E., Berninger, J., and Ankley, G.T. 2014. An inexpensive, temporally integrated system for monitoring occurrence and biological effects of aquatic contaminants in the field. Environmental Toxicology and Chemistry, Vol. 33, 7, pp 1584-1595.



MEMORANDUM

Date:April 24, 2023To:RMP Steering CommitteeFrom:Jay Davis and Amy KlecknerSubject:DRAFT: Process for Consideration of Proposals for Use of MMP Funds

At the Steering Committee (SC) meeting on January 25, 2023, the SC considered and approved funding of two proposals using Mandatory Minimum Penalty (MMP) funds. MMP funds accrue for the RMP without being assigned to particular projects. The amount that accrues is substantial - for example in January 2023 the accrued amount was approximately \$140,000.

MMP funds can be used to partially or wholly fund RMP projects at the discretion of the SC. Separate MMP payments may be combined to jointly fund a larger project. MMP payments may also be combined with Supplemental Environmental Projects to jointly fund a larger project.

The proposals in January were presented directly to the SC without prior review by the Technical Review Committee (TRC) or a workgroup, and the SC noted the need for a formal process for consideration of proposals for use of MMP funds. The following bullets outline a suggested process.

- MMP funds can be used to partially or wholly fund projects that have been approved by the workgroups and TRC.
- New proposals for MMP funding (that have not been vetted by the TRC or workgroups) can be submitted directly to the SC without prior review by the TRC or a workgroup, as done at the January 2023 meeting.
- However, it is preferred that new proposals for MMP funding are first vetted by the TRC.

RMP SUPPLEMENTAL ENVIRONMENTAL PROJECT CANDIDATE LIST

Updated 04-21-23

Project	Estimated Budget Range	Nexus Keywords	Geograph Y	Matrix	Oversight Group	Project Lead	Year Proposed	Comments
Projects that have been reviev								
Identification and Pilot Monitoring of High-Priority Current Use Agricultural Pesticides in Region 2	\$75,000 - \$125,000	Emerging Contaminants, Pesticides	North Bay	Stormwa ter	ECWG	SFEI	2014	
Characterizing PFAS in San Francisco Bay Seals	\$80,000 - \$160,000	Emerging Contaminants, PFAS	South Bay	Seals	ECWG	SFEI	2018	Remove - Currently underway as part of a pilot S&T study
Non-targeted analysis of South Bay harbor seals	\$75,000 - \$250,000	Emerging Contaminants, Non-target	South Bay	Seals	ECWG	sfei	2020	Remove - Currently underway as part of a pilot S&T study
Monitoring for Halogenated Azo Dyes in Bay Sediments	\$65,000 - \$130,000	Emerging Contaminants, Azo dyes,	Whole Bay	Sediment	ECWG	SFEI	2020	
Developing Bioscreening Thresholds for the Glucocorticoid Receptor Cell Assay	\$50,000 - \$200,000	Water toxicity, aquatic species	Whole Bay	Surface water	ECWG	SFEI	2019	Remove SCCWRP has already launched this effort

Efficient extraction of endocrine disruptors from sediments from San Francisco Bay	\$15,000 - \$45,000	Water toxicity, aquatic species	Whole Bay	Sediment	ECWG	SFEI	2019	Remove - Not a priority for ECWG
Monitoring Microplastics in San Francisco Bay Sport Fish	\$50,000- \$200,000	Microplastic, Sport Fish	Whole Bay	Sport fish	MPWG	SFEI/U. Toront o	2019	
Microplastics in South Bay Sediment Cores	\$50,500	Microplastics	South Bay	Sediment	MPWG	SFEI	2020	Remove - Currently underway as pro bono study
Tire Particle/Contaminant Fate and Transport	\$90,000 - \$115,000	Microplastics	Whole Bay	Particles	MPWG	SFEI	2021	
Biogeochemical transformation rates in San Francisco Bay	\$50,000 - \$300,000	Nutrients	Whole Bay	Water	Nutrients	SFEI	2021	
Richmond Harbor PCB Conceptual Model Development	\$50,000- \$100,000	PCBs, Central Bay	Richmond Harbor	Sediment , Fish, Water	PCBWG	SFEI	2018	
Second Survey of PCBs in Prey Fish in San Leandro Bay	\$75,000	PCBs	San Leandro Bay	Prey fish	PEBWG	SFEI	2021	Remove - Being covered as part of S&T prey fish
Filling Bathymetry Data Gaps	\$50,000- \$250,000	Bathymetry	Whole Bay	Sediment	SedWG	USGS	2019	
Toxicity Reference Value Refinement	\$30,000	Toxicity, Dredged sediment, Beneficial reuse	Whole Bay	Sediment	SedWG	SFEI	2019	

Estimation of future sediment loadings from local tributaries	\$70,000	Sediment, future conditions	Whole Bay	Water	SedWG	SFEI	2021	
Napa and Sonoma Sediment Loads	\$138,500	Watershed sediment supply	North Bay	Sediment	SedWG	SFEI	2022	Addition: Special Study proposal put forth for 2023 funding but not selected.
Identifying mechanisms controlling selenium bioavailability at the base of the food web in North versus South San Francisco Bay	\$112,000	Selenium, Bioavailability, South Bay	North and South Bay	Water	SeWG	USGS	2020	
Use of Remote Stormwater Sampling Devices to Improve Temporal Coverage of Sampling	Year 1: \$160,000 Year 2: \$120,000	PCBs, methods development, remote samplers	Whole Bay	Stormwa ter	SPLWG	SFEI	2017; revised 2022	
Develop a Statistical Model for Trends Evaluation	\$35,000- \$50,000	Stormwater flows, pollutant loads, PCBs	Whole Bay	Stormwa ter	SPLWG	SFEI	2018	We will keep this idea, but change the content of previously proposed work and run it through at the SPLWG meeting.
Mallard Island Monitoring for Loads and Trends	\$150,000 - \$200,000	Sediment load, Delta, PCBs, Hg, Se, Pesticides microplastics, CECs, Bay mass balance	North Bay	Sediment	SedWG SPLWG ECWG	SFEI	2020	

Project	Estimated Budget Range	Nexus Keywords	Geography	Matrix	Oversight Group	Project Lead	Year Proposed
Nutrient exchanges between SFB and the coastal ocean (export, import)	\$50,000- \$300,000	Nutrients	Central, South Bays	Surface Water	Nutrients	SFEI	2023
Expanded water quality monitoring to support nutrient management decisions	\$50,000- \$300,000	Nutrients	Whole Bay	Surface Water	Nutrients	SFEI	2023
Biogeochemical transformation rates in San Francisco Bay: field studies and/or synthesis/interpretation	\$50,000- \$300,000	Nutrients	Whole Bay	Surface Water	Nutrients	SFEI	2023

Nutrient exchanges between SFB and the coastal ocean (export, import)

San Francisco Bay receives high loads of the nutrients nitrogen and phosphorus from Bay Area wastewater treatment effluent and agricultural runoff from the Delta. Recent model simulations suggest the Bay acts as a large nutrient source to the coastal ocean. However, the impacts of those nutrient exports on coastal ocean health are poorly understood. This project will build upon and enhance current work focused on assessing the importance of nutrient exchanges between SFB and the coastal ocean by pursuing one or more of the following: i) analyze output from existing numerical models to quantify nitrogen exports to the coastal ocean, and characterize factors that regulate seasonal and interannual variability in nitrogen export fluxes; ii) evaluate/characterize potential impacts in the coastal ocean from SFB-exported nutrients, through analysis of observational data (e.g., remote-sensed chla or other data) and/or through the application of coastal numerical models; iii) use existing numerical model(s) to characterize the contribution of coastal nitrogen to SFB nitrogen concentrations and budgets, including through sensitivity or scenario analysis (e.g., decreased POTW loads within SFB; upwelling/nonupwelling; climate oscillations) and using dynamic ocean boundary conditions. The results will address important knowledge gaps and inform management decisions related to managing San Francisco Bay's nutrient loads.

Expanded water quality monitoring to support nutrient management decisions

Over the last 10 years the SFB Nutrient Management Strategy (NMS) has been steadily expanding nutrient-related water quality monitoring, guided by its overarching observation program design (SFEI 2014; SFEI 2016). This project will augment SFB monitoring in one or more of the following ways: i) conducting high speed (high resolution) water quality mapping cruises, either by conducting additional monthly surveys in South Bay; ii) extending those surveys to Central, San Pablo, and Suisun Bays; iii) expand the NMS water quality mooring network by installing one or more water quality moorings in current under-sampled regions (Central Bay, San Pablo Bay) or adding additional sensors or telemetry at existing stations; iv) build capacity for monitoring chl-a or suspended sediment via remote sensing, through refining/validating algorithms or developing automated/semi-automated pipelines for processing and visualizing data; v) HAB-toxins in biota, e.g., continue the mussel-toxin time-series, identify additional priority toxins using the five-year mussel archive, toxins in other biota (e.g., anchovies, marine mammals); vi) utilize molecular data (eDNA) to characterize pelagic grazer communities and grazing rates; or vii) analyze/interpret water quality data or develop browser-based tools (e.g., visualization, report cards) for engaging stakeholders and public communication.

Biogeochemical transformation rates in San Francisco Bay: field studies and/or synthesis/interpretation

While the SFB Nutrient Management Strategy (NMS) has made major investments to expand nutrient-related water quality data (nutrients, chl-a, dissolved oxygen, etc.), field investigations are needed to measure the rates of important biogeochemical processes. The NMS recently carried out an initial intensive field study focused on sediment nutrient cycling (sediment diagenesis) in South Bay (SB) and Lower South Bay (LSB), but major data gaps remain for these regions (interannual variability and key drivers of sediment processes; water column rates) and in other regions (Central, San Pablo, Suisun). In addition, evidence from recent studies indicate that the interaction between LSB's high nutrient concentrations and tidal exchange with restored salt ponds has substantial near-field effects on water quality, and may also impact conditions in open-bay

habitats; and field studies are needed in order to quantitatively understand the nutrient/pond interactions (transformations+transport). This project will focus on one or more of the following topics: a) field studies to quantify biogeochemical transformation rates (sediment, water column), including studies in Central, San Pablo, or Suisun Bays, or addressing remaining data gaps in SB/LSB; b) field studies in LSB, collecting the physical and biogeochemical data needed to quantitatively characterize the dynamic reactive-transport processes that shape slough and open-bay water quality; c) data analysis and interpretation (including potential use of models) to quantify nutrient-related rates or mass balances in SFB habitats.



MEMORANDUM

Date:April 24, 2023To:RMP Steering CommitteeFrom:Jay DavisSubject:Considerations Behind Formation and Deactivation of RMP Workgroups

The RMP began convening workgroups after the first Program Review in the late 1990s. Since that time a number of workgroups and strategy teams have been formed and then deactivated after they have served their purpose. These include (among others) the following workgroups:

- Contaminant Fate
- Exposure and Effects
- Selenium
- Design Integration
- Chlorinated Hydrocarbons

Based on this experience over the past 25 years, the following considerations and criteria guide decisions about initiating, deactivating, and dividing labor among RMP workgroups.

• High priority management questions that are unanswered

An RMP aim to answer high priority management questions in a focus area is the fundamental driver of workgroup formation. Once the questions are answered, the workgroup may be deactivated (e.g., the Dioxin Workgroup).

 Significant, multi-year body of RMP special study work needing peer review of plans and projects

In the past, the minimum levels have been approximately \$50-\$100K per year of RMP special study funds over a span of five years. Below these levels it is not worth the effort of convening a workgroup and science advisors. When a focus area reaches these levels, formation of a workgroup should be considered.

• Opportunity to influence other funders via a strategic plan to answer priority Bay questions A possible exception to the minimum multi-year funding level is when the RMP aims to influence funding allocations by other entities. An example is the Microplastic Workgroup and Microplastic Strategy, which have brought funding to Bay microplastic studies in the past (Moore Foundation) and is anticipated to continue to do so. • Ensuring high quality peer review of RMP studies

The primary purpose of RMP workgroups is to provide for high quality peer review of RMP studies, from an early phase of study design, during implementation, and of the final report and other communication products. Creating a forum for interaction between science advisors, stakeholders, and investigators is a tremendously valuable benefit of this peer review process.

• Making good use of science advisors' time

RMP science advisors generously provide their time and expertise to review RMP studies. An important organizing principle for the workgroups is to be respectful of, and make the most efficient possible use of, the time and interests of the advisors. Part of this is minimizing the amount of time that advisors sit through discussions that are not of interest to them.

• Distributing workgroup workload

The Emerging Contaminant Workgroup's scope has increased over the years, to the point where an annual two-day meeting is needed to discuss all of the current and planned studies. CEC studies on microplastics and stormwater loading could conceptually be covered in the ECWG, but the ECWG cannot accommodate the additional workload. In addition, other advisors are need for these topics.



15. Status of RMP Deliverables andAction Items(10 minutes)

Deliverables & Action Items - just completed!

- Ethoxylated Surfactants in Water Paper is published in ES&T!!
- Toxicology thresholds for EC's "living document"
- PFAS & NTA in Marine Mammals study design and sample collection protocol.
- Short-term RMP sample archive purging.
- Margins Draft Report
- Floating Percentile Draft Report
- Stormwater Conceptual Model Report SFEI Contribution #1109
- Study design for Special Study: PFAS in Archived Sport Fish

Deliverables – Overdue...

- Sturgeon selenium monitoring data management
- QA summary report for 2020 S&T activities
- PCB In Bay contaminant modeling report section

Deliverables – delayed

- NB Selenium Clam and Water Data Report (4/30/23)
- 2021 QA Summary for S&T Activities (5/31/23)
- CEC in urban stormwater manuscript and management summary (11/30/23)
- CECs stormwater monitoring strategy document (2/28/24)
- Sediment Flux Richmond Bridge Data Release (12/31/24)

Deliverables – due before next meeting (8/10)

- Margins report final
- Floating percentile sediment guidelines final
- Quantifying stormwater flow and sediment flux to the Bay
- Impact of remediation actions on San Leandro Bay Recovery from PCB Contamination

Bay RMP Deliverables Stoplight Report_new

Bay RMP Deliverables Scorecard Report

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.

Focus Area	Project	Task	Deliverable	Assigned To	Due Date	Old Due Date	Days overdue	Due Date Extended (external delay)	Due Date Extended (internal delay)	# of extensions	Status	Comments
	Bay RMP (2022)	Special Study: PCB In- Bay contaminant modeling (SLB)	Report section outlining conceptual site mode, data gaps, and selected modeling approach.	Jay Davis	05/01/22			F			•	Work in 2022 focused on developing a proposal and workplan for in-Bay modeling as part of the WQIF project. Actual modeling work has begun in Q1 of 2023. A revised deliverable timeline will be developed under the guidance of the PCBWG at the spring meeting.
Selenium Strategy	•	2017 Sturgeon Derby Monitoring	Data management	Adam Wong	02/28/23	09/30/17	2027	F	F	2	•	4/19/23 - Fishing efforts began March 2023, continue in April. Fewer than hoped for numbers of fish. Selenium analysis delayed due to sample mass requirements. Data mgmt for this got lumped in with planned data mgmt for NB selenium monitoring work. No sturgeon plug monitoring in 2020 or 2023 delays data mgmt efforts another year Extended due date to 2023, assuming fishing efforts happen in November 2022. Will add a new deliverable for later years with funding
	Bay RMP (2023)	5. Communications	Q1 RMP eUpdate	Jay Davis	03/31/23			F	F			
	Bay RMP (2023)	1. Program Management	Update Deltek Program Plans for Open RMP Years	Jennifer Hunt	04/25/23			F	F		•	
	RMP SEP	15. North Bay Selenium Clam and Water Data Management and Reporting	Report	Jay Davis	04/30/23	12/01/21	504	F	F	2	•	At Jan 23 SC mtg, was conveyed that the report was in in progress and expected to be completed by March 2023. Lead author's (Melissa) workflow) 4/19/23 - USGS data delayed
142758	RMP SEP	20. MTC Bay Area Land Use Update	Collect and transform data relevant to RMP Stakeholders	Tony Hale	04/30/23	03/31/21	749	F	F	3	•	A critical partner, MTC, was directed away from the land-use data layer renewal by more pressing concerns. They are now fully engaged, have approved our approach, and provided our team access to the requisite resources. All of SFEI's tasks will be complete by the end of Q1 2022 but the final map from MTC may be further delayed due to rearrangement of priorities for staff at MTC. Still waiting for MTC. 4/19/23 - Still waiting for MTC
	Bay RMP (2020)	41. Selenium in North Bay clams and water	Technical Report	Melissa Foley	04/30/23	06/30/21	658	F		5	•	Data and workflow issues No sturgeon results from 2020 and 2022; technical report likely delayed until 2023. Workflow issues Internal workflow issues
	Bay RMP (2021)	Floating percentile method	Revise sediment guidelines using floating percentile methodology	Don Yee	04/30/23	06/30/21	658	F	F	6	•	RB & EPA too busy with WQIF proposals for draft review, expect response early/mid Nov, draft to sed group -Thanksqiying Delay getting comments from DMMO team on methods; internal delays due to workflow issues. Adam will have data analysis done by end of 2023.; Draft ready for SedWG meeting in May Received RB/EPA review comments Jan 2023, in revision draft out to SedWG/TRC for review
	Bay RMP (2023)	3. QA and Data Services	QAPP Update	Don Yee	04/30/23			-	1		•	
	Bay RMP (2023)	Ethoxylated surfactants in ambient water, margin sediment, wastewater, Part 2 (year 2of 2)	Task 1. Finalize sampling design and protocol with wastewater treatment facilities	Diana Lin	04/30/23			F			•	
	Bay RMP (2023)	Special Study: Tidal Area Remote Sampler	Development/selection/modifica tion of remote sampler	Don Yee	04/30/23				F		•	
	Bay RMP (2023)	Special Study: Tidal Area Remote Sampler	Pilot testing during rainy season	Don Yee	04/30/23			F	F		•	
	Bay RMP (2021)	21. Impact of Remediation Actions on San Leandro Bay Recovery from PCB Contamination	Task 4: Draft technical report	Diana Lin	05/01/23	10/31/22	170	F	F	1	•	Pushed back because due to delay in receiving laboratory results. PCB data from laboratory expected this week

Focus Area	Project	Task	Deliverable	Assigned To	Due Date	Old Due Date	Days overdue	Due Date Extended (external	Due Date Extended (internal	# of extensions	Status	Comments
	Bay RMP (2022)	Special Study: PCB In- Bay contaminant modeling (SLB)	Report section outlining hydrodynamic, sediment transport, and sediment bed model development, validation, and results.	Jay Davis	05/01/23						•	Work in 2022 focused on developing a proposal and workplan for in-Bay modeling as part of the WQIF project. Actual modeling work has begun in Q1 of 2023. A revised deliverable timeline will be developed under the guidance of the PCBWG at the spring meeting.
		I. S&T Laboratory	Complete Study Design	Don Yee	05/01/23			2	F		•	
	Bay RMP (2020)	3. QA and Data Services	QA Summary Report for 2020 S&T Activities	Don Yee	05/15/23	03/31/21	749	F	F	9	•	Sample data receiving mid May 2023, so adjusted date based on time for QA of data; SFEI workflow issues Some sediment ancillary data review not yet complete.
												prioritized margins report
	Bay RMP (2021)	26. Integrated watershed modeling and monitoring implementation strategy	Complete integraled watershed modeling and monitoring implementation strategy - Final report	Lester McKee	05/15/23	09/01/21	595	F	F	4	•	4/16/2023- Still going thru final review of anciairy data. Have spend the last 4 weeks laying out the vision (again) and getting internal agreement. Made a start on the writing in ernest yesterday. Plan to have a full internal wroking draft by mid April and a draft ready for external review by April 30th and then complete the project by Juna 30th. Main slow down has been staff capacity. It was on my plate since last August and only now do I have bandwidth. Only me and Alicia at the moment have time - Kelly and Tan are busy until 3rd week of April. I suggest this could end up not being true as wells or its possible the rest of the internal work word get done in April, pushing the external review to Jung and completion in July or August. So I propose October 31st as the new deadline to give us plenty of room. OK?
												Still to complete first draft and have internal review / input but the team have learned a lot and gelled around some core ideas over the past few years since this project was conceived so the result will be a much better planning document that if we had rushed at it 2 years ago. The timeline that seems practically doable would seem to be : 1. Internal draft completed by late Feb 2. RMP workgroup / committee review y mid-late March 3. Finalisation and publication early to mid April. Yes - Lester has completed a full internal draft and is getting input from the resto of the interenal team members presently. Jav is alraining to review that input around Mar 2.4
												and there maybe further team discussion in the week of Mar27-31 with the intent of reviews observations and the set of the set of Mar27-31 with the intent of getting it our for WG review late March at best. We typically provide 3 weeks for WG review so best case scenario is now late April for completion. So a further two week buffer on the best case takes the due date to May 15, 2023.
Sediment Strategy	RMP SEP	21. Sediment Dynamics Assessment and Uncertainty Analysis for San Francisco Bay	Interpretive Technical Report	Scott Dusterhoff	05/31/23	12/31/21	474	F	F	4	•	Final report completed following comments at the Sediment WG in May 2022. There have been unexpected delayed and staff turnover that has made this effort take longer than initially envisioned 4/19/23 - additional funding to complete report approved by SC 2/2023. Aim to publish
	Bay RMP (2020)	6 Status and Trends	Final Margins report	Don Yee	05/31/23	12/31/21	474			5		May 2023 after SedWG review. SEEL workflow issues
	50) (uni (2020)	Monitoring	r mar margine report		00/01/20	12/01/21						Internal draft reviewed, in revision draft to go to TRC, comments due back on 4/22.
	Bay RMP (2021)	3. QA and Data Services	QA Summary Report for 2021 S&T Activities	Don Yee	05/31/23	09/30/22	201	9	F	3	•	Bird eggs still outstanding To be completed with 2020 summary, lower priority than margins report awaiting bird eggs
	Bay RMP (2021)	F. 2021 Bird Egg Data Mgmt	Processing and upload bird egg data	Adam Wong	05/31/23	10/31/22	170	×	2	1	•	Samples still being processed. Guessed at an extension date Potentially? Eggs still being processed. Some subsamples will need to be shipped back to United States. 2 months is potentially unrealistic for analysis time for SGS AXYS as well.
	Bay RMP (2021)	Special Study: Nutrients Light Attenuation and moored sensors	Task 2: Technical memo evaluating the potential utility of remote-sensed products for estimating surface turbidity and light attenuation.	Dave Senn	05/31/23	12/31/22	109	7		1	•	Major shift in modeling-related work focus (including evaluation of RS-Kd) due to HAB event. Work thus far suggests that RS products have promising potential, but the in- depth analysis will happen over the next several months we pursued the sediment transport model triats first, and remote-sensing second). The recently-awarded EPA-WOIF project includes sunport for remote-sensing that (in
	Bay RMP (2021)	DMMO Database	DMMO Database	Cristina Grosso	05/31/23	12/31/21	474			2		addition other uses within the WQIF project) has the potential to greatly increase
			Enhancements						1			The Data Services team was busy with other RMP-related projects, and we did not hire a new DBA/DBD to replace Shira until November. Extension requested to allow time to discuss DMMO Database priorities with the DMMO Database Project Team. We have subcontracted with Exa to revise the data templates. SFEI is working on revising the upload scripts and modifying the database to
	Bay RMP (2022)	G. North Bay Selenium	Data from labs	Michael Weaver	05/31/23							accommodate the streamlined data template structure.
	Bay RMP (2022)	Monitoring F. North Bay Selenium	Process and upload data	Adam Wong	05/31/23							NB Selenium still sampling
		Monitoring Data Management										
	Bay RMP (2022)	Special Study: DMMO Database Enhancements	Make testing results accessible on the DMMO website	Cristina Grosso	05/31/23	12/31/22	109	F	F		•	
	Bay RMP (2023)	2. Governance	SPLWG Meeting	Lester McKee	05/31/23			F	F		•	
	Bay RMP (2023)	2. Governance	Sediment WG Meeting	Scott Dusterhoff	05/31/23			F	F		•	
	Bay RMP (2023)	G. Nearfield and margins sediment & prey fish	Complete Sampling and Analysis Plan	Miguel Mendez	06/01/23			F	F		•	
	Bay RMP (2023)	G. Nearfield and margins sediment & prey fish	Complete contracts	Miguel Mendez	06/01/23			F	-		•	

Focus Area	Project	Task	Deliverable	Assigned To	Due Date	Old Due Date	Days overdue	Due Date Extended (external delay)	Due Date Extended (internal delay)	# of extensions	Status	Comments
		I. S&T Laboratory Intercomparison Studies	Complete contracts	Beth Ebiner	06/01/23			P	7		•	
	Bay RMP (2023)	2. Governance	PCB WG Meeting	Jay Davis	06/03/23			3	3		•	
Emerging Contaminants	RMP SEP	16. Sunscreen in Wastewater	Technical Report	Diana Lin	06/15/23	10/31/21	535	F		4	•	SFEI will be leading report instead of Stanford U because Bill Mitch's student has graduated. Sample collection was delayed one year due to Covid pandemic. Samples will be collected summer 2023.
	Bay RMP (2023)	2 Governance	June TBC Meeting	Amy Kleckner	06/23/23							Draft report undergoing review process.
Sources Pathways and	RMP SEP	14. Quantifying	Technical Report	Alicia Gilbreath	06/30/23	12/01/21	504			3		Added Kyle Stark (RI.) to assist the project to completion COVID and dry years so far -
Loadings		Stormwater Flow and Sediment Flux to the Bay			00/00/20	12/01/21	304			5		not on the data have been collected. Water Board staff and confirmed an extension is possible and we have informed contractors. I suggest we push this to December 31st, 2022. I think it doing to be hard to get USGS to work up the data in the spring - thats the time they spend setting up new monitoring stations.
Sources Pathways and Loadings	RMP SEP	14. Quantifying Stormwater Flow and Sediment Flux to the Bay	Summary Factsheet	Alicia Gilbreath	06/30/23	12/01/21	504	F	F	3	•	Added Kyle Stark (RL) to assist the project to completion COVID and dry years so far- not much data have been collected. Water Board staff and confirmed an extension is possible and we have informed contractors. I suggest we push this to December 31st, 2022. I think it doing to be hard to get USGS to work up the data in the spring - thats the time they spend setting up new monitoring stations.
Sources Pathways and Loadings	RMP SEP	14. Quantifying Stormwater Flow and Sediment Flux to the Bay	Post data to CD3	Alicia Gilbreath	06/30/23	12/01/21	504	F	F	3	•	Added Kyle Stark (RL) to assist the project to completion COVID and dry years so far- not much data have been collected. Water Board staff and confirmed an extension is possible and we have informed contractors. I suggest we push this to December 31st, 2022. I think it doing to be hard to get USGS to work up the data in the spring - thats the time they spend setting up new monitoring stations.
	Bay RMP (2021)	Small Tributaries Loading POC Watershed Reconnaissance Monitoring	Laboratory analysis, QA & Data Management	Adam Wong	06/30/23	09/01/21	595	F	F	3	•	Final Samples only sent out end of August. Still don't have data. Haven't received data back from the lab, most notably from SGS AXYS as we haven't finalized the contract with them. Discussions still ongoing about wrapping analysis or WY21 samples in with WY22.
												Final samples still not processed by SGS AXYS
	Bay RMP (2022)	Special Study: STLS WY21 POC Recon Monitoring	Final report	Alicia Gilbreath	06/30/23			F	F		•	Sum do not have linar analyses from SGS AATS. Plan is to wrap in with vvt 21, 22, 23.
	Bay RMP (2023)	5. Communications	Q2 RMP eUpdate	Jay Davis	06/30/23			2	3		•	
	Bay RMP (2023)	5. Communications	Updates to RMP website - Q2	Martin Trinh	06/30/23			F	2		•	
	Bay RMP (2023)	Special Study: Suspended Sediment in LSB-Year 2	Publically available wave height and period data from one station in South Bay	Melissa Foley	06/30/23			F	F		•	
	Bay RMP (2021)	21. Impact of Remediation Actions on San Leandro Bay Recovery from PCB Contamination	Task 5: Final technical report	Diana Lin	07/01/23	12/31/22	109		F	1	•	
	Bay RMP (2023)	C. 2023 Dry season Bay Water Cruise	Complete contracts	Amy Kleckner	07/01/23			F	F		•	
	Bay RMP (2023)	E. 2023 Wet season	Complete contracts	Amy Kleckner	07/01/23			2	-		•	
	Bay RMP (2023)	L. Ambient Bay sediment	Complete contracts	Beth Ebiner	07/01/23			3	3		•	
	Bay RMP (2023)	2. Governance	July SC Meeting	Amy Kleckner	07/23/23						•	
	Bay RMP (2023)	1. Program Management	Q2 RMP Financial Report	Jennifer Hunt	07/25/23						•	
	Bay RMP (2023)	1. Program Management	Update Deltek Program Plans	Jennifer Hunt	07/25/23			3	-		•	
	Bay RMP (2023)	1. Program Management	SC Meeting Stoplight Report	Martin Trinh	07/25/23							
	Bay RMP (2023)	4. Annual Reporting	2023 Annual Meeting Agenda	Jay Davis	07/30/23							
	Bay RMP (2023)	PFAS in Archived Sport	Task 4. Data QA review	Miguel Mendez	07/30/23						•	
Selenium Strategy	Bay RMP (2019)	Fish Selenium in Muscle Pluas	Collect and analyze muscle	Melissa Folev	07/31/23	03/31/20	1114			2		Muscle plug samples will be collected during CDFW cruises between August and
	.,		plug samples	,,								October 2019. Laboratory analysis will follow. Data management and reporting was not funded. https://www.sfei.org/sites/default/files/events/SeWG%20-%2003%20- %20Sturgeon%20Muscle%20/Ug.pdf NOT enough tissue was collected by CDFW in 2019 so this will be delayed until 2020. No ability for DFW to collect samples for the RMP in 2020 and 2022 so this will be delayed again until 2023. Sampling will occur in March & April 2023.
	Bay RMP (2023)	C. 2023 Dry season Bay Water Cruise	Complete Sampling and Analysis Plan	Amy Kleckner	08/15/23				-			First draft out by 3/24/23
	Bay RMP (2023)	L. Ambient Bay sediment	Complete Sampling and Analysis Plan	Don Yee	08/15/23			2	F			
	Bay RMP (2023)	Ethoxylated surfactants in ambient water, margin sediment, wastewater, Part 2 (year 2of 2)	Task 2. Complete wastewater effluent sample collection	Diana Lin	08/30/23				F		•	
	Bay RMP (2023)	Special Study: STLS Regional Model Development	Model data collation and preparation	tanz@sfei.org	08/30/23			F	7		•	

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	Bay RMP (2022)	Special Study: Ethoxylated surfactants in ambient water, margin sediment, wastewater. Part 2	Final Report	Diana Lin	08/31/23			F			•	
	Bay RMP (2023)	G. Nearfield and margins sediment & prey fish	Collect samples	Miguel Mendez	08/31/23			F	F			
	Bay RMP (2022)	Special Study: Stormwater monitoring strategy for CEC's	Final strategy document	Kelly Moran	09/01/23			F			•	
	Bay RMP (2022)	Special Study: CEC modeling exploration	Report	tanz@sfei.org	09/01/23	12/31/22	109	-	-			
	Bay RMP (2023)	E. 2023 Wet season water sampling	Complete Sampling and Analysis Plan	Amy Kleckner	09/01/23			P	F			
	Bay RMP (2023)	2. Governance	September TRC Meeting	Amy Kleckner	09/22/23			F	-			
	Bay RMP (2023)	C. 2023 Dry season Bay Water Cruise	Collect samples	Amy Kleckner	09/27/23			P	F			
	Bay RMP (2023)	L. Ambient Bay sediment	Collect samples	Don Yee	09/27/23			F	2			
	Bay RMP (2021)	Selenium in Clams	Task 4. Draft Report	Amy Kleckner	09/30/23	12/31/22	109	K	2	1		delayed to allow for 2022 collections before working on the report
	Bay RMP (2021)	3. QA and Data Services	QA Summary Report for 2022 S&T Activities	Don Yee	09/30/23			F	F			
	Bay RMP (2022)	Special Study: CEC in Urban Stormwater Year 4	Final manuscripts and management summary	Rebecca Sutton	09/30/23			F	F			
	Bay RMP (2022)	Special Study: Tire- related contaminants in Bay water (wet season)	Final stormwater manuscript	Rebecca Sutton	09/30/23			F			•	
	Bay RMP (2023)	4. Annual Reporting	RMP Update	Jay Davis	09/30/23			P	2			
	Bay RMP (2023)	5. Communications	Updates to RMP website - Q3	Martin Trinh	09/30/23			F	-			
	Bay RMP (2023)	4. Annual Reporting	Annual Meeting	Amy Kleckner	10/14/23			F	P			
	Bay RMP (2023)	2. Governance	October SC Meeting	Amy Kleckner	10/20/23			F	P			
	Bay RMP (2023)	1. Program Management	2024 Multi-Year Plan	Amy Kleckner	10/23/23			F	P			
	Bay RMP (2023)	1. Program Management	2024 Detailed Workplan and Budget	Amy Kleckner	10/23/23			L F	L.			
	Bay RMP (2023)	1. Program Management	Q3 RMP Financial Report	Jennifer Hunt	10/24/23			F	F			
	Bay RMP (2023)	1. Program Management	Update Deltek Program Plans for Open RMP Years	Jennifer Hunt	10/24/23			F	<u> </u>			
	Bay RMP (2023)	1. Program Management	SC Meeting Stoplight Report	Martin Trinh	10/24/23			F	P			
	Bay RMP (2023)	Special Study: STLS Regional Model Development	Control measures impact estimation	tanz@sfei.org	10/30/23			F			•	
	RMP SEP	29. PFAS in Archived Sport Fish Communications Supplement	Manuscript	Miguel Mendez	10/31/23			F	F		•	Poster presentation at SETAC 4/30-5/4
	Bay RMP (2023)	5. Communications	Q3 RMP eUpdate	Jay Davis	10/31/23			F	F			
	Bay RMP (2023)	5. Communications	RMP Update to BACWA	Amy Kleckner	10/31/23			P	2			
	Bay RMP (2023)	5. Communications	RMP Update to BAMS (Bay Area Municipal Stormwater)	Amy Kleckner	10/31/23			F				
	Bay RMP (2023)	5. Communications	RMP Update to LTMS	Amy Kleckner	10/31/23			F	P			
	Bay RMP (2023)	5. Communications	RMP Update to BPC	Amy Kleckner	10/31/23			F				
	Bay RMP (2023)	5. Communications	RMP Update to WSPA	Amy Kleckner	10/31/23			F	F			
	Bay RMP (2023)	5. Communications	RMP Update at RB2 Meeting	Amy Kleckner	10/31/23			H H	L'		•	
	RMP SEP	30. Analysis and Reporting of NTA Sediment Data	Manuscript	Ezra Miller	11/30/23				P		•	Continuation of 3018-036.
	Bay RMP (2021)	Special Study: CEC in Urban Stormwater Year 3	Task 5. Final manuscripts and management summary	Rebecca Sutton	11/30/23	07/01/23	-73	F	F	1	•	4/18/2023 - Preliminary data interpretation led one analytical partner to reanalyze samples. All data have been received, most has completed QA review, and manuscript preparations are underway.
	Bay RMP (2023)	2. Governance	December TRC Meeting	Amy Kleckner	12/09/23			2	F			
	Bay RMP (2023)	PFAS and NTA in Marine Mammals (year 1 of 2)	Task 2. Sample collection	Rebecca Sutton	12/30/23			F	F			
	Bay RMP (2023)	PFAS in Archived Sport Fish	Task 6. Final report	Miguel Mendez	12/30/23			F	F			
	Bay RMP (2023)	Special Study: STLS Regional Model Development	Final modeling report and data sharing portal	tanz@sfei.org	12/30/23			F			•	

Focus Area	Project	Task	Deliverable	Assigned To	Due Date	Old Due Date	Days overdue	Due Date Extended (external delay)	Due Date Extended (internal delay)	# of extensions	Status	Comments
	Bay RMP (2023)	Special Study: Tidal Area Remote Sampler	Data upload to CEDEN	Don Yee	12/30/23			9	P			Unclear if we are actually expecting site data (on contaminants?) uploadable to CEDEN
	Bay RMP (2023)	Special Study: Sediment Delivery to Marshes in C&N Bays: project expansion	Data release: Bay shallows and marsh-top SSC data (PCMSC)	Melissa Foley	12/30/23			F	7		•	Jessie Lacy and Karen Thorne (USGS) conducting this work
	Bay RMP (2023)	Special Study: Sediment Delivery to Marshes in C&N Bays: project expansion	Data release: deposition, accretion, and vegetation characteristics (WERC)	Melissa Foley	12/30/23			7	F		•	
Emerging Contaminants	RMP SEP	19. Quaternary Ammonium Compounds (QACs) in Bay Area Wastewater	QA/QC and data management	Diana Lin	12/31/23	12/31/21		F	F	2	•	Bill Arnold received an NSF grant that allows for two additional years of monitoring (pro bono). Preliminary data for samples collected to date will be presented at the 2022 ECWG meeting., Bill Arnold will present preliminary data at ECWG
	RMP SEP	23. Integrated Watershed Bay Modeling Strategy and Pilot Implementation	Report	tanz@sfei.org	12/31/23			F	-		•	Jan. 2023 - Draft report in progress
	RMP SEP	24. Regional Watershed Spreadsheet Model	Updated model	Alicia Gilbreath	12/31/23	06/05/21	683	F	F			Jan. 2023 - Waiting for land use update
	RMP SEP	30. Analysis and Reporting of NTA Sediment Data	Fact Sheet	Ezra Miller	12/31/23			P			•	
PCB Strategy	Bay RMP (2019)	Priority Margin Unit Stormwater PCB Monitoring	Stormwater sample collection at Emeryville Cresent sites in WY19 and WY20	t Alicia Gilbreath	12/31/23	04/30/20	1084	F		2	•	Extended through WY2023 Analysis of samples will be covered by SEP funds (3300-011-A). Results will be reported in the WY20 STLS POC Reconnaissance Monitoring Report (due 12/31/20). https://www.sfei.org/sites/default/files/events/PCBW(G%20-%2002%20- %20Pronfy-z0Mragin%220Unti%22STormwater%20PCE pot Due to low rainfall, sampling was not completed in WY20 and so the study shall be extended into WY21. This project got an extension because of the low rainfall seasons during climatic years 2020 and 2023.
	Bay RMP (2020)	21. Priority Margin Unit Stormwater PCB Monitoring	Stormwater sample collection at Emeryville Cresent sites in WY19 and WY20	t Alicia Gilbreath	12/31/23	04/30/21	719	F	Ţ	2	•	This project got an extension because of the low rainfall seasons during climatic years 2020 and 2023. Funding rolled forward from previous years so sampling can happen this wet season. If wet season does not include a storm at a low tide, then we will need to roll forward protect were if executive.
	Bay RMP (2021)	Selenium in Clams	Task 5. Final Report	Amy Kleckner	12/31/23	02/28/23	50		3	1		delayed to allow for 2022 collections before working on the report
	Bay RMP (2022)	Special Study: STLS Regional Model Development	Final modeling report and data sharing portal	tanz@sfei.org	12/31/23			P	F		•	
	Bay RMP (2023)	1. Program Management	RMP Participation Letters for BACWA and WSPA Agencies	Amy Kleckner	12/31/23			F	F			
	Bay RMP (2023)	1. Program Management	Honoraria Payments to Science	Amy Kleckner	12/31/23			9	F			
	Bay RMP (2023)	3. QA and Data Services	Online Data Access CD3	Cristina Grosso	12/31/23			-	3			
	Bay RMP (2023)	3. QA and Data Services	Database Maintenance	Adam Wong	12/31/23			-	-			
	Bay RMP (2023)	3. QA and Data Services	Updates to SOPs and Templates	Adam Wong	12/31/23			F				
	Bay RMP (2023)	3. QA and Data Services	DMMO Database Support	Cristina Grosso	12/31/23			-	2			
	Bay RMP (2023)	5. Communications	Q4 RMP eUpdate	Jay Davis	12/31/23			2	7			
	Bay RMP (2023)	5. Communications	Updates to RMP website - Q4	Martin Trinh	12/31/23			P	3			
	Bay RMP (2023)	A. USGS Sacramento Support	Continuous suspended sediment monitoring at 5 stations	Amy Kleckner	12/31/23			F	F		•	
	Bay RMP (2023)	B. USGS Menlo Park Support-Contract	Monthly measurements of basic water quality at 38 stations	Amy Kleckner	12/31/23			P	F			
	Bay RMP (2023)	J. Sample Archive	(1) Update documentation and template (2) General upkeep and maintenance for tools and data (3) Set up User Accounts and Help Desk (4) Manage internal and external data requests	michaelw@sfei.org	12/31/23			F	F		•	
	Bay RMP (2023)	J. Sample Archive	Short-term RMP sample archive purging	Martin Trinh	12/31/23			F	F			
	Bay RMP (2023)	Special Study: Ground work CEC Stormwater	Final Brief Report as a presentation to SST and an appendix to Stormwater CEC approach	Kelly Moran	12/31/23						•	
	Bay RMP (2023)	K. S&T Field Sampling Report & Support	Garage & lab manager	Martin Trinh	01/01/24			F	F			
	Bay RMP (2023)	Ethoxylated surfactants in ambient water, margin sediment, wastewater, Part 2 (year 2of 2)	Task 3. Complete laboratory analysis of samples	Diana Lin	01/30/24			7	F		•	
	Bay RMP (2023)	22. Nutrients moored sensors	Sensors deployed, downloaded, maintained, and calibrated	, Dave Senn	01/30/24			P	P			

Focus Area	Project	Task	Deliverable	Assigned To	Due Date	Old Due Date	Days overdue	Due Date Extended (external delay)	Due Date Extended (internal delay)	# of extensions	Status	Comments
	Bay RMP (2023)	Special Study: Tidal Area Remote Sampler	Report (draft and final)	Don Yee	01/30/24			P	7			
	Bay RMP (2023)	1. Program Management	Q4 RMP Financial Report	Jennifer Hunt	01/31/24			F	F			
	Bay RMP (2023)	D. 2023 Dry season Bay Water Cruise Data Mgmt	Process and upload dry season Bay water cruise data	Adam Wong	01/31/24			-	F			
	Bay RMP (2023)	H. Nearfield and margins sediment & prey fish data momt	Process and upload sampling data	Adam Wong	02/28/24			F	P		•	
	Bay RMP (2023)	M. Ambient Bay sediment	Process and upload sampling data	Adam Wong	02/28/24			P	F			
		I. S&T Laboratory	Presentation to the TRC on findings from IC studies	Don Yee	03/01/24			P	F			
	Bay RMP (2023)	Special Study: Suspended Sediment in LSB-Year 2	Publically available 15-minute SSC time series from eight stations in South Bay and Lower South Bay	Melissa Foley	03/30/24			F	F		•	
	Bay RMP (2023)	Ethoxylated surfactants in ambient water, margin sediment, wastewater, Part 2 (year 2of 2)	Task 4. QA/QC and data management	Diana Lin	04/30/24			F	7		•	
	Bay RMP (2023)	Nontargeted Data Mining	Task 3. Presentation to ECWG on additional targets	Rebecca Sutton	04/30/24				F			
	Bay RMP (2023)	Special Study: Suspended Sediment in LSB-Year 2	Report detailing data collection, turbidity-to-SSC calibrations, and limited, descriptive interpretation	Melissa Foley	04/30/24			F			•	
	Bay RMP (2023)	Special Study: Sediment Delivery to Marshes in C&N Bays: project expansion	Report (draft paper) investigating the relationships between SSC in the shallows, SSC at long-term channel stations, and sediment accretion on marshes	Melissa Foley	04/30/24						•	Jessie Lacy and Karen Thorne (USGS) conducting this work
	Bay RMP (2023)	Special Study: Sediment Delivery to Marshes in C&N Bays: project expansion	Final Presentation to RMP Sediment Workgroup	Melissa Foley	04/30/24			F			•	Jessie Lacy and Karen Thorne (USGS) conducting this work
	Bay RMP (2022)	Special Study: PCB In- Bay contaminant modeling (SLB)	Final report	Jay Davis	05/01/24			F	9		•	
	Bay RMP (2023)	E. 2023 Wet season water sampling	Collect samples	Amy Kleckner	05/01/24			1	F			
Emerging Contaminants	RMP SEP	19. Quaternary Ammonium Compounds (QACs) in Bay Area Wastewater	Present data at ECWG	Diana Lin	05/31/24	05/31/22		F	F	1	•	Additional funding from NSF increased the scope of the project. The ECWG agreed to the suggested revised due dates for the deliverables so they can include the additional data.
	Bay RMP (2023)	Nontargeted Data Mining	Task 4. Spreadsheet of compiled data mining results	Rebecca Sutton	07/30/24			F	F			
	Bay RMP (2022)	Special Study: PCBs in sediment and fish SS/BC	Technical Report	Jay Davis	08/01/24			F	F			
	Bay RMP (2023)	Special Study: PCBs in sediment and fish SS/RC (Year 2)	Final Technical Report	Jay Davis	08/30/24			F	P		•	
Emerging Contaminants	RMP SEP	19. Quaternary Ammonium Compounds (QACs) in Bay Area Wastewater	Technical Memo	Diana Lin	08/31/24	08/31/22		-	F	2	•	Additional funding from NSF increased the scope of the project. The ECWG agreed to the suggested revised due dates for the deliverables so they can include the additional data.
	Bay RMP (2022)	Special Study: Sediment delivery to marshes in C&N Bay	Report	Melissa Foley	09/01/24	12/01/23	-226	F	F		•	Jessie Lacy and Karen Thorne (USGS) doing the work
	Bay RMP (2023)	3. QA and Data Services	QA Summary Report for 2023 S&T Activities	Don Yee	09/30/24			F	F			
	Bay RMP (2023)	Special Study: STLS WY21 POC Recon Monitoring	Laboratory analysis, QA, & Data Management	Alicia Gilbreath	09/30/24			F	F		•	
	Bay RMP (2023)	Tire and roadway contaminants in wet season Bay water (year 1 of 2)	Task 4. QA/QC, data management, and data upload	Rebecca Sutton	10/30/24			F			•	
	Bay RMP (2023)	F. 2023 Wet season water data mgmt.	Process and upload wet season water sampling data	Adam Wong	10/31/24			F	F			
	Bay RMP (2023)	Ethoxylated surfactants in ambient water, margin sediment, wastewater, Part 2 (year 2of 2)	Task 6. Final report	Diana Lin	11/30/24			F	F		•	
	Bay RMP (2023)	Special Study: STLS WY21 POC Recon Monitoring	Wet season water samples collected and sent to the labs for analysis	Alicia Gilbreath	12/30/24			-	7		•	
	Bay RMP (2023)	Special Study: Sediment Delivery to Marshes in C&N Bays: project expansion	Presentation to Bay Delta Science or State of the Estuary Conference	Melissa Foley	12/30/24			1			•	Jessie Lacy and Karen Thorne (USGS) conducting this work

Focus Area	Project	Task	Deliverable	Assigned To	Due Date	Old Due Date	Days overdue	Due Date Extended (external delay)	Due Date Extended (internal delay)	# of extensions	Status	Comments
	Bay RMP (2023)	Special Study: Sediment Flux Richmond Bridge	Data release	Scott Dusterhoff	12/31/24	05/11/23	-22	F	2	1		Work not moving forward in 2023 as planned
	Bay RMP (2023)	Special Study: STLS WY21 POC Recon Monitoring	Interpretation & reporting for BAMSC	Alicia Gilbreath	02/28/25			F	F		•	
	RMP SEP	26. PFAS & Chlorinated Paraffins in Bay Sediment	?	Rebecca Sutton	04/04/25			F	F			
	RMP SEP	27. High speed mapping of water quality parameters on the eastern shoal of South San Francisco Bay	Data release	Ariella Chelsky	06/30/25			F	F		•	
	RMP SEP	27. High speed mapping of water quality parameters on the eastern shoal of South San Francisco Bay	Technical Report	Ariella Chelsky	06/30/25			F	P		•	
	Bay RMP (2023)	PFAS and NTA in Marine Mammals (year 1 of 2)	Task 5. Draft manuscript(s), S&T study design recommendations (technical memo), presentation to TRC.	Rebecca Sutton	06/30/25				-		•	
	Bay RMP (2023)	Special Study: STLS WY21 POC Recon Monitoring	Final report	Alicia Gilbreath	06/30/25			F	F		•	
	RMP SEP	28. SF Bay Sediment Transport and Fate Modeling	Technical Report	Dave Senn	09/05/25			F	-		•	
	Bay RMP (2023)	Tire and roadway contaminants in wet season Bay water (year 1 of 2)	Task 7. Final short report	Rebecca Sutton	09/30/25			F	F		•	
	Bay RMP (2023)	PFAS and NTA in Marine Mammals (year 1 of 2)	Task 6. Final manuscript(s)	Rebecca Sutton	09/30/25			-	F			

Bay RMP Action Items Stoplight Report_New

Bay RMP Action Items 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.

Primary	Deliverable	Assigned To	Due Date	Old Due Date	Days overdue	# of extensions	Due Date Extended (external delay)	Due Date Extended (internal delay)	Status	Comments	Meeting Date
SC Action Items from 11/02/2022	Highlight how long bills are outstanding in the future	Jennifer Hunt	01/25/23				F	F	•		11/02/22
SC Action Items from 01/25/23	Include NMS projects in the SEP list	Jay Davis	02/28/23				P	3	•		01/25/23
SC Action Items from 01/25/23	Jay coordinate with RMP staff to clean up the current SEP list, share it with Tom, and then bring it to the SC at the April meeting	Jay Davis	03/30/23				F	F	•		01/25/23
TRC Action Items from 03/29/23	Send out calendar invites for June 20, 2023 TRC meeting (Martin Trinh, April 15, 2023)	Martin Trinh	04/15/23				F		•		03/29/23
SC Action Items from 11/02/2022	Document the process for starting a new workgroup	Jay Davis	04/30/23	01/25/23	86	1	F		•	Will present initial outline at Jan SC meeting	11/02/22
SC Action Items from 01/25/23	Bring a suggested process for handling MMP proposals to the SC at the April meeting	Jay Davis	04/26/23				F	F	•		01/25/23
SC Action Items from 01/25/23	Prepare a proposal for WDM maintenance for review by the SPLWG	Tan Zi	05/01/23				F		•		01/25/23
TRC Action Items from 03/29/23	Send Charter and Multi-Year Plan to Jamie Yin	Jay Davis	05/15/23				F	7	•		03/29/23
TRC Action Items from 03/29/23	Do what we can to expedit the turnaround of the GE data (Amy Kleckner, June 30, 2023)	Amy Kleckner	06/30/23				F		•		03/29/23
TRC Action Items from 03/29/23	Schedule a meeting with Christina Toms to discuss possible coordination of RMP fixed station locations with the WRMP (Amy Kleckner, May 15, 2023)	Amy Kleckner	05/15/23				F	F	•		03/29/23
TRC Action Items from 03/29/23	Check with Marco Sigala on whether he can wait until the June TRC meeting for a final decision on margins sediment sampling locations (Amy Kleckner, April 30, 2023)	Amy Kleckner	04/30/23				F	F	•		03/29/23
TRC Action Items from 03/29/23	Either schedule a TRC call before the next meeting or have an agenda item at the next meeting to present a recommended design for approval (Amy Kleckner, June 20, 2023)	Amy Kleckner	06/20/23				F	F	•		03/29/23
TRC Action Items from 03/29/23	Check with Richard Looker on ending the intercomparison for the copper analysis (Don Yee, May 15, 2023)	Don Yee	05/15/23				F	F	•		03/29/23
TRC Action Items from 03/29/23	Reach out to CCSF to see if they could be the primary metals lab along with Brooks. If not, look into commercial labs such as CalTest (Don Yee, May 15, 2023)	Don Yee	05/15/23				F	F	•		03/29/23
TRC Action Items from 03/29/23	Jay talk to Warner about featuring RMP items in his emails (Jay Davis, May 15, 2023)	Jay Davis	05/15/23				F	F	•		03/29/23
TRC Action Items from 09/22/21	Gather small group for Bivalve design review	Jay Davis	12/31/23	01/31/22	445	3	F	F	•	Item is of low urgency. Will convene the small group this fall. Low urgency and Jay has limited capacity due to RMP management transition and WQIF	09/22/21
SC Action Items from 11/02/2022	Discuss event-based monitoring planning at the December 2023 TRC meeting and January 2024 meeting	Jay Davis	01/26/24				F	F	•		11/02/22