



B A S M A A

Alameda Countywide
Clean Water Program

Contra Costa
Clean Water Program

Fairfield-Suisun
Urban Runoff
Management Program

Marin County
Stormwater Pollution
Prevention Program

Napa County
Stormwater Pollution
Prevention Program

San Mateo Countywide
Water Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Sonoma County
Water Agency

Vallejo Sanitation
and Flood
Control District

To Whom It May Concern:

We certify under penalty of law that this document was prepared under our direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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TECHNICAL MEMORANDUM

TO: BASMAA Monitoring and Pollutant of Concern Committee (MPC)
FROM: Chris Sommers (EOA), Peter Mangarella and Lisa Austin (GeoSyntec)
DATE: July 9, 2012
SUBJECT: **Draft** Management Questions and Objectives for the Integrated Monitoring Report – Part B (Mercury and PCB Loads and Load Reduction Alternatives)

The Municipal Regional Permit (MRP) requires Permittees to submit an Integrated Monitoring Report (IMR) by March 14, 2014 that summarizes water quality monitoring activities and provides conclusions with regard to provisions C.8 and most of C.11 and C.12. The Bay Area Stormwater Management Agencies Association (BASMAA) will assist Permittees in developing and submitting the IMR via a regional project(s). The IMR will be separated into two parts: Part A will focus on water quality monitoring conducted per Provision C.8¹. Part A will be described in a separate document. Part B is the focus of this memorandum and will provide a synthesis of data and information developed through the implementation of PCB and mercury control pilot studies (MRP provisions C.11 and C.12) and PCB and mercury specific monitoring studies conducted via the RMP. Part B will also incorporate information gained through pollutant loading station monitoring conducted per provision C.8.e.

IMR Reporting Requirements:

The final reporting requirements for the MRP provisions listed in the table below will be satisfied via IMR-Part B:

MRP Provision #	MRP Provision Name	Oversight & Collaborating Program/Entity
C.12.b	PCB-containing Building Materials	BASMAA
C.11/12.c	Source Investigation & Property Referrals	BASMAA (via CW4CB)
C.11/12.d	Enhanced Municipal Sediment Removal	BASMAA (via CW4CB)
C.11/12.e	On-site Stormwater Treatment Retrofits	BASMAA (via CW4CB)
C.11/12.f	Pilot Diversions to POTWs	BASMAA
C.11/12.g	Stormwater Loads and Loads Reduced	BASMAA (in collaboration w/RMP via STLS)
C.11/12.h	Fate and Transport Studies	BASMAA (via RMP)
C.11/12.i	Risk Reduction Program	BASMAA (via CW4CB)
C.11.j	Mercury Allocation Sharing	BASMAA (in coordination with CalTrans)

¹ Part A will address reporting requirements for C.8.

In summary, the reporting requirements described in provisions C.11 and C.12 of the MRP are:

- Report on the effectiveness of enhanced practices pilot implementation, including estimates of loads reduced, and present a plan and schedule for possible expanded implementation for subsequent permit terms.
- Report the results of chosen monitoring/measurement approach concerning loads assessment and estimation of loads reduced.
- Report the findings and results of the (fate and transport) studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted or implemented in future permit cycles.
- Submit the manner in which the urban runoff mercury TMDL allocation will be shared between the Permittees and California Department of Transportation (CalTrans).

IMR Objectives:

1. Fully comply with the March 15, 2014 MRP reporting requirements associated with the C.11 and C.12 provisions listed above (all of C.11/12).
2. Satisfy USEPA Clean Watershed for Clean Bay (CW4CB) reporting requirements (Provisions C.11/12.c,d,e,i).
3. Develop a framework and approach that will assist in the potential recalculation of PCB and mercury stormwater loads to the Bay, and allotting these loads among appropriate MS4s and other stormwater dischargers (Provision C.11/12.g).
4. Document lessons learned via pilot Best Management Practice (BMP) implementation (e.g., comparisons among BMPs in terms of feasibility, cost-benefit, and load reduction opportunity) to guide future cost-effective implementation, possibly at a broader scale (Provisions C.11/12.b,c,d,e,f,i).
5. Document the combined knowledge gained from the implementation of the MRP provisions C.11 and C.12 to assist in the development of provisions in the next MS4 permit related to PCB and mercury TMDL implementation (all of C.11/12).
6. Guide the implementation of actions by the Co-Permittees to reduce PCB and mercury loads from stormwater runoff, make progress towards achieving the TMDL waste load allocations assigned to the Bay Area MS4s, and continue assessing the feasibility of fully addressing the allocations (all of C.11/12).

IMR Management Questions:

The following high priority management questions were developed to guide Part B of the IMR. The questions were formed through an evaluation of the MRP and the MRP fact sheet and discussions to-date with Water Board staff during the development and implementation of the MRP regarding the intent of the IMR. The specific projects that are intended to assist in addressing each question are identified. The linkages between the objectives described above and the management questions are also described. As illustrated, some questions are intended to achieve multiple objectives.

1. Stormwater Loads, Fate and Transport (Objectives 3, 5 and 6)

- A. **What is the current annual mass of PCBs and mercury entering the Bay from small tributaries?** – This question will be addressed through information developed via the STLS and summarized in IMR – Part B. A full description of methods and results will be provided in IMR – Part A.
- B. **What portion of the mass from small tributaries is attributable to MS4s versus other transport pathways?** - This question will be addressed through information developed via the STLS and the Allocation Sharing Project conducted in response to provision C.11.j.
- C. **Which small tributaries are contributing the largest PCB and mercury mass per unit catchment area?** - This question will be addressed through information developed via the STLS and summarized in IMR – Part B.
- D. **Which Bay tributaries are contributing most to mercury and PCB impairment in the Bay?** - The contribution to impairment is dependent on both pollutant loading and fate and transport factors such as geographic location of input to the Bay and mercury methylation potential. Therefore, this question is best addressed through information developed via the STLS and fate/transport studies and modeling studies conducted the RMP (e.g., small fish bioaccumulation, near-shore sediment concentrations, etc.).

2. Stormwater Loads Reduced/Avoided Methods (Objectives 1, 3, 5 and 6)

- A. **What are the approaches selected to assess progress towards TMDL WLAs?** – This question will be addressed through the BASMAA regional project designed to develop mercury and PCBs load reduction quantification methods, and pilot implementation project results.
- B. **What mass of PCBs and mercury to the Bay were reduced or avoided by MS4s: 1) prior to the adoption of the TMDLs (e.g., baseline), and 2) during implementation of the MRP?** - This question will be addressed through the BASMAA regional project designed to develop mercury and PCBs load reduction quantification methods, and pilot implementation project results.

3. Pilot Implementation Projects (Objectives 1, 2, 4, 5, and 6)

A. Feasibility of Pilot Projects

- i. **What are the lessons learned via the implementation of MRP pilot projects with regard to feasibility?** – This question will be addressed through the implementation of pilot projects and information gathered through the implementation and monitoring process.
- ii. **Which types of BMPs appear to be the most technically feasible (i.e., capable of being put into practice)?** – This question will be addressed through the implementation of pilot projects and information gathered through the implementation and monitoring process.

B. Cost-Benefit of Pilot Projects

- i. **What mass of PCBs and mercury to the Bay were reduced or avoided via the implementation of MRP required pilot projects?** - This question will be addressed via pilot implementation project data collection and analyses.
- ii. **What are the capital and annual operational costs for each pilot project implemented via the MRP?** - This question will be addressed via pilot implementation project data collection and analyses.

- iii. **What are the load reduction benefits per unit cost for each type of pilot BMP implemented during the MRP term?** - This question will be addressed via pilot implementation project data collection and analyses.
- iv. **Which BMPs appear to be the most cost effective for reducing/avoiding PCBs and mercury from MS4s?** - This question will be addressed via pilot implementation project data collection and analyses, and supplementing with information in the literature on BMP effectiveness and costs.

C. Opportunity (for Expanded Implementation and Load Reduction)

- i. **What mass of PCBs and mercury is available for load reduction or avoidance by each type of BMP pilot tested?** - This question will be addressed via analyses conducted as part of the IMR project. Information available through STLS development of the Regional Watershed Spreadsheet Model, pilot implementation project data collection, and other existing information will be used to address this question.
- ii. **What feasible BMP implementation scenarios provide the best opportunities (costs & benefits) for PCB and mercury load reduction from MS4s and addressing impairment in the Bay?** - This question will be addressed via analyses conducted as part of the IMR project. Information available through STLS development of the Regional Watershed Spreadsheet Model, pilot implementation project data collection, and other existing information will be used to address this question, including any available RMP fate/transport studies applicable to reducing impairment in the Bay.
- iii. **In what drainages should feasible BMPs be implemented to have the best opportunities for PCB and mercury load reduction from MS4s and addressing impairment in the Bay in the future?** - This question will be addressed via analyses conducted as part of the IMR project. Information available through STLS development of the Regional Watershed Spreadsheet Model, pilot implementation project data collection, and other existing information will be used to address this question, including any available RMP fate/transport studies applicable to reducing impairment in the Bay. Addressing this question will assist Permittees in identify drainages for consideration of future BMP implementation.