

PRIORITIZATION OF STATUS AND TRENDS MONITORING ELEMENTS

	Program Element	Annual Cost	Priority	RMP Objective Addressed	Comments	Possible Modifications and Cost
Chemistry	Water Chemistry	\$400K	High	Obj. 1 - Limited value for spatial and temporal trends. Obj. 5 - Important for assessment of Water Quality Objectives (WQOs)	Emphasis on water chemistry declining -- focus of TMDLs for PCB and Hg on tissue. Data used for NPDES permits Concentrations of some pollutants greater in the winter	Re-examine power analysis? Possible reduction in number of sites (\$50K to 100K? savings) Reduce number of site by 50% (~\$150K savings) Include winter sampling (\$100K expenditure)? Alternate summer and winter? Re-evaluate analyte list? Reduce frequency of some parameters (e.g., PAHs)? Conduct totals only for PCBs, PAH, and pesticide (\$60K saving)?
	Sediment Chemistry	\$250K	High	Obj. 1 - High value spatial patterns/none for temporal Obj. 2 - High, model endpoint for PCBs Obj. 5 - High, will evaluate Sediment Quality Objectives (SQOs)	Are we getting right amount of spatial data? SQOs to be promulgated in 2007	Reduce/increase number of sites? Do sediment cores instead of surface samples? Re-examine power analysis? Possible reduction in number of sites? Change the analyte list or frequency of analysis of analyte list?
	Bivalve Bioaccumulation	\$125K	High	Obj. 1 - Critical long-term spatial and temporal trends Obj. 2 - Assist in verification of models	Trends since 1980 critical for evaluating PCB management actions Need to maintain historic sites that are consistent with SMW program Need to evaluate impact of delta outflow during the wet season	Go biennial (\$60K savings?) Add back Horseshoe Bay site to provide comparison to State Mussel Watch (SMW)program (~\$13K expenditure) Re-institute wet season deployment at BC10 (Yerba Buena Island) ~ \$13K expenditure Eliminate maintenance cruise (~ \$10K savings) Reduce number of sites?
	Sportfish Bioaccumulation	\$83K	High	Obj. 1 - Important for trends in impairment Obj. 4 - Essential for evaluating human exposure Obj. 5 - Important for screening values and TMDL targets	Most essential impairment indicator for many pollutants	Change the triennial program to a quadrennial or quinquennial, savings of \$20K or \$33K respectively Monitor fewer species (2 major fish, striped bass and croaker, small fish)
Toxicity	Sediment Toxicity	\$90K	High	Obj. 4 - High, indicator of toxicity Obj. 5 - High, SQOs to be promulgated in 2007	Need to incorporate seasonal variability? Do we understand what is causing toxicity? Is this a helpful indicator for managers? Important for non-persistent chemicals	Add a winter sampling component -- alternate dry and wet years? Increase TIEs (expenditure \$20K per test) Reduce number of sites?
	Aquatic Toxicity	\$12K	Low?	Obj. 4 - Low, indicator of toxicity Obj. 5 - Medium, used to evaluate WQOs	Better to look in watersheds where signal is stronger? Conducted every 5 years	Add in other endpoints such as growth and fecundity.
	Episodic Toxicity	\$143K	Medium?	Obj. 3 - Medium, info used to determine sources, pathways and Obj. 4 - Medium, indicator of toxicity Obj. 5 - Medium, used to evaluate WQOs	Dimishing toxicity in recent years Not a trend indicator Important for non-persistent chemicals	Reduce frequency to biennial (\$70K exp.) or triennial program (\$47K exp.)? Include sediment, aquatic toxicity and benthos in an effort to identify impacts. Could include TIEs as well.
USGS Studies	Hydrography and Phytoplankton	\$110K	Medium	Obj. 1- Trends in DO, primary production, turbidity Obj. 5 - High, used to evaluate oxygen WQO	Wetland restoration may impact these parameters Basic information on Bay	Reduce frequency?
	Suspended Sediment	\$250K	High	Obj. 1- Trends in turbidity Obj. 2 - Used to assess models Obj. 3 - Used to develop load calculations Obj. 5 - Used to evaluate narrative WQOs	This program is currently being evaluated by the RMP, USGS, and the US Army Corps of Engineers	
New Studies	Cormorant eggs	\$40K	High	Obj. 1 - Long-term and spatial trends Obj. 4 - Wildlife exposure	High values as a long-term trend indicator for organics	Add to program on biennial basis (\$20K per year)
	Benthos	\$60K	High	Obj. 4 - Effects on benthos Obj. 5 - High, SQOs to be promulgated 2007	Benthic community health to be part of new SQOs	Add to program (\$60K). Would commence in 2007.

RMP Objectives:

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- Objective 1 Describe the distribution and trends of pollutant concentrations in the Estuary
- Objective 2 Project future contaminant status and trends using current understanding of ecosystem processes and human activities
- Objective 3 Describe sources, pathways, and loading of pollutants entering the Estuary
- Objective 4 Measure pollution exposure and effects on selected parts of the Estuary ecosystem (including humans)
- Objective 5 Compare monitoring information to relevant benchmarks, such as TMDL targets, tissue screening levels, water quality objectives, and sediment quality objectives
- Objective 6 Effectively communicate information from a range of sources to present a more complete picture of the sources, distribution, fate, and effects of pollutants and beneficial use attainment or impairment in the Estuary ecosystem.