

April 24th, 2014

TO: RMP Steering Committee

FROM: Lester McKee (on behalf of the STLS local team (Sommers, Feng, Looker, O'Hara, McKee, Hunt, Gilbreath))

RE: **Request to Reallocate remaining RMP 2013 and 2014 Event Mean Concentration (EMC) Funds**

Background

The purpose of this memorandum is to request that the Steering Committee approve the reallocation of RMP 2013 and 2014 funding originally approved for the development of Event Mean Concentrations (EMC) in support of the Small Tributaries Loading Strategy (STLS). Consistent with the Municipal Regional Stormwater NPDES permit for Phase I permittees, the STLS called for progressive completion of three tasks: 1.) monitoring stormwater pollutants of concern at six loading stations (two funded directly by the RMP and four supported by BASMAA), 2.) development of the Regional Watershed Spreadsheet Model (RWSM) (base funding from the RMP and additional BASMAA funding for specific sub-tasks), and 3.) development of event mean concentrations (EMC) to support the input side of the model.

To date, the EMC funding has been used for two main purposes:

- Development of GIS data layers for identifying and mapping pollutant source areas and land uses in watersheds draining to San Francisco Bay for improvement of the geographic basis and resolution of the model input side to support the back-calculation method;
- Development of a range of EMC estimates for various GIS source areas and land uses using back calculation methods from available local data and databases; and
- Optimization of the land use/source area EMC range to provide a robust EMC estimate for land uses/source areas present within RWSM calibration watersheds.

Optimized EMC estimates were used in the RWSM in order to generate regional PCB and mercury loads estimates. The PCB and mercury portion of the draft RWSM report was finalized in December 2013 and is currently in review. A summary of outcomes from this work and other related STLS activities completed over the past 12 months, related to EMC development, follows:

- The inverse optimization technique proved very effective and negated the need to carryout expensive field monitoring to generate local EMC data. Calibrating the model was well supported by the existence of particle ratio data at the outlets of 25 watersheds and verification of the model performance was well supported by loading data in 11 watersheds. In both cases, most data have been generated with RMP funding over the past 12 years.
- Absence of many source area categories of interest in the 25 calibration watersheds negated the use of these categories as parameters in the model. Model performance in relation to key management questions would be improved considerably with focused monitoring at the outlets of watersheds, sub-watersheds or stormdrain sheds where PCB and mercury sources are present.
- The “reconnaissance study” carried out in 17 watersheds with RMP 2011 funds, has been the most cost effective methodology to date used under the STLS for surveying stormwater quality and generating data for multiple purposes. Data have been used for rudimentary loads estimates, ranking watersheds for management consideration, back-calculating the relative magnitude of land use/source area related pollutant production, and supporting regional loads estimation through calibration of the RWSM. With refinements (for example sample compositing and the use of passive sampling techniques such as micro samplers and sedimentation chambers), this method could be repeated even more cost effectively to generate data for as many as 20+ watersheds/stormdrain sheds per year. If applied for multiple years, it is easy to envision information on particle ratios at 100+ locations over a 5-year period.

There is a range of existing knowledge that needs to be synthesized and a number of additional analyses and interpretations that could be performed to support selection of watersheds to monitor (those that would address immediate and longer term questions). However, funding is needed to carry out the synthesis and to complete planning to finalize monitoring design(s) for WY 2015 and beyond.

Currently, the RMP 2013 EMC budget has \$10,000 remaining and the RMP 2014 EMC budget has the full \$80,000 budget remaining.

Proposed Tasks and Budget

The STLS local team is requesting that the Steering Committee approve the reallocation of the remaining 2013/2014 funds that were previously approved for EMC development. The unexpended funds would be used to synthesize monitoring information collected to date and prepare for STLS related monitoring activities during the near term. STLS recommends that two tasks are completed using the unexpended \$90,000:

1. Development of the STLS monitoring design for the WY 2015; and
2. Development of a synthesis report to document progress to-date from monitoring over the previous 4+ years in relation to STLS management questions and synthesizing all available information to support monitoring needs in WY 2016 and beyond.

The proposed budgets, subtasks and desired outcomes for task are summarized in the table below:

Task	Description	Desired outcome	Budget (\$)
1	WY 2015 monitoring design	Completed monitoring design by August 1 st 2014.	\$25,000- \$28,000
1.1	Develop criteria for site selection (STLS process)	Clear rationale and linkages to management questions	\$3,000
1.2	Review existing GIS data (source area, storm drains) and other data (recent BASMAA IMR information and RWSM)	Initial site list	\$7,000- \$10,000*
1.3	Desktop review of initial site list via Google Earth	Virtual feasibility review and map preparation for field work	\$1,000
1.4	Fieldwork to assess sites for logistical feasibility for sampling	List attributed with feasibility (space, safety, lighting, access etc)	\$10,000
1.5	Final site decision and budgeting based on the balance of management questions number of sites, analytes, ratio of passive to active sampling etc)	Final site list	\$4,000
2**	Information synthesis to document progress on answering MQs and support the MRP 2.0 STLS monitoring design	Completed draft report providing rationale for MRP 2.0 sampling design by December 2014.	\$62,000
		Total	\$90,000

* Review of GIS could be more extensive than budgeted here

** STLS still to determine management sub-questions, analytical/ interpretative techniques and report outline.

Proposed Schedule

Task	Timeline
1. Water Year 2015 Monitoring Design	
Develop criteria for site selection	May 2014
Review existing GIS data	May 2014
Develop initial site list	June 2014
Fieldwork to recon site list	July 2014
Finalize site list	August 2014
2. STLS Synthesis Report	
Develop report scope and outline	Summer 2014
Draft report	October 2014
Final report	December 2014