Table 2: Short Descriptions of Proposals for RMP Special Studies in 2025

Workgroup	Study Name	Budget	Summary	Deliverables
Emerging Contaminants	Stormwater CECs Monitoring and Modeling 2025	$300,000 - $450,000	This project will continue implementing the RMP stormwater CECs integrated monitoring and modeling program in water year 2025 (October 2024-September 2025). It builds on prior stormwater CECs RMP projects that have identified priority near-term management questions, identified the modeling and data analysis approach to address these management questions, developed and piloted the SFEI Mayfly remote sampler, and are currently framing out the RMP stormwater CECs monitoring design. These projects are collecting data and supporting the overallstormwater CECs monitoring program framework development through the RMP "Stormwater CECs Approach" project that is slated for completion in late 2024. This proposal includes a range of costs to prove the option to expand its scope should additional funds become available to the RMP from the EPA Program Office.	Task 1. Project management and coordination with non-RMP funding sources - Fall 2024 - Fall 2025 Task 2. Stakeholder and science advisor engagement —Informal stakeholder and advisor meetings - Fall 2024-Fall 2025 —One SST meeting - Summer-Fall 2025 —Three RMP presentations (ECWG/SPLWG, TRC and SC - Spring 2025 Task 3. CEC modeling and data analysis —Inform monitoring design - Summer 2025 —Draft Technical Report - October 31, 2025 —Final Technical Report - December 12, 2025 Task 4. Stormwater CECs work integrated scientific systems development and cross-task and cross-project team coordination - Fall 2024-Summer 2025 Task 5. Stormwater CECs monitoring —ECWG and SPLWG presentations - Spring 2025 —Presentation to and discussion with the SST - Summer-Fall 2025 —Data uploaded to CEDEN - December 2025 Task 6. Remote Sampler continued improvement —ECWG and SPLWG updates - Spring 2025 —Updated sampler design summary - December 2025 Task 7. Initiate site selection and permitting for water year 2026 - Summer 2025
Emerging Contaminants	Plastic Additives in Bay Water and Archived Sediment	$170,750 - $310,920	Plastic additives are an extensive group of chemicals used in the production of plastics. Many are ubiquitous in the environment and known to be toxic. The RMP has previously found organophosphate esters (OPEs) and bisphenols in the Bay and pathways, and is continuing monitoring a key subset of these contaminants via Status and Trends. Further monitoring already approved for 2024 will examine both of these classes along with multiple other plastic additive classes in wastewater. To build on these efforts, we propose a study to assess the concentrations of plastic additives in Bay water and (optionally) archived sediment to inform our understanding of the fate and effects of these contaminants in the Bay. Data developed as part of this proposed study would result in addition of multiple new plastic additive chemicals and classes to the RMP tiered risk-based framework for emerging contaminants.	Task 1. Develop Sampling Plan (Ship Archived Sediment) June 2025 Task 2. Field Sampling – Water (Dry Season) Summer 2025 Task 3. Field Sampling – Water (Wet Season) & Stormwater Fall 2025 to Spring 2026 Task 4. Laboratory Analysis October 2026 Task 5. QA/QC & Data Management February 2027 Task 6. Presentation at ECWG April 2027 Task 7. Draft Report June 2027 Task 8. Final Report August 2027
Emerging Contaminants	Quarternary Ammonium Compounds (QACs) in Bay Water and Stormwater	$111,000 - $174,000	Quaternary ammonium compounds (QACs) are widely used as antimicrobials and for other purposes in a variety of consumer products. The COVID-19 pandemic significantly increased use of products containing QACs, which likely increased release to the environment. Recent analysis of wastewater has found notable levels of QACs in influent, effluent, and biosolids with many of those commonly found in influent linked to disinfectant products. A smaller set of samples of sediment, Bay water, and stormwater have also exhibited the presence of QACs. Currently the limited number of measurements available result in classification of these contaminants as Possible Concern within the tiered risk-based framework. We propose a study to assess the concentrations of at least 20 QACs in Bay water and (optionally) stormwater to understand the transport, fate, and effects of these contaminants in the Bay. Data developed as part of this proposed study would be sufficient for more definitive placement of QACs within the tiered risk-based framework.	Task 1. Develop Sampling Plan June 2025 Task 2. Field Sampling – Water (Dry Season) Summer 2025 Task 3. Field Sampling – Water (Wet Season) & Stormwater Fall 2025 to Spring 2026 Task 4. Laboratory Analysis September 2026 Task 5. QA/QC & Data Management December 2026 Task 6. Presentation at ECWG April 2027 Task 7. Draft Report June 2027 Task 8. Final Report August 2027
Emerging Contaminants	Nontarget Analysis of San Francisco Bay Fish (Year 2)	$76,000	Contaminants in sport fish may have both human and wildlife health implications. The RMP has been monitoring selected contaminants in sport fish for many years but has never done any nontarget analysis of this matrix. This two-year study leverages 2024 Status and Trends sport fish monitoring to collect sport fish samples for nontarget analysis. Year 1, funded in 2024, included developing a sampling plan and sample collection. Year 2 will cover the laboratory and data analysis and reporting. This type of analysis will provide a means to identify unanticipated contaminants that may merit follow-up targeted monitoring. It will also allow comparison of San Francisco Bay fish contaminant profiles with those of fish from other locations such as the Great Lakes. Anticipated study outcomes would include priorities and recommendations for future investigations	Task 1. Work with S&T Sport Fish Strategy Team to develop sampling plan (funded) - Spring 2024 Task 2. Sample collection (funded) Summer 2024 Task 3. Lab and data analysis Spring 2025 – Spring 2026 Task 4. Presentation to ECWG and TRC April 2026 Task 5. Draft manuscript September 2026 Task 6. Final manuscript December 2026

Table 2: Short Descriptions of Proposals for RMP Special Studies in 2025

Workgroup	Study Name	Budget	Summary	Deliverables
Emerging Contaminants	Stormwater In Vitro Toxicity Screening	$26,000	In vitro bioassay monitoring of environmental samples can detect possible biological effects that may not be predictable solely from targeted chemical analyses of the same samples or traditional individual chemical risk screening methods. The USEPA Center for Computational Toxicology and Exposure (CCTE) and EPA Region 10 are piloting using a rainbow trout gill cell high-throughput assay to detect toxicity of stormwater samples and compare between different locations. This is an imaging-based means of cell phenotype profiling with fluorescent dyes to quantify cellular-level changes in responseto chemical exposure. This bioassay uses rainbow trout, which is both a common toxicity testing model and a Bay-relevant organism, to test for cytotoxicity and sub-cellular effects. We leveraged ongoing RMP stormwater sampling efforts during the water year 2024 wet season to collect a modest number of samples for pro bono extraction and analysis by CCTE. This project proposal covers Bay Area-specific data analysis and interpretation as well as coordination with EPA Region 10 and CCTE for data analysis and reporting. This project represents early implementation of an element of the RMP CEC strategy, namely strategic incorporation of novel toxicological methods to inform management.	Task 1. Sample collection and extraction - Winter 2024 (Complete; pro bono) Task 2. Coordination with EPA project Spring 2024 – Fall 2025 Task 3. Lab and data analysis Spring 2024 – Fall 2025 Task 4. Presentation to ECWG April 2026
Emerging Contaminants	Tire Rubber Marker Analysis for Tire Wear Particle Quantification	$105,000	Tire Wear Particles (TWPs) may be the biggest source of microplastics to the Bay, and are also a source of tire-related contaminants. Norwegian Institute for Water Research (NIVA) scientists have developed state of the art methods for quantifying tire wear particles using reference tire materials to estimate relationships between emissions of TWPs from different types of vehicles and tires with different marker content. While NIVA has developed a tire database for tires used in Norway, no such reference database has been published for California tires. Because tire rubber composition varies due to brand, car type, area weather, and intended use, creating a representative regional tire database is important for improving the accuracy of estimated tire wear concentrations in environmental samples. This proposal would analyze tire tread rubber from a representative set of new tires for the Bay Area. NIVA will analyze samples using pyrolysis GC-MS to quantify various tire markers to develop a reference database. Results will be publicly shared through a peer-reviewed manuscript led by NIVA, and integrated into future RMP and SFEI reports. Overall, developing a robust database is critical for quantifying tire wear particles in the region and state.	Task 1. Develop study design March 2025 Task 2. Collect tire rubber samples September 2025 Task 3. Laboratory Analysis February 2026 Task 4. Data analysis, interpretation, and reporting June 2026
Emerging Contaminants	PFAS NMR Analysis in Wastewater, Stormwater, and Bay Matrices	$125,000	PFAS are ubiquitous in Bay matrices and considered a High Concern in the RMP tiered risk-based framework. Most Bay studies to date have focused on targeted analytical methods analyzing up to 40 individual PFAS, which does not adequately capture the overall presence of PFAS in the environment. Preliminary application of broader methods has illustrated the significant presence of unknown PFAS in Bay matrices. A new approach uses Fluorine-19 nuclear magnetic resonance (19F NMR) spectroscopy to more broadly detect and quantify fluorine-containing compounds, including PFAS. This method provides information on the relative presence of different fluorinated functional groups, which provides insight as to the dominant types of PFAS and other fluorinated compounds present. We propose applying this new 19F NMR method to wastewater and stormwater samples that will be undergoing analysis with multiple PFAS methods as part of RMP and USEPA-funded work. Complementary analysis will allow broader insights as to the utility of 19F NMR. Limited analysis of available extracts of other Bay matrices (sediment, bird eggs, sport fish, marine mammals) is included. Overall, this proposed project would supplement current and future PFAS work to better characterize the presence, transport, and fate of fluorochemicals in the Bay.	Task 1. Develop Study and Sampling Plan March 2025 Task 2. Ship Available Extracts (EPA 1633) & Archived Samples April 2025 Task 3. Laboratory Analysis and Reporting (Bay Matrices); Decision on request to proceed with year two - July 2025 Task 4. Field Sampling - Stormwater Fall-Spring 2026 Task 5. Field Sampling - Wastewater Spring-Summer 2026 Task 6. Ship Available Sample Extracts (EPA 1633; WW & SW) Summer-Fall 2026 Task 7. Laboratory Analysis (WW & SW) December 2026 Task 8. Presentation to ECWG Meeting April 2027 Task 9. Draft Manuscript May 2027 Task 10. Final Manuscript for submission June 2027
Emerging Contaminants	Nontarget and Target Analysis of Fibers and Urban Stormwater	$123,700	Synthetic apparel and textiles represent a large and growing source of chemical and microplastic fiber contamination globally. Microplastic fibers are the dominant form of microplastics observed in Bay matrices, and load estimates suggest urban stormwater runoff to be the dominant transport pathway. Fibers may pose ecotoxicity concerns linked to their physical form as well as to the leaching of harmful chemical additives and transformation products. The RMP Emerging Contaminants and Microplastics Workgroups jointly propose to conduct nontarget analysis and target PFAS analysis on textile fibers and urban stormwater runoff to identify textile-related contaminants that have the potential to impact Bay water quality. This study would leverage an independent ongoing study led by SFEI to investigate whether tumble air-dryers are an important source of microplastic fibers to the Bay. Nontarget analysis can indicate the presence of plastic additives in fibers released to the environment, and statistical chemical fingerprinting techniques can be used to explore linkages between fibers and urban stormwater runoff. Observations may point to chemicals that have been overlooked in previous targeted monitoring in stormwater samples and merit quantitative analysis.	Task 1. Develop sampling plan November 2024 Task 2. Stormwater sample collection November - March 2024 Task 3. Lab analysis June 2025 Task 4. Computational analysis and interpretation September 2025 Task 5. Draft Report March 2026 Task 6. Presentation at ECWG April 2026 Task 7. Final Report June 2026

Table 2: Short Descriptions of Proposals for RMP Special Studies in 2025

Workgroup	Study Name	Budget	Summary	Deliverables
Emerging Contaminants	PFAS Rainwater (Wet Deposition Pathway) Community Science: Phase 1 Planning	$60,000	Recent stormwater analysis has highlighted its importance as a pathway for PFAS discharge to the Bay with levels of individual PFAS similar to those found in wastewater. Wet deposition (i.e., rainwater) itself has been shown to contain PFAS at levels above US EPA drinking water health advisories, even in remote areas across the globe. At present, we lack local data on PFAS in precipitation that would allow us to draw conclusions about the overall importance of this pathway relative to outdoor PFAS sources distributed within the surrounding watershed. We propose investigating the presence of PFAS in rainwater in the Bay Area to establish baseline background data, elucidate its potential influence on stormwater concentrations, allow estimation of direct wet deposition to the Bay, and understand the community impacts of rainwater contamination. To evaluate a wide swath of the Bay Area, this study would incorporate citizen science to robustly monitor wet deposition including directly working together with SFEI staff and Bay communities (and their members) to establish 10 to 20 simple rainwater collection stations for use across three storms. Both targeted methods and total oxidizable precursor (TOP) assay will be used for PFAS analysis for comparison to stormwater with the potential to include additional methods such as analysis of ultra-short-chain PFAS. The study and sampling plan, including training and outreach materials, will be co-developed with participating community organizations with a budget for their engagement and sampling efforts. In addition to typical deliverables (i.e., report), this project would involve community outreach efforts to share the results such as a “town hall” style meeting presenting the results of the report and development of a concise fact sheet. Overall, this proposed project would supplement current and future PFAS work while building our efforts to integrate and collaborate with local Bay communities on science that impacts us all.	Task 1. Outreach, Develop Study and Sampling Plan (co-developed with community organizations) August 2025 Phase Two: If funding to implement the plan is obtained Task 2. Field Sampling - Rainwater Fall 2025-Spring 2026 Task 3. Laboratory Analysis June 2026 Task 4. QA/QC and Data Management September 2026 Task 5. Draft Report and Community Outreach December 2026 Task 6. Final Report and Community Outreach March 2027 Task 7. Presentation to ECWG April 2027
Emerging Contaminants	PFAS Analysis Add-On to Stormwater Depth Monitoring Pilot	$55,000	A funded Microplastic Workgroup pilot study will collect urban stormwater samples in two locations during a storm event. Simultaneous samples will be collected at 3 different depths (surface, mid-depth, near-bottom) in the deepest part of the channel to test the hypothesis that the channel is sufficiently well-mixed to reasonably conduct single-depth sampling in most Bay Area channels. The proposed study would leverage this stormwater sample collection effort by collecting additional stormwater samples for PFAS analysis to provide an initial dataset to evaluate whether single-depth stormwater sampling is supported by field measurements. The RMP’s stormwater monitoring program is developing automated remote samplers that would likely be sampling for PFAS at a single depth during the storm. Considering the RMP investments in PFAS stormwater monitoring, this would be a small pilot study to evaluate the representativeness of stormwater sampling approaches. Results will be reported with the report deliverable for the MPWG stormwater pilot study.	Task 1. Collect PFAS stormwater samples March 2025 Task 2. Laboratory Analysis August 2025 Task 3. Data management and QA/QC December 2025 Task 4. Data analysis and reporting February 2025
Emerging Contaminants	Nontarget Analysis Add-On to Stormwater 2025 Monitoring	$36,000		Task 1. Collect NTA stormwater samples April 2025 Task 2. Laboratory analysis July 2025 Task 3. Reporting of contaminants detected, lessons learned September 2025
	Total	**$1,188,450 - $1,541,620**		
Microplastic	Microplastics Stormwater Monitoring Pilot (Year 2 of 2)	$106,200	In 2019, the San Francisco Bay Microplastics Project identified urban stormwater runoff as the major pathway for microplastics entering the Bay. More recent investigations on the sources and pathways of microplastics revealed that tire-wear particles and other smaller microplastics were under-counted in previous investigations due to collection and analytical methods. In addition, while depth-integrated sampling was prioritized for the 2019 study to better characterize microplastics in the full water column, this approach requires considerable labor resources relative to stormwater samples collected using unmanned, automated sample collection at a single depth, which is a more likely sampling scenario for any kind of automated sampling program. This proposed pilot field study will take pilot steps to evaluate whether single-depth sampling within the water channel is adequately comparable to depth-integrated sampling during storm flow conditions in the channel. Specifically, we will take simultaneous single-depth samples at three different depths (surface, mid-depth, near-bottom) at two field sites at five times during one storm each and compare the microplastics content of these samples using advanced laboratory techniques that characterize tire wear and other fine particles. Funding for this special study proposal was split over 2 years, and this proposal is for the remaining portion of funds needed to	Task 1. Develop study design and approach June 2024 Task 2. Site selection and field reconnaissance August 2024 Task 3. Sample collection completed and shipped to laboratories March 2025 Task 4. Laboratory analysis completed and reported to SFEI September 2025 Task 5. Draft technical report January 2026 Task 6. Final technical report February 2026
Microplastic	Microplastics in San Francisco Bay Sport Fish	$130,000	Plastic additives are an extensive group of chemicals used in the production of plastics. Many are ubiquitous in the environment and known to be toxic. The RMP has previously found organophosphate esters (OPEs) and bisphenols in the Bay and pathways, and is continuing monitoring a key subset of these contaminants via Status and Trends. Further monitoring already approved for 2024 will examine both of these classes along with multiple other plastic additive classes in wastewater. To build on these efforts, we propose a study to assess the concentrations of plastic additives in Bay water and (optionally) archived sediment to inform our understanding of the fate and effects of these contaminants in the Bay. Data developed as part of this proposed study would result in addition of multiple new plastic additive chemicals and classes to the RMP tiered risk-based framework for emerging contaminants.	Task 1. Laboratory analysis September 2025 Task 2. Draft manuscript January 2026
	Total	**$236,200**		
Nutrients	Moored sensor high-frequency observation network	$250,000	Bay-wide cruises have been critical to our understanding of the system. The Bay is spatially and temporally heterogeneous, however, and monthly measurements miss changes in water quality that are driven by short time scale processes, including tidal forcing, wind, and biological cycles. The eight sensors in the moored, high-frequency observation network in South Bay collect water quality data every 15 minutes and contribute to our understanding of Bay processes that affect nutrient and chlorophyll dynamics.	Sensor maintainace; data management

Table 2: Short Descriptions of Proposals for RMP Special Studies in 2025

Workgroup	Study Name	Budget	Summary	Deliverables
	Total	**$250,000**		
Sediment	Develop a study plan to improve characterization of bed sediments and settling velocity to advance sediment transport modeling for San Francisco Bay	$106,900	We propose to develop a study plan to improve modeling of sediment transport in San Francisco Bay through a combination of data collection and modeling. The plan will address two topics: 1) characterizing bed sediment properties including erodibility; and 2) representing settling velocity of particles in suspension. This proposal responds to the need identified in the RMP Sediment Workgroup Sediment Modeling and Monitoring Workplan (SMMWP) for a literature review and detailed workplan to address these two topics. Sediment transport models require specification of parameters related to each of these topics, yet both are poorly constrained by field measurements and are characterized by complex physical processes which are difficult to measure and model. Because of these complexities, a study plan reviewing existing knowledge and proposing an approach for constraining these parameters will increase the likelihood for success in the RMP effort to improve sediment transport modeling in the Bay.	Convene technical workshop to inform the study plan (Task 2) - June 2025 Presentation to stakeholders through RMP SedWG (Task 3) - October 2025 Draft report presenting study plan for improving characterization of settling velocity and bed sediments to advance sediment transport modeling in San Francisco Bay (Task 4) - January 2026 Final report (Task 5) - March 1, 2026
Sediment	Shoreline Change in San Francisco Bay	$50,000	Understanding shoreline change is crucial for addressing sediment budgets at the local level and comprehending bayland dynamics at the embayment scale. This project aims to tackle pressing questions about which wetlands and mudflats are most vulnerable to loss due to sea level rise and how we can strategically manage these changes to achieve desired future states. Past efforts in San Pablo Bay (Beagle et al. 2015) have laid a solid foundation of methods for understanding shoreline dynamics and evaluating geomorphic change. This proposal seeks to build on that knowledge and provide foundational data to address priorities identified by the Sediment Workgroup, such as understanding sediment transport processes (MQ#3.3), assessing erosion or progradation of marsh edges (MQ#3.4), and evaluating changes in sediment budgets under varying climatic and land use conditions (MQ#3.5). By leveraging readily available data (NOAA) and utilizing improved automated techniques (Farris et al. 2019), this study will create a more comprehensive dataset covering the major rivers/bay-fronting shorelines of San Francisco Bay from 1850 to 2020, with an emphasis on shorelines of the past 15 years. Recognizing that different shoreline edge typologies (scarp, ramp, etc: Beagle et al. 2015) require unique mapping techniques for accurate change detection, we propose creating a vector dataset of the modern shoreline that classifies these marsh edge types. Key tasks will include compiling historical NOAA T-Sheet-derived shorelines (1850's-1980's), creating a shoreline typology dataset, deriving shorelines from recent aerial imagery using automated techniques, and completing a technical methods report. This work is envisioned as the initial phase in a broader collaborative effort with the Wetlands Regional Monitoring Program (WRMP) to understand and manage shoreline changes across the Bay. The methodologies developed and lessons learned will inform and improve future iterations of shoreline mapping. Each task will be coordinated with the WRMP technical advisory committee. The outcomes will provide crucial data to address the question: what have been the shoreline position changes over the past 150 years? Ultimately, the project will produce vector datasets showing major river/bay-fronting shorelines of the whole Bay encompassing the last 150 years, and a modern shoreline dataset classifying the type of shoreline edge to enable more accurate delineation and contextual analysis of shoreline variability.	1. Historical Shorelines Data Package Spring 2025 2. Shoreline Typology Data Package Summer 2025 3. Recent Past Shoreline Data Package Winter 2025 4. Technical Methods report submitted and presented to Sediment Workgroup Spring 2026
Sediment	Suspended Sediment Flux Measurements at Richmond-San Rafael Bridge, California	$15,000	This proposal is to expand upon an already funded project to collect cross-channel transects using an acoustic doppler current profiler (ADCP) to measure both velocity and acoustic backscatter (ABS) at Richmond-San Rafael Bridge cross-section (RIC) **in water year (WY) 2025.** We request further funds to install an additional continuous water-quality sensor at the RIC transect location to collect high-frequency data during the study period. The exact location and/or type of additional sensor is not yet determined, and preliminary transects are currently being done to decide what would be most useful. The sensor would be either 1) a turbidity sensor deployed at the western shoal or eastern channel at the bridge to be used as a surrogate for suspended-sediment concentration (SSC); or 2) an ADCP mounted at one of the bridge platforms. This additional sensor data will be used to help supplement the transect data, along with the existing real-time station at RIC (USGS station #375607122264701), to better understand how sediment flux varies temporally during the study period. The collection of this additional sediment data will supplement the transect data we will collect by adding an additional continuous data location to monitor cross-sectional variations between boat based ADCP measurements. This work will directly address SedWG modeling/monitoring question 3.2 which pertains to sediment flux at key Bay cross-sections. This budget includes the collection of additional data during the cross-channel transects in the form of surrogate optical turbidity to calculate SSC and/or ADCP velocity data. Preliminary transects will be completed in May 2024 to determine what equipment, location(s), and deployment methods are best to support transecting. Additional equipment used during study will be project owned and no new equipment will be required, but any equipment that is requested to stay on site long term will need to be funded for purchase.	Data release including all new project data including ADCP transects and velocity-integrated point-SSC samples - December 2025 Model archive summary detailing the ABS-SSC empirical model to convert ADCP transects to sediment flux measurements - December 2025 Presentation to RMP Sediment Workgroup - May 2026

Table 2: Short Descriptions of Proposals for RMP Special Studies in 2025

Workgroup	Study Name	Budget	Summary	Deliverables
Sediment	Refining the Conceptual Understanding of Sediment Transport in San Pablo Bay	$65,000	McKnight et al. (2023) recently completed a conceptual model of fine sediment (i.e., sediment silt-sized and smaller) for San Francisco Bay. The report offered a high-level understanding of how fine-grained sediment moves at different scales within the Bay. This effort concluded with a set of key knowledge gaps and uncertainties. Among these was a recommendation to refine our understanding of the dynamic processes (e.g., between marshes and mudflats, changes in the erodible sediment pool) in individual subembayments. This proposed effort is intended to be coupled with ongoing work through Destination Clean Bay, an EPA-funded effort that focuses on developing support tools for supporting multi-benefit water quality improvements, including funds to identify high priority data collection and data gaps for regional model development. Analysis through Destination Clean Bay will focus on updates to the fine-grained conceptual understanding of San Francisco Bay (McKnight et al. 2023). With this proposal, we focus on refining the conceptual understanding of two specific elements within the San Pablo Bay subembayment: compiling an updated evaluation of local tributary sediment loads within the subembayment and developing a deeper understanding of the tributary-marsh-erodible sediment pool pathway. The results of the proposed study are intended to act as a framework for understanding the Bay's subembayments at a more refined and deeper scale.	Progress Presentation at the annual Sediment Workgroup Meeting - May 2025 Draft Technical report submitted to SedWG - April 2026 Presentation to SedWG - May 2026 Financial technical report completed - August 2026
Sediment	Sediment Dynamics in a Fluvially Influenced Salt Marsh	$121,500	Salt marshes provide essential protection against storm impacts to coastal communities but are severely vulnerable to sea-level rise and other hazards. Determining their level of resilience is crucial to predicting their future evolution. Syntheses of measurements made in salt marshes over the past 20–30 years have produced metrics that indicate marsh health or vulnerability (Nowacki & Ganju 2019). Most of these metrics have been derived in microtidal marshes not subject to direct river inputs and without management interventions. Although these metrics are hypothesized to be universal across salt marshes, they have not yet been rigorously tested in fluvially influenced, restored marsh environments. Such research is aligned with the RMP's interest in the importance of local watersheds as a marsh sediment source. It also can inform the RMP Sediment Workgroup's monitoring/modeling science question 4.4 which addresses accretion rates and fluxes in marshes, mudflats, and shoals in relation to waves and localsediment supply. We propose to assess sediment fluxes in a mudflat–salt marsh environment adjacent to the Petaluma River known as Gray's Marsh which was recently restored through an unintentional breach. This proposal will leverage work at the proposed site already funded by the RMP in 2024 to assess the decadal-scale physical response of marshes to restoration. We will deploy instrumentation for two deployments of 2–3 months each during wet and dry seasons to measure waves, currents, suspended-sediment concentration, and suspended-sediment flux within the river and in channels of the mudflat–marsh platform. We will also measure mudflat and marsh sediment deposition along three transects following similar methods to the study by Lacy & Thorne funded by the RMP in 2021. We will collect topo-bathymetric elevation data to determine the tidal and seasonal physical and sedimentary dynamics of this system, which is both fluvially influenced and recently restored. We will also test sediment-provenance approaches to determine the originating watershed of the sediment accumulating in the marsh. By measuring sediment flux and accretion during the wet and dry seasons, we aim to determine the relative importance of fluvial- vs. Bay-derived sediment to long term rates of accretion in this restored marsh. This work will also contribute to our understanding of how sediment transport and accumulation in marshes are influenced by site-specific attributes such as fluvial influence, which will help inform future marsh restoration prioritization and methods.	Data release: salt-marsh and Petaluma River time-series data (PCMSC) - 9/2026 Data release: deposition and accretion (WERC) - 9/2026 Presentation to RMP and at selected conferences - 5/2027 Report (draft paper) investigating the dynamics of sediment exchange between the salt marsh and its fluvial source and sediment accretion on the mudflat and marsh submitted to RMP - 6/2027
	Total	**$358,400**		
Sources Pathways and Loading	Integrated Monitoring and Modeling to Support PCBs and Mercury Watershed Loads Uncertainties Assessment and Monitoring Design (Year 2 of 3)	$110,000	This proposal is for Year 2 of 2 for the integrated monitoring and modeling activities for PCBs and Hg. In this study, we propose to: continue the second year of a two-year monitoring study to support the PCBs and Hg loads estimation, estimate model uncertainties, determine model sensitivities to parameter and data weaknesses, and provide PCBs and Hg monitoring design recommendations. The outcomes are envisioned to also provide an improved structure as a starting point for monitoring and modeling any future contaminant of interest.	Wet season 2024 samples collected and sent for lab analysis (Year 1) 04/2024 Laboratory analysis, QA, & Data Management (Year 1) 09/2024 Presentations to the SPLWG meeting (Year 2) 05/2025 Draft Final Report (Year 2) 12/2025 Final Report (Year 3) 03/2026
Sources Pathways and Loading	Tidal Area Remote Sampler Pilot - Year 3	$15,000	This proposal is for $15,000 in additional funds to finish the Tidal Area Remote Sampler Pilot (SPLWG 2023 full proposal added as an appendix for reference). The goals of the previously funded two-year project were to complete development and pilot testing of a proven remote sampler design, and characterization of stormwater from eight old industrial areas influenced by tides. In addition to meeting these goals, the additional funds will allow us to resample one of the sites sampled last year where the sampler was vandalized and no sample was collected, as well as provide for an additional year of project management.	Pilot testing during rainy season 04/2025 Update presentation at SPLWG on the results to date 05/2025 Data upload to CEDEN 12/2025 Draft Report 1/2026 Final Report 3/2026

Table 2: Short Descriptions of Proposals for RMP Special Studies in 2025

Workgroup	Study Name	Budget	Summary	Deliverables
Sources Pathways and Loading	Stormwater CECs Modeling and Data Analysis	$39,000	Recently, SFEI recommended using the Regional Watershed Spreadsheet Model (RWSM) for estimating loads of contaminants of emerging concern (CEC). Additional funding will facilitate the expansion of the initial phase of this work under Task 3 of the Stormwater CECs Modeling and Modeling 2025 project. This endeavor will be coordinated with research on PFAS sources and solutions, with the anticipation of completing urban stormwater PFAS load estimates by 2028, followed by the identification of PFAS product categories contributing to San Francisco Bay contamination. The expanded funding will enable the development and assessment of new geospatial datasets to support stormwater CEC modeling, potentially including updates to RWSM. Results will be documented in the Stormwater CEC '25 project report, providing recommendations for future phases anticipated in 2026.	Expanded draft report Stormwater CEC modeling and data analysis October 2025 Expanded final report: Stormwater CEC modeling and data analysis December 2025
Sources Pathways and Loading	GIS Improvements to Support Modeling, Data Interpretation, and Site Selection	$40,000	This special study provides for the collection and processing of geographic datasets to support improved monitoring and modeling across Bay watersheds. We foresee two tasks: Task 1: Staff will work with local municipal separate storm sewer systems (MS4s) to obtain updated maps of urban drainage systems to then create a workplan for updating regional watershed maps based on these data. The eventual uses for such data by the RMP are for: 1) updated base maps for the Watershed Dynamic Model (WDM) and Regional Watershed Spreadsheet Model (RWSM), 2) monitoring site selection, and 3) understanding pollutant sources. Task 2: Development of the WDM has been hindered by the lack of consistently updated land use/land cover data. We currently rely on snapshots of urban land use published by the Metropolitan Transportation Commission (MTC) in 2005 and 2020. Better representation of land use and how it changes over time will allow for more realistic estimates of runoff, sediment, and pollutant loading. A variety of new data products are available from both government and commercial vendors. Many of these new datasets make use of satellite remote sensing and artificial intelligence. The outcomes of this task would be 1. a survey of the current landscape of options, 2. a pilot analysis of sample datasets, 3. a recommendation of suitability of newer datasets for RMP uses, and 4. a workplan and budget for any future work identified.	Presentation to SPLWG May 2026 Detailed workplan for future GIS data acquisition and/or development* may be included in the forthcoming 2025 Stormwater CEC modeling and data analysis report and/or Watershed Dynamic Modeling (WDM) report. - May 2026
Sources Pathways and Loading	Stormwater Systems Management and Equipment Upgrades	$80,000	This project is to update the systems and equipment that underlie the stormwater monitoring program, which have not kept pace with the growing stormwater monitoring needs of the RMP. There are multiple areas in which greater efficiency is needed to continue expanding the program and delivering the highest quality data in the most efficient way. Key areas that immediately need to be addressed include: Automation and streamlining sampling processes and sampling-related documentation, including preparation processes, in-field collection and data logging processes, and post-storm shipping, logging, and data management systems; development of a “go/no go” decision tree, both for manual and automated sampler deployments; improving our monitoring sites database, and systems for efficiently logging information about site reconnaissance, site visits, sampler deployments, etc.; expanded team training to build labor capacity; purchasing flow monitoring equipment; and labor time to contact other major sampling programs to identify best systems processes and the latest monitoring method technologies.	Discussions with other sampling programs, expanded team trainings, decision tree process developed, sampling and shipping SOPs revised, data management systems weaknesses identified - December 2024 SPLWG presentation update - May 2025 Sites database improvements, data management systems weaknesses/inefficiencies improved - August 2025 Ongoing identification and implementation of systems and equipment upgrades as funding allows - December 2025
Sources Pathways and Loading	Develop Discharge Rating Curves at County-Operated Stage Monitoring Stations	$30,000	Streamflow or discharge is critically important for evaluating the fate and transport of aquatic pollutants. It is also vital for the calibration and verification of watershed models, which are currently at the heart of the RMP strategy for evaluating loads of sediment, legacy pollutants such as PCBs and mercury, and emerging contaminants. The Regional Watershed Spreadsheet model (RWSM) and the Watershed Dynamic Model (WDM) are both calibrated using flow observations mostly from USGS gages, however, there are large gaps in coverage for San Mateo, Contra Costa, Marin, and Solano Counties (Figure 1). Cities, counties, water suppliers, and flood control districts operate a number of “stage-only” gauges, collecting continuous observations of water-surface elevation. This information can be used to estimate discharge (in m^3/s or cubic feet per second, cfs) by creating a relationship (called a rating curve) between recorded stage and discharge based on measurements over a wide range of flow conditions to minimize extrapolation errors. This project is to develop rating curves at select stage-only locations that fill the biggest gaps in existing coverage. Budget is included to select sites with workgroup oversight, collaborate with partners, obtain permits, perform flow measurements, QAQC and publish the flow data.	Presentation to the SPL workgroup May 2026 Detailed workplan for future rating curve development May 2026
Sources Pathways and Loading	Add-on to Stormwater Contaminants of Emerging Concern (CECs) Monitoring and Modeling 2025 Project to Include Additional Non-CECs Analytes	$50,000	The Stormwater Contaminants of Emerging Concern Monitoring and Modeling 2025 (Stormwater CECs ‘25) proposed project includes CEC sampling using three different sample collection methods. For two of the methods (using a larger full-sized remote sampler and manual sampling), it is possible to collect extra bottles for additional analytes and this proposal is to provide funding for that purpose. Two goals underlie the proposed additional analyte collection: 1) to opportunistically obtain stormwater monitoring data about other pollutants of concern in the Bay, and 2) to inform CECs monitoring data interpretation, such as examining whether observed variability in CECs levels is consistent with our understanding of the variability of other constituents in urban runoff. Several additional analytes could meet these two goals. In addition to ranking this proposal against the other Tier 2 proposals, we are requesting the SPLWG recommend a budget allocation and prioritization of the proposed analytes.	Stormwater Additional Non-CECs Analytes monitoring Spring 2025 Data uploaded to CEDEN December 2025
	Total	**$364,000**		

Table 2: Short Descriptions of Proposals for RMP Special Studies in 2025

Workgroup	Study Name	Budget	Summary	Deliverables
PCBs	San Leandro Bay OPTICS Study	$600,000	Up to 6 locations in SLB will be monitored by OPTICS instrumentation. Around ~20 water samples per location are desired in order to establish a robust correlation between the parameters measured by the in situ instrumentation (none of them measuring COCs directly) and concentrations obtained from lab analysis of collected water grab samples. Samples will be collected for two or more precipitation events as close as practicable to the OPTICS monitoring points (same depth and position in channel cross section) without disturbing or damaging the instrumentation. Samples for the 6 locations will be collected for the same events, but may not be strictly synoptic as likely only one field crew is available for each event, and transiting between stations, setup, and collection will take about one half hour per location per sample collected. Within each event at each location, an attempt will be made to collect at least one sample on the rising or peak stage, and one on a falling stage (2 grabs each from 6 locations will take ~6 hours). For events lasting longer than 6 hours, collection of a third sample may be possible. Each event will thus yield 12-18 samples. At least one collection effort will be made during a period of no precipitation, to capture flux primarily due to tidal flows only. At the desired level of effort (~100 samples), at least 4 wet weather events and one or more dry period in the spring-neap tidal cycle can be collected. The budget table below assumes that grab samples can be collected from shorelines, bridges, or overhangs near the OPTICS sensors, without requiring a vessel. Deployment of the instrumentation far away from such structures would require use of a vessel and additional budget. The products will be a short technical report and the reported data in SFEI's regional database and uploaded to CEDEN.	Task 1. Coordinate with Integral on OPTICS siting Sep 2024 Task 2. Obtain permits/permissions Oct 2024 Task 3. Field collections Dec 2024 -Mar 2025 Task 4. Lab analysis Jan-May 2025 Task 5. PCBWG presentation, draft and final technical report May-Jul 2025
PCBs	Mapping Mudflat Morphodynamics	$25,000	We therefore propose purchasing satellite imagery from another source such as Planet with finer (3-5m) lateral resolution, and adapting the DEA methods for using this alternative image source. LIDAR surveys were conducted over different portions of SLB in 2019 and 2021, so surface elevations can be derived for the different areas from imagery ending in these two years, to compare the agreement between LIDAR and imagery methods. In the future, estimates of the intertidal sediment surface can be repeated at 5 to 10 year intervals to characterize the change and validate models of sediment fate in areas of particular interest such as SLB. The approach could also be applied to assess change in areas near wetland restoration, or the basic DEA approach using Landsat/Sentinel applied to the	Task 1. Develop Study Plan with stakeholders and modelers Jan-Feb 2025 Task 2. Purchase imagery Feb 2025 Task 3. Conduct analysis Mar-Apr 2025 Task 4. Review draft maps with stakeholders & modelers May 2025 Task 5. Final elevation maps & draft technical report May-June 2025 Task 6. PCBWG presentation, final technical report May-Jul 2025
PCBs	Sediment Trap Reconnaissance	$22,000	In studies conducted in collaboration with the Luthy group in San Leandro Bay and Steinberger Slough/Redwood Creek, passive screened-jar sediment traps were deployed alongside the polyethylene film passive sampling devices (PSDs). At high flow sites where the buried PSD plates placed in the channel center were dislodged, the jar traps were similarly dislodged. However, at the remaining sites, where PSDs were placed along the channel edge or in generally lower energy flow, the sediment traps successfully collected settled sediment. These simple sediment traps are easily constructed (glass jars with screened lids), inexpensive, and unobtrusive. Multiple traps can easily be placed along a reach of a creek or stormwater channel and analyzed separately or composited. Collected samples with low total solids can be analyzed as water samples, and those with high solids (>10g) can be treated as sediment samples. Thus reconnaissance samples of this type can easily be added into groups of samples analyzed for other projects in the same matrix. Aside from analysis costs, the primary costs of this effort would be deployment and retrieval of the sediment traps (likely <1 hour per site), and obtaining permission or permits for deployment. Based on the long timelines and occasionally expensive permits requested for permission to deploy the SFEI autosamplers, a majority of sites may end up being placed along the Bay edge at the ends of creeks; although the resultant samples will have a strong signal of tidal resuspension and redistribution, local gradients of high concentration pathways are likely still evident (as was found in SLB). Currently 10 sites are proposed, but the number could be easily scaled up. Results would be reported to the workgroup and interested stakeholders in the form of a short technical report.	Task 1. Develop Study Plan with stakeholders and modelers Jan-Feb 2025 Task 2. Purchase imagery Feb 2025 Task 3. Conduct analysis Mar-Apr 2025 Task 4. Review draft maps with stakeholders & modelers May 2025 Task 5. Final elevation maps & draft technical report May-June 2025 Task 6. PCBWG presentation, final technical report May-Jul 2025
	Total	**$647,000**		