

RMP Special Study Proposal: Synthesis of Information on PCBs**Estimated Cost:** \$53,000**Oversight Group:** TRC, CFWG**Proposed by:** Jay Davis, SFEI**PROPOSED DELIVERABLES AND TIME LINE**

Deliverable	Due Date
Draft outline	December 2010
Draft report	May 2011
Final report	August 2011

BACKGROUND AND JUSTIFICATION

The RMP PCB Strategy Team formulated a PCB Strategy in 2009. The Team recognized that a significant body of new information has been generated since the PCBs TMDL Staff Report was prepared. Some of the important new datasets include:

- Surface sediment data obtained using more accurate analytical methods (high resolution mass spectrometry) and the randomized sampling design
- Water data from the new random design
- Additional trend data from sport fish, bivalves, and bird eggs
- Surprising data from small fish showing higher than expected concentrations
- Additional data suggesting the possibility of toxic effects on avian embryos
- Information on a “new” PCB (PCB 11) that is abundant and ubiquitous
- Information on the entire suite of 209 congeners, now available for several matrices in the Bay

The RMP PCB Strategy has articulated management questions to guide a long-term program of studies to support reduction of PCB impairment in the Bay (see below). The PCB Team recommended two studies to begin addressing these questions. The first recommended study was to take advantage of an opportunity to piggyback on the final year of the three-year small fish mercury sampling in 2010. The second study recommended was a synthesis and conceptual model update based on the information that has been generated since the writing of the TMDL Staff Report. The Team considered this a prudent next step to ensure effective use of RMP funds and to form the basis for a plan for the next few years of PCB studies. The Team outlined the scope for this synthesis effort (see below).

APPLICABLE RMP MANAGEMENT QUESTIONS

The most relevant questions for this synthesis are the questions articulated specifically for the PCB Strategy.

1. What potential for impacts on humans and aquatic life exists due to PCBs?
2. What are appropriate guidelines for protection of beneficial uses?
3. What is the total maximum daily load of PCBs that can be discharged without impairment of beneficial uses?

4. What are the rates of recovery of the Bay, its segments, and in-Bay contaminated sites from PCB contamination?
5. What are the present loads and long-term trends in loading from each of the major pathways?
6. What role do in-Bay contaminated sites play in segment-scale recovery rates?
7. Which small tributaries and contaminated margin sites are the highest priorities for cleanup?
8. What management actions have the greatest potential for accelerating recovery or reducing exposure?
9. What is the most appropriate index for sums of PCBs?

OBJECTIVES AND APPROACH

The goal of the synthesis effort will be to produce a technical report that answers, to the extent possible, the PCB Strategy questions based on the information that has accumulated to date. Other questions may also be addressed. Stakeholder input on an outline of the report will be obtained as a first step in the project.

A considerable body of information generated by the RMP and other programs has accumulated in recent years. Some of the datasets to be covered in the review are listed below.

- Status and Trends: RMP (Sport fish, Bivalves, Avian eggs, Sediment, Water)
- RMP PCB Strategy: Small fish
- Effects: USFWS Avian egg work, UC Davis Effects on fish
- Fate: RMP (cores, multibox model)
- Loading Studies: Central Valley loads (RMP), Small tributaries (loading studies, BMP study), atmospheric deposition (global, local), POTWs (Region 2)

Stakeholder suggestions on additional datasets to include will also be encouraged.

The PCB Team also recommended reviewing and making recommendations related to several other sources of information.

- TMDLs and abatement actions from elsewhere to evaluate lessons learned and whether there are rules or thumb for what works and what doesn't work.
- Information on PCB 11. A related issue is the most appropriate index of total PCBs – whether to include PCB 11 and how many congeners to include in routine measurements and sums.
- The linkage between sediment and sport fish, including an evaluation of why concentrations appear to have declined in bivalves and sediments, but not in sport fish.
- Evaluation of sources using congener profiles.
- Updated estimates of nearshore ambient average concentrations and the inventory of PCBs in various compartments of the Bay ecosystem.
- An update of the Gobas food web model using the new sediment data.
- A review of literature on estuarine degradation rates, which have a large influence on predictions of the rate of recovery of the Bay.

- A review of literature on rates of attenuation of PCB loads from watersheds, which also have a large influence on Bay recovery.

The synthesis will also evaluate progress relative to the report: PCBs in San Francisco Bay: Impairment Assessment/Conceptual Model Report developed by SFEI for the Clean Estuary Partnership (Davis et al. 2006).

LITERATURE CITED

Davis, J.A., F. Hetzel, and J.J. Oram. 2006. PCB Impairment Assessment/Conceptual Model Report. Prepared for the Clean Estuary Partnership.

BUDGET

The estimated budget for this task is \$53,000, all for SFEI labor. The hours allocated for each staff person are indicated below.

	Hours
Jay Davis	120
Don Yee	40
Ben Greenfield	40
Jon Leatherbarrow	120
Lester McKee	40
John Ross	80
Rachel Allen	80