

Demolishing PCBs at the Source, a Bay Area Partnership
BASMAA SFBWQIF Proposal Narrative (05-27-16)

Project Title:	Demolishing PCBs at the Source, a Bay Area Partnership
Applicant:	Bay Area Stormwater Management Agencies Association (BASMAA) Project Manager: Geoff Brosseau (BASMAA Executive Director) P.O. Box 2385, Menlo Park, CA 94026, (650) 365-8678, info@basmaa.org
Funding Requested:	\$800,000
Total Project Cost:	\$1.6 Million (\$800,000 Non-Federal Match)
Project Period:	Three Years (January 2017 – December 2019)

ABSTRACT

The overarching objective of the water quality improvement project *Demolishing PCBs at the Source, a Bay Area Partnership* is to implement priority actions called for by the San Francisco Bay PCBs and mercury Total Maximum Daily Load (TMDL) programs and thereby help address significant impairments to the Bay’s beneficial uses. An important emphasis will be to stop PCBs at the source, *i.e.*, before they enter stormwater runoff. The proposed project will assist Municipal Regional Permit (MRP) Permittees with developing and implementing a framework for managing PCBs in building materials during building demolition and PCBs in infrastructure caulk and sealants during infrastructure improvement projects. The project will monitor and report the effectiveness of specific management actions in reducing PCBs and mercury in stormwater runoff for which there are significant data gaps. The results will be reported in a format that is useable for control measure planning and load reduction accounting. Finally, the project will support the development of a regional framework and guidance for conducting reasonable assurance analysis for green infrastructure (GI) and other PCB and mercury control measures; a Model Implementation Plan and guidance for the Permittees to use in preparing a plan and schedule to achieve TMDL wasteload allocations; and a MRP-wide Implementation Plan that summarizes the full suite of actions that will be needed to achieve the TMDLs (region-wide) and the associated schedule and costs.

WATER QUALITY IMPROVEMENT AND PLAN CONSISTENCY

San Francisco Bay is one of the largest and most biologically diverse estuaries on the west coast of the United States. The Bay Area basin is world renowned for its scenic beauty, commercial and industrial enterprises, recreational opportunities, fisheries, and wildlife habitat. All of these features are vital to the health and economies of the local communities, where more than seven million people live and work in the highly developed watersheds that surround the Bay. The water quality of this precious resource is inextricably linked to historical and current human activities in these urban watersheds. Urban stormwater runoff is of particular concern as it conveys many types of pollutants from the urban landscape to the Bay.

PCBs, mercury, and other sediment-bound pollutants are found in San Francisco Bay water, sediments, and biota. Concentrations of PCBs and mercury in certain Bay fish exceed target levels and may pose a health risk to people who consume fish caught in the Bay. As a result, the California Office of Environmental Health Hazard Assessment issued an advisory on the consumption of fish from the Bay. Thus it was established that a vital beneficial use of the Bay, commercial and sport fishing, is not attained, with local subsistence fishers and their families being particularly vulnerable. This led to the Bay being designated an impaired water body on the Clean Water Act "303(d) list" due to PCBs and mercury. In response, the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) developed comprehensive TMDL programs to identify and control sources of PCBs and mercury to the Bay and restore water quality.

Demolishing PCBs at the Source, a Bay Area Partnership
 BASMAA SFBWQIF Proposal Narrative (05-27-16)

The Bay Area Stormwater Management Agencies Association (BASMAA), a 501(c)(3) non-profit organization representing 100 Bay Area cities, counties, and flood control districts, focuses on a number of regional challenges related to stormwater runoff, including identifying opportunities to improve the quality of urban runoff that flows to the Bay. The water quality link between the Bay and its surrounding watersheds inspired BASMAA to propose the *Demolishing PCBs at the Source, a Bay Area Partnership* project. This project will lead to PCBs and mercury TMDL implementation actions in portions of Alameda, Contra Costa, San Mateo, Santa Clara, and Solano Counties, impacting the majority of the watersheds draining to the Bay (see attached Figure 1). The ultimate, long-term outcome of these actions will be to achieve the 14.4 kilograms per year (kg/yr) PCBs load reductions and 62.1 kg/yr total mercury load reductions required from the MRP Permittees.

The proposed project supports United States Environmental Protection Agency (USEPA) Strategic Plan Goal 2 (Clean and Safe Water), Objective 2.2 (Protect Water Quality), and Sub-Objective 2.2.1 (Improve Water Quality on a Watershed Basis) by reducing loads of PCBs, mercury, and other sediment-bound pollutants (e.g., dioxins, PBDEs, chlorinated pesticides and PAHs) to the Bay from urban watersheds, in turn reducing levels entering the estuary food chain, and thereby reducing harm to aquatic ecosystems and human communities.

The proposed project's general strategy is also consistent with the San Francisco Bay (Region 2) Water Quality Control Plan (Basin Plan), the Bay Area Integrated Regional Water Management Plan, and the San Francisco Estuary Project (SFEP) Comprehensive Conservation and Management Plan (CCMP) objectives and actions summarized in Table 1 below.

Table 1: SFEP CCMP Objectives and Actions

Objective	Action
PO-2: Improve regulatory systems for point/non-point source control	PO-2.4: Urban runoff management update
PO-3: Remediate pollution threats to public health and wildlife	PO-3.1: Cleanup of contaminated sites, new priorities PO-3.2: Expedite cleanup of contaminated sites, improve processes
LU-1: Improve planning, regulatory, and development programs of local, regional, and state agencies to protect resources of the Estuary	LU-1.5: Promote stormwater BMPs and guidelines for site planning LU-1.6: Educate and train planners, public works departments, and builders on sustainable design and building practices

SCOPE / APPROACH

The *Demolishing PCBs at the Source, a Bay Area Partnership* project will focus on assisting the MRP Permittees with implementing the following four high priority MRP¹ provisions pivotal to the success of PCBs and mercury TMDL programs:

- C.12.f. Manage PCB-Containing Materials and Wastes During Building Demolition Activities So That PCBs Do Not Enter Municipal Storm Drains,
- C.12.e. Evaluate PCBs Presence in Caulks/Sealants Used in Storm Drain or Roadway Infrastructure in Public Rights-of-Way,
- C.8.f. Pollutants of Concern (POC) Monitoring, related to management action effectiveness evaluation, and

¹ Municipal Regional Stormwater NPDES Permit (Order No. R2-2015-0049; NPDES Permit No. CAS612008) adopted November 19, 2015.

- C.11.d/C.12.d. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations.

The purpose of these permit provisions is to implement the urban runoff requirements of the San Francisco Bay PCBs and mercury TMDLs and to reduce PCBs and mercury loads to make substantial progress toward achieving the urban runoff PCBs wasteload allocations established in the TMDLs. In order to make substantial progress, Permittees must conduct thoughtful planning for the future, while enhancing existing programs and beginning to implement new programs during this permit term. This project, which would be conducted over the next three years, will enable the Permittees to make better-informed decisions that will lead to more aggressive implementation of control measures on multiple fronts during the latter portion of the current permit term and during future permit terms.

Demolishing PCBs at the Source, a Bay Area Partnership includes five major tasks, outlined below.

Task 1. Management, Oversight and Coordination.

This task includes managing the grant, coordinating a Project Management Team (PMT), grant administration and reporting, formation and coordination of a Technical Advisory Committee (TAC), preparation of an overall project Quality Assurance Project Plan (QAPP), and outreach/transfer of lessons learned and outputs created via the project.

BASMAA will serve as the project's prime contractor. On behalf of the BASMAA Board of Directors, the Project Manager will be Geoff Brosseau, BASMAA's Executive Director. He will be responsible for overall project management and all fiscal activities related to agreements with USEPA and sub-contractors. Mr. Brosseau will be assisted by an Assistant Project Manager/Technical Lead (to be selected via a competitive process) and a PMT consisting of representatives from five BASMAA agencies (i.e., stormwater management programs): Jon Konnan (SMCWPPP), Chris Sommers (SCVURPPP), Arleen Feng (ACCWP), Lucile Paquette (CCCWP), and Kevin Cullen (FSURMP) or their designated successors. The PMT will help to ensure that all project activities are completed on-time and within budget by having specific responsibilities for oversight of project activities within the jurisdiction of the BASMAA agency that they represent. BASMAA will consult with USEPA and contract with project consultants to conduct the scope of work. In addition, the PMT will coordinate project activities within their respective countywide program areas, communicate with the Regional Water Board, and prepare quarterly progress reports and a draft and final project report.

At the outset of the project, BASMAA will convene a TAC. The TAC will be tasked with providing the project (in particular Tasks 2 and 3) with technical guidance and oversight, including key input on all major decision points and reviewing and commenting on drafts of all project deliverables. The TAC will be comprised of a Regional Water Board representative, USEPA Region 9 representative, and appropriate technical experts from the Bay Area and elsewhere in the United States.

During the first quarter of year one of the project (see Table 2 below), a QAPP addressing the field monitoring in the below tasks will be developed and submitted to USEPA for approval. All specified field and laboratory sampling and Quality Assurance/Quality Control (QA/QC) protocols, data management methods, and reporting procedures will be compatible with the California Surface Water Ambient Monitoring Program (SWAMP) and the San Francisco Estuary Regional Monitoring Program (RMP).

Overall project outreach and technical transfer will be conducted through the BASMAA website, workshops, and/or conference presentations.

Task 2. PCBs Building Material Management Implementation Framework

This task will develop an implementation framework, guidance materials, and tools for local agencies to ensure that PCBs-containing materials and wastes are properly managed during building demolition. This task will also include developing training materials and conducting trainings for municipal staff and outreach workshops for the industry on implementing the framework/protocols developed via the project. The tools and materials developed as part of this task will build upon materials and outputs developed in 2010-2011 by SFEP with State Water Board grant funding, called the “PCBs in Caulk Project”, as well as subsequent and parallel activities by BASMAA.

This task will consist of the following sub-tasks:

1. Communication and Coordination. Develop a method to communicate with stakeholders (industry, regulatory, municipal) and share documents and information within the work team and with the public as products are finalized, such as a web-based portal. The portal will have secure limited access areas for sharing draft and interim documents and a public area for final work products and related information. The long term portal will provide a centralized location for information on PCBs in building materials for municipalities, industry representatives, and the public.
2. Model Framework and Protocol.
 - a. Assemble and Review Existing Information and Update Regulatory Drivers and Requirements. Review the existing available project-related materials and identify changes and new information that need to be factored into the current project, in particular, changes generated by the expansion from caulk to all PCBs-containing building materials (e.g., paint and coatings).
 - b. Guidance Information on Assessment and Abatement. Develop materials and information for industry representatives, contractors, and project proponents to use when identifying and abating PCBs in qualifying buildings during demolition, including assessment of buildings for PCBs-containing materials, as appropriate. Consider any connections with recycling and solid waste management program implementation for demolition sites. Draft a model PCBs in Building Material Clean-Up Plan Template for typical urban redevelopment to standardize the approach to developing clean-up plans and to streamline regulatory oversight of the plans. Coordinate with USEPA on content and acceptability of the proposed guidance materials and template.
 - c. Model Ordinance. Draft an updated model municipal ordinance for managing PCBs during building demolition. Provide recommendations to address CEQA requirements.
 - d. Supplemental Demolition Permit Application Materials. Develop a template for a municipal PCBs building materials review process to accompany a demolition permit application. Develop the analysis required for the establishment of a permit fee schedule by municipalities for the costs and work associated with reviewing demolition permits projects involving PCBs in building materials.
 - e. Tracking and Effectiveness Evaluation. In accordance with Provision C.12.f of the MRP, develop an assessment methodology and data collection program to evaluate the implementation of the protocol for controlling PCBs during building demolition and

quantify PCBs loads reduced through implementation of the protocol. Develop tools to document and compile essential information such as the number, type and location of buildings addressed by the protocol, building materials characterized, BMPs implemented, and associated PCBs loads avoided. Develop standardized electronic format for submittal of data collected by project proponents, as needed.

3. Training and Outreach. Develop a training strategy and municipal staff training materials. Develop and present a municipal training staff workshop(s). Develop outreach materials and a standard presentation to inform industry stakeholders including demolition firms, property owners, property managers, and realtors regarding the PCBs controls and provide outreach presentations at designated industry meetings, workshops, or seminars. Upload all final materials to the project website/portal.

Task 3. PCBs in Infrastructure Investigation and Management Guidance

This task will focus on assisting Permittees with characterizing the extent and magnitude of PCBs in public infrastructure and quantifying the potential load reduction that may result from public infrastructure improvement projects (such as parking garages, bridges, dams, storm drain pipes, and street improvements). MRP Provision C.12.e requires that Permittees collect samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement and investigate whether PCBs are present in such material and in what concentrations. PCBs are most likely present in material applied during the 1970s, so the focus of the investigations will be on structures installed during this era. For example, in the course of screening a larger watershed for PCBs sources, the City of Tacoma discovered that PCBs-containing caulk (sealant) was used inside storm drains in a local catchment during a 1970s repair. There is reason to believe that such use was not isolated to this one type of infrastructure; for example, the City of Walnut Creek recently found PCBs-containing sealant around a public swimming pool under renovation.

This task will consist of the following sub-tasks:

1. Literature Review. Conduct a literature review to assess whether public agencies in other states have addressed this issue, and if so, what management programs were put into place. Interviews with the Cities of Tacoma, Spokane, and Seattle staff, as well as USEPA Region 10 staff will take place in order to receive an update on their investigations into PCBs in infrastructure, as well as with other jurisdictions that might be identified through the literature review. The goal of the literature review will be to identify as many types of infrastructure that could have PCBs in caulk/sealants and efficient methods that could be used to identify these types of infrastructure in the Bay Area.
2. Monitoring Design. Based on the literature review findings, develop a monitoring design plan that attempts to identify the extent of PCBs in infrastructure in the Bay Area and determine the mobility of those PCBs (both within infrastructure and during improvement projects) into urban runoff. Following development of the monitoring design, develop a task-specific QAPP and site-specific Sampling and Analysis Plan (SAP).
3. Conduct Monitoring. Conduct monitoring per the monitoring design plan, QAPP, and SAP to characterize the magnitude and extent of PCBs in different types public infrastructure.
4. PCBs in Infrastructure Management and Project Report. Investigate the current identification, management, and disposal practices for PCBs-containing caulks and sealants during infrastructure improvement projects and develop enhanced model management practices for the

purposes of reducing loads of PCBs entering the storm drain. Prepare a report to present the findings of this task and incorporate model management practices onto the project website.

Task 4. POC Monitoring for Management Action Planning Support

The focus of this task is providing support for management action planning by evaluating the effectiveness or benefits of existing management actions through monitoring. This task will support the development of a region-wide study design that will coordinate and focus a monitoring effort to fill data gaps needed to support PCBs and mercury load reduction accounting and Reasonable Assurance Analysis (RAA) needs. Potential data gaps that will be addressed via a coordinated monitoring study design include (but are not limited to):

- PCBs and mercury removal in specific types of GI treatment controls that lack data (e.g., permeable pavement over Silva Cells). In addition, more PCBs and mercury data could be collected on green streets projects to bolster the PCBs and mercury removal assumptions that will be used for the load reduction accounting / RAA.
- POC load reductions related to the effectiveness of managing PCBs in building materials during demolition and in infrastructure during infrastructure improvement projects.
- POC load reductions associated with managing illegal dumping or similar control measures.

These and other data gaps will become more evident as the interim accounting methodology currently under development by BASMAA is implemented in 2016/2017; the CW4CB Final Report is prepared; and when the approach to conducting the RAA is developed as part of Task 5 of this project. The monitoring study design will be used by the stormwater programs to conduct POC monitoring within their jurisdictions in Water Year 2018. This task will also include the preparation of a report that summarizes the monitoring data collected by the programs and will provide an analysis of results needed to inform the control measure planning and load reduction accounting / RAA, which will be conducted by the Permittees and Programs using the guidance prepared in Task 5.

This task will consist of the following sub-tasks:

1. Monitoring Study Design. Prepare a monitoring study design to reflect the overall goals for a coordinated monitoring approach. The monitoring design will describe the general objectives and rationale for sampling design. Prepare or modify an existing SAP and QAPP for the purposes of this task.
2. Conduct Monitoring. The Programs will conduct the monitoring per the monitoring study design.
3. Summary Report. Prepare a report that synthesizes the data gathered by the Programs into a format that is useable for control measure planning and load reduction accounting / RAA purposes.

Task 5. Model Control Measure Implementation Plan

MRP Provisions C.11.c. and C.12.c. require that the Permittees:

- Submit a quantitative relationship between GI implementation and mercury and PCBs load reductions (2018 Annual Report); and
- Submit an estimate of the amount and characteristics of land area that will be treated through GI implementation by 2020, 2030, and 2040 and the results of a peer-reviewed RAA to demonstrate

quantitatively that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through implementation of GI projects (2020 Annual Report).

Each of these submittals must include all data, a full description of the models, and the model inputs. Additionally, MRP Provisions C.11.d. and C.12.d. require the Permittees to prepare plans and schedules for mercury and PCBs control measure implementation and an RAA demonstrating that sufficient control measures will be implemented to attain the mercury TMDL wasteload allocations by 2028 and the PCBs TMDL wasteload allocations by 2030.

This task will provide support for establishing a regional framework and guidance for conducting the RAA, including the types of modeling and data inputs that may be used. This task will also develop a Model Implementation Plan and guidance for each Program and/or Permittee to use for preparing an Implementation Plan and a schedule to achieve TMDL wasteload allocations (as required by C.11.d/C.12.d). The Model Implementation Plan will also consider the impact of GI and other control measures on helping to mitigate or adapt to climate change. Finally, this task will compile the Program-specific Implementation Plans into one MRP-wide document that summarizes the full suite of actions that will be needed to achieve the TMDLs (region-wide) and the associated schedule and costs.

This task will consist of the following sub-tasks:

1. Bay Area RAA Technical Committee and Guidance Document.
 - a. RAA Technical Committee. Establish an RAA Technical Committee that will include representatives from BASMAA, the Regional Water Board, the San Francisco Estuary Institute, and other technical experts to help to flush out the details of the Bay Area RAA. Project funding will be used to schedule and facilitate Technical Committee meetings and prepare meeting agendas summaries.
 - b. RAA Guidance Document. Based on input from the RAA Technical Committee and in coordination with USEPA, develop an RAA guidance document specific to the Bay Area and similar in scope to the Los Angeles Regional Water Board's guidance document, which defines the specific models and analysis methods that may be used, required model/analysis methods input data, allowable data sources, and model calibration criteria. This report will update the Interim Accounting Report, as needed, per MRP Provision C.12.b.iii.(3).
2. Model Implementation Plan and Guidance. Prepare a Model Implementation Plan template and guidance document that each Program and/or Permittee can use to quantitatively demonstrate how their control measures when implemented will result in PCB load reductions sufficient to attain the PCBs TMDL wasteload allocation by 2030. The Model Implementation Plan will include technically and economically feasible control measures to be implemented, an implementation schedule, and an evaluation of costs, control measure efficiency, and significant environmental impacts resulting from their implementation.
3. Bay Area Implementation Plan. Once each Program and/or Permittee completes their Implementation Plan, a Bay Area Implementation Plan will be created that summarizes the individual plans into one MRP-wide Implementation Plan. The MRP-wide Implementation Plan is intended to provide a common stakeholder-friendly document to effectively communicate the level and types of control measures planned, schedule for implementation, and estimated costs.

Table 2 – Project Schedule

Project Milestones and Deliverables	2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Task 1. Management, Oversight and Coordination												
Project Management Team												
Start-up and Administration												
Grant Reporting												
Technical Advisory Committee (TAC)												
Quality Assurance Project Plan (QAPP)												
Outreach and Tech Transfer												
Task 2. PCBs Building Material Management Implementation Framework												
Communication and Coordination												
Model Framework & Protocol												
Training and Outreach												
Task 3. PCBs in Infrastructure Investigation and Management Guidance												
Literature Review												
Monitoring Study Design												
Field Monitoring & Lab Analysis												
PCBs in Infrastructure Management & Task Report												
Task 4. POC Monitoring for Management Action Planning Support												
Monitoring Study Design												
Field Monitoring & Lab Analysis												
Data Analysis & Task Report												
Task 5. Model Control Measure Implementation Plan												
Bay Area RAA Guidance & Tech WG												
Model Implementation Plan and Guidance												
Bay Area Implementation Plan												

ENVIRONMENTAL RESULTS - PROJECT OUTPUTS AND OUTCOMES

Demolishing PCBs at the Source, a Bay Area Partnership is anticipated to realize significant environmental results for water quality in San Francisco Bay. The project will facilitate meaningful PCBs and mercury control measure planning and implementation by all of the MRP Permittees, thereby resulting in significant PCBs and mercury load reductions in urban runoff to the Bay. The ultimate, long-term outcome of these actions will be to achieve the 14.4 kg/yr PCBs load reductions and 62.1 kg/yr total mercury load reductions required from the MRP Permittees. Table 3 below summarizes the project’s outputs and outcomes.

The proposed project will also yield a number of important local and regional benefits, both in the near- and far-term, including:

- Providing residents, workers, and visitors in the Bay Area with a safer and healthier environment (PCBs concentrations in sediment samples from Bay Area watersheds have sometimes exceeded screening levels for human direct exposure at sites within residential and commercial/industrial land uses).

Table 3 – Outputs and Outcomes

OUTPUTS	OUTCOMES	
	Short-Term (1-5 Years)	Long Term (5-20+ Years)
Task 1. Project Management, Oversight and Coordination		
<ul style="list-style-type: none"> • Quarterly progress reports • Final project report • QAPP for all tasks • Updates to BASMAA website 	<ul style="list-style-type: none"> • QA/QC protocols, data management methods, reporting procedures. 	
Task 2. PCBs Building Material Management Implementation Framework		
<ul style="list-style-type: none"> • Model framework and protocol <ul style="list-style-type: none"> ○ Guidance information on assessment and abatement ○ Model ordinance ○ Supplemental demolition permit application materials ○ Tracking and effectiveness protocols • Training and outreach materials 	<ul style="list-style-type: none"> • Approximately 2 kg/yr reduction of PCBs. 	<ul style="list-style-type: none"> • Potential significant PCBs load reduction (>2kg/yr) in urban runoff discharged to the Bay.
Task 3. PCBs in Infrastructure Investigation and Management Guidance		
<ul style="list-style-type: none"> • Monitoring study design report • Field monitoring and lab analysis • Data analysis and project report 	<ul style="list-style-type: none"> • Identification of PCBs in infrastructure in the Bay Area as an opportunity for load reduction. 	<ul style="list-style-type: none"> • Potential moderate PCBs load reduction in urban runoff discharged to the Bay.
Task 4. POC Monitoring for Management Action Planning Support		
<ul style="list-style-type: none"> • Monitoring study design report • Field monitoring and lab analysis • Data analysis and project report 	<ul style="list-style-type: none"> • Information needed to develop effective implementation plans that will lead to significant long-term load reductions for PCBs and mercury. 	<ul style="list-style-type: none"> • The ultimate, long-term outcome of these actions will be to achieve the 14.4 kg/yr PCBs load reductions and 62.1 kg/yr total mercury load reductions required from the MRP Permittees.
Task 5. Model Implementation Plan		
<ul style="list-style-type: none"> • Bay Area RAA guidance • Model Implementation Plan and guidance • Bay Area Implementation Plan 	<ul style="list-style-type: none"> • Information and guidance needed to develop effective implementation plans that will lead to significant long-term load reductions for PCBs and mercury. • Effective communication of the level and types of control measures planned, schedule for implementation, and estimated costs for meeting the required PCBs and mercury load reductions. 	<ul style="list-style-type: none"> • The ultimate, long-term outcome of these actions will be to achieve the 14.4 kg/yr PCBs load reductions and 62.1 kg/yr total mercury load reductions required from the MRP Permittees.

Demolishing PCBs at the Source, a Bay Area Partnership
 BASMAA SFBWQIF Proposal Narrative (05-27-16)

- Increasing Bay Area urban acreage treated with infrastructure retrofits to remove pollutants and reduce hydrologic impacts on downstream receiving water; thereby protecting beneficial uses.
- Reducing pollution in runoff from existing urban development and helping to mitigate the impact on water quality.
- Informing future land use planning, development practices (e.g., low impact development), and efforts to investigate and abate sediment-bound pollutants, thus leading to improvements in water quality and the environment in the Bay Area and other urban areas in California and the United States.

PARTNERSHIPS

BASMAA is a well-established regional partnership that focuses on water quality issues related to stormwater runoff. BASMAA is comprised of the nine municipal stormwater programs in the San Francisco Bay Area, which in turn represent 100 agencies, including 85 cities and towns, 8 counties, and 7 special districts. The jurisdictions of these agencies cover most of the watershed immediately surrounding San Francisco Bay. The BASMAA partnership facilitates the efficient use of public resources through regional information sharing, consistency, and cooperation.

The Project Partners include six BASMAA member agencies: the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), the Alameda Countywide Clean Water Program (ACCWP), the Contra Costa Clean Water Program (CCCWP), the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), the Fairfield-Suisun Urban Runoff Management Program (FSURMP), and the Vallejo Sanitation and Flood Control District (VSFCD). A letter of support from each of these agencies is attached. These project partners represent a wide range of communities including underserved areas.

BUDGET DETAIL

BASMAA is requesting \$800,000 in project funds from the USEPA San Francisco Bay Water Quality Improvement Fund (SFBWQIF) towards the \$1.6M total project cost. The remaining 50% match (\$800,000) will be comprised of contributions from project partners over the three year project term (Table 4). These contributions will be largely in the form of in-kind services. A letter is attached from each of these agencies verifying the commitment to contribute to the project match.

Table 4 - Contributions

Agency	Contribution
SCVURPPP	\$261,670
ACCWP	\$232,060
CCCWP	\$160,150
SMCWPPP	\$109,200
FSURMP	\$20,200
VSFCD	\$16,720
Total Contribution	\$800,000

Table 5 summarizes the project tasks, implementing parties, and associated budgets, including how USEPA funding and the project match are apportioned to each task.

Demolishing PCBs at the Source, a Bay Area Partnership
 BASMAA SFBWQIF Proposal Narrative (05-27-16)

Table 5 - Budget

Task	Match Budget	Grant Funding	Total Budget	Description of Task, Outputs and/or Deliverables
Task 1: Management, Oversight, and Coordination				
Project Management Team	\$50,000		\$50,000	Match via Program staff and Permittee participation in meetings/ coordination.
Start-up and Administration	\$30,000	\$145,000	\$175,000	Match via BASMAA Executive Director participation.
Grant Reporting		\$120,000	\$120,000	12 quarterly progress reports and one Final Report.
Technical Advisory Committee		\$25,000	\$25,000	Form and facilitate a TAC.
QAPP	\$25,000		\$25,000	Develop an overall project QAPP.
Outreach and Tech Transfer	\$25,000		\$25,000	Includes updating BASMAA website, workshops, and/or presentations at conferences.
Task 2: PCBs Building Material Management Implementation Framework				
Communication and Coordination	\$50,000		\$50,000	Develop a web portal.
Model Framework & Protocol	\$50,000	\$250,000	\$300,000	Assemble and review existing information and update regulatory drivers and requirements. Develop guidance for information on assessment and abatement. Draft model ordinance. Develop supplemental demolition permit application materials. Tracking and effectiveness evaluation.
Training and Outreach	\$50,000	\$30,000	\$80,000	Develop training and outreach materials and provide training.
Task 3: PCBs in Infrastructure Investigation and Management Guidance				
Literature Review	\$25,000		\$25,000	Conduct a literature review.
Monitoring Study Design	\$25,000		\$25,000	Develop a monitoring design plan, QAPP and SAP.
Field Monitoring & Lab Analysis		\$100,000	\$100,000	Conduct monitoring.
PCBs in Infrastructure Management Investigation & Task Report	\$50,000		\$50,000	Conduct PCBs in Infrastructure Management investigation. Prepare report.
Task 4: POC Monitoring for Management Action Planning Support				
Monitoring Study Design		\$40,000	\$40,000	Prepare a monitoring study design, QAPP and SAP.
Field Monitoring & Lab Analysis	\$250,000		\$250,000	Conduct monitoring and lab analysis.
Data Analysis & Project Report	\$40,000	\$40,000	\$80,000	Analyze data and prepare task report.
Task 5: Model Control Measure Implementation Plan				
Bay Area RAA Guidance & Technical Workgroup	\$80,000		\$80,000	Convene a technical workgroup and develop RAA guidance document.
Model Implementation Plan		\$50,000	\$50,000	Model Implementation Plan and Guidance.
Bay Area Summary Report	\$50,000		\$50,000	Bay Area Implementation Plan.
Total Budget	\$800,000	\$800,000	\$1,600,000	50% Match

PROGRAMMATIC CAPABILITY AND PAST PERFORMANCE

BASMAA was established in 1989 as a regional association through a memorandum of understanding (MOU) covering the nine Bay Area counties. In the more than 20 years since its founding, BASMAA has provided a forum for agencies with common interests, challenges, and responsibilities to collaborate on stormwater management issues of mutual interest and needs. Though its organizational framework has evolved from an assortment of agencies bound together by an MOU to the 501(c)(3) nonprofit entity established in 2009 that it is today, BASMAA has continued to help its members by promoting understanding of existing and emerging stormwater quality management issues and technologies, facilitating agency cooperation, increasing program efficiency and effectiveness, and advancing sustainable stormwater quality management approaches in executive and legislative decision-making and public debate. Through BASMAA, stormwater quality management programs have been able to address regional, partnership, and locally specific needs as set forth in National Pollutant Discharge Elimination System (NPDES) stormwater management permits issued by the Regional Water Board.

Since 2010, BASMAA committees and work groups have overseen the completion of over 50 collaborative regional projects contracted to its agencies or consultants. BASMAA’s new challenge and opportunity is to assist its member stormwater quality management programs and their constituent agencies to work with the Regional Water Board on the new version of the MRP (version “2.0”) that addresses watersheds in the Bay Area, and to foster collaboration and mutual assistance on implementation of MRP provisions. For the past 20 years, BASMAA and its participating entities have proven their capacity to collaborate on significant projects of regional importance, and have produced deliverables and outcomes that provide much of the foundation for current regional stormwater quality management efforts, including this proposal. BASMAA fully expects to continue to deliver the same quality of project capacity and success its members have achieved through collaborative association.

<p>Recent Federally and Non-Federally Funded Assistance Agreements</p> <ul style="list-style-type: none">• Clean Watersheds for a Clean Bay (CW4CB) (2010-2017)• IPM Advocates for Retail Stores (2010-2013)• Greener Pesticides for Cleaner Waterways (2012-2014)• Tracking California’s Trash (2013-2016)• IPM Focus on Multi-Unit Housing (2014-2017)• Urban Greening Bay Area (2015-2018)

In addition to the tens of projects and programs started and sustained by BASMAA using millions of dollars in funds from its members and other agencies over the years, BASMAA has received and conducted a number of federally and non-federally funded grant projects.

Clean Watersheds for a Clean Bay (USEPA Funded) (\$5,000,000). Implementing the San Francisco Bay PCBs and Mercury TMDLs with a Focus on Urban Runoff (CW4CB), uses a partnership-driven strategy in a multi-year regional effort to reduce loading of sediment-bound pollutants to the Bay and implement the PCBs and mercury TMDL water quality restoration programs. The total project cost is \$5 million (\$1.94 million in non-federal match) and has been in progress since May 2010. CW4CB has made substantial progress towards reducing annual loading of PCBs and mercury to the Bay and has laid the groundwork for fully meeting the TMDL allocations in the future. CW4CB selected five high priority subwatersheds that discharge urban runoff with PCBs and other pollutants to the Bay, identified PCB and mercury source areas within the project subwatersheds and referred these sites to regulatory agencies for cleanup and abatement, developed methods to enhance removal of sediment with PCBs and other

Demolishing PCBs at the Source, a Bay Area Partnership
BASMAA SFBWQIF Proposal Narrative (05-27-16)

pollutants during municipal sediment management activities, retrofitted eight urban runoff treatment facilities throughout the Bay Area, and facilitated development and implementation of a regional risk reduction program that focuses on educating the public about the health risks of consuming certain species of Bay fish that contain high levels of PCBs and mercury. The knowledge and experience gained and the lessons learned during CW4CB are being promoted and made readily available to inform future similar efforts by others in the Bay Area and elsewhere in California and the United States.

To-date, the tasks have been completed on-budget but at a slower pace than planned because of a number of factors over which BASMAA has little or no control, including the complexities that arise when conducting ten capital improvement projects in public rights-of-way with five diverse municipal agency partners and the lack of rainfall. As a result, two requests for time extensions have been filed and granted by USEPA. Reporting of progress towards outputs and outcomes has been timely. The grant was subject to an “administrative and financial management system desk review” audit soon after its inception and no substantial issues were identified.

IPM Advocates for Retail Stores (State Department of Pesticide Regulation Funded) (\$170,000). The purpose of this grant was to improve delivery of integrated pest management (IPM) information at retail stores through education of employees and customers. To meet this goal, BASMAA created and implemented a training and certificate program for IPM Advocates, who in turn helped retailers provide information to customers on less-toxic pest management practices. Of 20 applicants, 10 were chosen to undergo the training program developed under the grant and graduated as “IPM Advocates”. The project was so successful that the Advocates that decided to make career changes to being paid, full or part-time, did so and continue to do so through contracts with municipal clients. And the IPM Advocates Program received an IPM Innovators Award from the Department of Pesticide Regulation (DPR) in 2014 for its achievements. The project was completed on-time and on-budget with timely reporting of progress towards outputs and outcomes and a final report that was praised by the DPR grant manager. The grant was subject to an extensive “desk review” audit soon after its inception and again at the conclusion of the grant. No substantial issues were identified in either audit.

Greener Pesticides for Cleaner Waterways (USEPA Funded) (\$42,000). BASMAA was a sub-recipient to Association of Bay Area Governments (ABAG)-SFEP of this SFBWQIF grant project. The purpose of BASMAA’s portion of this grant was to provide a team of people with extensive experience in IPM (i.e., the IPM Advocates), to support selected retail stores in participating in the *Our Water Our World* program. The IPM Advocates assisted in setting up 14 designated retail stores for enhanced participation in the *Our Water, Our World* program, trained retail store staff in IPM and less-toxic pest management techniques, assisted store staff in identifying less-toxic pesticide products so they can make recommendations to customers, and staffed store events and workshops to provide information directly to customers. The project was completed on-time and on-budget with timely reporting of progress towards outputs and outcomes and an acceptable final report.

Tracking California’s Trash (State Water Board Funded) (\$870,000). The purpose of this grant is to develop, evaluate, and recommend monitoring methods to accurately measure trash loads in receiving waters or from stormwater conveyances; fill critical data gaps on the effectiveness and costs/benefits of implementing enhanced street sweeping and storm drain inlet cleaning as alternatives to trash full capture devices; and compile and publish recommendations along with other available knowledge of trash monitoring and reduction. To-date, the tasks have been completed on-time and on-budget with timely reporting of progress towards outputs and outcomes.

Demolishing PCBs at the Source, a Bay Area Partnership
BASMAA SFBWQIF Proposal Narrative (05-27-16)

IPM Focus on Multi-Unit Housing (DPR Funded) (\$199,927). The purpose of this grant is to develop and test comprehensive approaches to pest reduction in and around multi-unit residential buildings, including IPM training and outreach to building owners and managers, maintenance staff, tenants, architects, and building developers, encouraging residents and others who contract with pest management professionals to request and receive IPM treatments, and developing IPM continuing education (CE) for pest management professionals, working with trade associations to prepare IPM-based CE focused on multi-unit housing, which can be augmented for use in and around other building types. To-date, the tasks have been completed on-time and on-budget with timely reporting of progress towards outputs and outcomes.

Urban Greening Bay Area (USEPA Funded) (\$200,000). BASMAA is a sub-recipient to ABAG-SFEP of this SFBWQIF grant project. The purpose of BASMAA's portion of this grant is to design and manage a GI regional roundtable process and a design charrette. The roundtable process will be guided by a roundtable strategy and result in a final report that includes a roadmap for integrating GI and stormwater management funding and programs with future climate change and transportation investments in the Bay Area. The design charrette will result in cost-effective and innovative "typical" designs for integrating GI with bicycle and pedestrian improvements at roadway intersections. BASMAA's portion of the project kicked-off just recently.

Staff Expertise and Qualifications

Geoff Brosseau, BASMAA Executive Director and Project Manager of *Demolishing PCBs at the Source, a Bay Area Partnership*, has been an environmental management consultant since 1989, specializing in water quality, particularly stormwater and wastewater. He provides assistance to local and state agencies in California in the areas of: association development and management, program development and management, best management practices, special studies, expert witness services, guidance manuals/training, and small business and public education.

Mr. Brosseau was one of the principal authors of the 1993 California Storm Water Best Management Practice Handbooks and he is also a principal author of the 2003 versions of the Handbooks, including author of the Business-specific BMP Guide Sheets in the Industrial and Commercial Handbook. Mr. Brosseau is the principal author of both statewide and national guidance manuals on water pollution prevention, in particular for:

- Vehicle service facilities (Water Environment Federation);
- Retail gasoline outlets (RGOs) or service stations (California Stormwater Quality Association);
- Mobile cleaners (Bay Area Stormwater Management Agencies Association).

He has helped develop and conduct inspections and outreach at hundreds of commercial facilities.

Mr. Brosseau has assisted over 25 municipalities throughout the state in developing and implementing virtually every aspect of their stormwater programs. Most notable among these municipalities are the City of Palo Alto and the City and County of San Francisco, both known and nationally recognized for their innovative and proactive water pollution prevention programs. Mr. Brosseau's firm has been an integral part of these programs since 1994. In 1994, Geoff became part-time Executive Director of the BASMAA and continues in that role today.

Additionally in early 2004, Mr. Brosseau was also hired to be the part-time Executive Director of the California Stormwater Quality Association (CASQA), a statewide organization similar to BASMAA. CASQA is composed of stormwater quality management organizations and individuals, including cities, counties, special districts, industries, and consulting firms throughout the state. CASQA was originally formed in 1989 as the California Stormwater Quality Task Force to advise the State Water Board on

stormwater discharge issues and recommend approaches to stormwater quality management in California. In this capacity, CASQA has assisted and continues to assist the State Water Board with the development and implementation of stormwater permitting programs. Currently, CASQA is actively working on providing guidance on stormwater program Effectiveness Assessment and a stormwater Research Agenda, as well as advising the State on quantifiable measures (e.g., numeric effluent limitations), areas of special biological significance (ASBS), and a statewide stormwater policy.

EXPENDITURE OF AWARDED GRANT FUNDS

BASMAA has a number of procedures and controls for ensuring that awarded funds will be expended in a timely and efficient manner.

Single Audits

As a result of federal grant expenditures of \$500,000 or more in a fiscal year, BASMAA has undergone “A-133” or “single” audits during its last three fiscal years (FY 13-14, FY 14-15, and FY 15-16). The most recent of these extensive audits did not identify any deficiencies in internal control that the independent auditors would consider to be material weaknesses or significant deficiencies (i.e., a “clean” audit).

Policies and Procedures

Governance of BASMAA is controlled by a set of Bylaws and Policies and Procedures, including the following that are relevant to grant / project management.

- Budgeting and Work Planning
- Conflict of Interest
- Consultant Selection and Contracting
- Document Management
- Federal Grant Administration
- Financial
- Funding and Accounting for BASMAA Efforts
- Grant Proposal Development
- Project Management and Project Deliverable Approval
- Travel Reimbursement
- Whistleblower

These policies and procedures have been reviewed as part of the CW4CB desk review as well as by the single audits of BASMAA’s entire financial and project / grant management system, and have been determined adequate for ensuring that awarded funds will be expended in a timely, efficient, and appropriate manner.