

**RMP Dioxin Strategy Meeting
September 18th, 2008
San Francisco Estuary Institute
Draft Meeting Minutes**

Attendees:

Bridgette DeShields (Arcadis/WSPA)	Rod Miller (SFPUC/BACWA)
Eric Dunlavey (City of San Jose)	Tom Mumley (SFWQCB)
Tom Hall (South Bay Dischargers (EOA))	Naomi Feger (SFWQCB)
Francois Rodigari (EBMUD/BACWA)	Bill Johnson (SFWQCB)
Luisa Valiela (US EPA)	Susan Klosterhaus (SFEI)
Bhupinder Dhaliwal (CCCSD/BACWA)	Lester McKee (SFEI)
Barbara Baginska (SFWQCB)	John Oram (SFEI)
Kevin Buchan (WSPA)	Meg Sedlak (SFEI)
Jon Konnan (BASMAA)	Don Yee (SFEI)
Michele Pla (BACWA)	Mike Connor (SFEI)

Introductions and Goals of Meeting

Meg Sedlak reviewed the objectives of the meeting which included reaching consensus among key stakeholders on a monitoring strategy that would support management decisions for dioxin by the Regional Board (e.g., TMDL or variances).

Review of Existing Dioxin Data and Background on Existing RMP Monitoring

Susan Klosterhaus reviewed the existing data on dioxins in San Francisco Bay, most of which was reported in the Conceptual Model/Impact Assessment document for dioxins in San Francisco Bay prepared by Connor et al. in 2005. Very little data is available, with the most data available for sport fish tissue. Susan also provided a brief overview of current RMP monitoring program to provide a context for potential opportunities to obtain additional dioxin data by augmenting existing sample collection efforts.

Jon Konnan noted that BASMAA has made addressing dioxins a low priority because dioxin analysis is difficult and expensive and 75% of the dioxin-like toxicity in fish is due to dioxin-like PCBs, which is being addressed through the PCB TMDL. Jon also said that BASMAA is aware that development of a dioxin water quality attainment strategy (WQAS) would increase the likelihood that future municipal wastewater treatment facility NPDES permits will have numeric dioxins limits.

In response to Jon's comments, Tom Mumley agreed that SFRWCB staff did not place dioxins as a high priority during most of the last decade. Staff opposed the original 303(d) listing and until recently did not plan to develop a WQAS such as a TMDL. Tom stated that addressing dioxin-like PCBs through the PCB TMDL would not be sufficient to fully address the dioxins impairment. He added that they found reasonable potential for dioxin and added it to the NPDES permits as a result. Tom believes that a delisting for dioxin would not be feasible and that the best option is to develop a WQAS such as a TMDL. He added that a TMDL is the first step towards a long-term solution because it will improve our understanding of dioxin in the Bay, by

way of more data collection. The key to effective source control will be an understanding of the relative contribution of dioxin loadings. Tom noted that if a WQAS is not developed by local agencies, USEPA would likely develop a TMDL and the local agencies would have relatively little control over the process. He encouraged a collaborative effort among all agencies to resolve the issue since this is an issue beyond the realm of the RMP. Tom noted that Regional Board staff chose not to include dioxin provision in the Municipal Regional Permit (MRP) but that could change in future versions if there is not progress on moving towards the development of a dioxin WQAS. Jon noted that since dioxin-related activities won't help with MRP compliance it is difficult for BASMAA agencies to place a high priority on WQAS. However, BASMAA recognizes that BACWA may need to consider accepting some reasonable level of additional dioxin-related monitoring through the RMP. Jon stated that he could not give BASMAA's buy-in to a scope and budget at today's meeting and noted that BASMAA agency budgets are very uncertain while the MRP is still being negotiated.

It was generally agreed that the dioxin issue for the Bay needs to involve more than the RMP for several reasons including the limited financial resources of the RMP. Tom Mumley, Michele Pla, and Mike Connor plan to discuss options for a collaborative, regional strategy with EPA and CARB. Luisa Valiela noted that the EPA's dioxin re-assessment remains uncertain.

Questions and Strategy Overview

Susan Klosterhaus presented the proposed questions that the strategy will attempt to answer and an overview of a proposed data collection strategy for the next five years. She solicited feedback and consensus on the questions and asked for input on questions considered to be of highest priority by the group.

The proposed strategy questions were:

1. Are the beneficial uses of the Bay impaired by dioxins?
2. What is the spatial pattern of dioxin impairment?
3. What is the dioxin reservoir in Bay sediments and water?
4. Have dioxin loadings/concentrations changed over time?
5. What is the relative contribution of each loading pathway as a source of dioxin impairment in the Bay?
6. What future impairment is predicted for dioxins in the Bay?

The group agreed that addressing questions #3 and #5 should receive the highest priority and that question #2 was a lower priority question. Question #3 would help determine if erosion of sediments would expose sediment beneath the surface that contain higher concentrations of dioxins and whether or not this is a significant pathway compared to other external loading pathways. Question #5 would provide information on the relative loadings of dioxin from external pathways (e.g. stormwater runoff vs. atmospheric deposition). Answers to questions #3, #4, and #5 are needed to answer #6. The group agreed that these six questions captured the information needs and should be included in the strategy.

It was pointed out that difficulties with analytical QA/QC are anticipated. For example, some results are likely to be estimated concentrations (J-flagged). Michele Pla and Rod Miller stressed that they would like to conduct a review of data collection and management methods so that the strategy is consistent with National Functional Guidelines. Bhupinder Dhaliwal and Rod Miller also stressed the need for a laboratory calibration process to insure the data is the best quality possible.

Sampling Design Elements

A short overview of each sampling design element and its relevance to the questions was presented by SFEI staff. Feedback on each sampling element was solicited. Sampling elements included tributary loadings, Bay surface water, sediment cores, surface sediment, sport fish, bird eggs, atmospheric deposition, a one-box model, and a foodweb model.

Sport fish

There was concern over whether shiner surfperch and white croaker are the appropriate species to focus on in the strategy. Tom Mumley commented that it has been established that many people eat shiner surfperch. While many people catch striped bass, these are relatively low in dioxin. Michele Pla requested an evaluation of the use of additional species.

Bird eggs

Tom Mumley indicated that bird eggs were not a high priority, but it would be good to keep them in the strategy and to evaluate at some future point whether they should be included. The RMP will continue to collect egg samples for the archives to support future analyses.

Surface sediment

Tom Mumley and Michele Pla suggested analyzing surface sediment every year. This information is needed to calculate bioaccumulation factors for the fish. It was generally agreed to analyze surface sediment every year from 2008-2011 and to re-evaluate whether or not to continue analysis when that is complete. Sediments will be collected for the archives for potential future analysis of dioxin.

Surface water

The group agreed that surface water should be analyzed in 2009 and 2011.

Sediment cores

Mike Connor recommended that we analyze the wetland cores rather than the in-bay cores to address the atmospheric deposition component. Meg noted that the RMP plans to collect cores every few years. The group agreed to analyze the current set of cores for dioxin and re-evaluate the need for future core data based on the first round of results.

Small tributaries

Jon K. mentioned the need for small tributary loading work to coordinate with the Small Tributaries Loading Strategy that is under development. It was generally agreed to proceed with the 2009 plan and re-evaluate the need for future analysis based on the first year results.

Atmospheric deposition

Jon K said that understanding dioxin loading via atmospheric deposition is a priority for BASMAA. This would include understanding how much of the stormwater load is due to deposition onto local watersheds. A need was expressed to increase the budget for this component to obtain a better estimate. Tom Mumley noted that the updated estimate is not likely to be smaller than the previous estimate; it may perhaps be larger. SFEI will work with CARB to develop an updated estimate of dioxin deposition to the Bay using CARB ambient air data and any other information available. Michele Pla indicated that BACWA may be able to contribute \$75,000-\$150,000; however this is dependent on the completion of the multi-box model (June 2009 at the earliest). Mike Connor suggested working on a grant proposal to do a larger, more in-depth study.

Food web model

It was agreed by the group that the foodweb model development should be pushed back to 2010 or later when more data has been acquired.

One-box model

It was agreed by the group that the one-box model development should be pushed back to 2010 or later when more data has been acquired.

QA/QC Inter-laboratory Comparison

Francois Rodigari and Bhupinder Dhaliwal stated that it is important to determine how data variability will affect data quality. Francois noted that an inter-lab comparison exercise will cost more than the \$25,000 currently allotted for this component. SFEI will work with the BACWA lab committee to determine the appropriate steps for addressing this issue.

Budget and Funding

The proposed budget for the five year strategy was ~\$750,000 or about ~\$150,000/year. Approximately \$114,000 of RMP funds have already tentatively been reserved in 2008 to implement most of year one of the strategy by adding dioxin analysis to existing surface sediment collection and sediment core samples recently collected as part of the work to develop the PCB TMDL. However, funding for the 2009 work is \$120,000 short of the proposed amount needed. Budgeting for 2010 and beyond will be discussed at a future date. The group recognized that the scope of the proposed strategy is likely too extensive to be funded solely through the RMP. Tom Mumley stated that the proposed strategy does not include all of the tasks necessary to fully develop a WQAS. Michele Pla indicated BACWA might be willing to provide some supplemental funding (\$75,000-\$150,000), but would prefer to see funding via USEPA grants. Luisa V. noted that federal grant money cannot be used for TMDL development. Mike Connor suggested development of a grant strategy with a larger group such as the EPA. Other potential funding sources discussed included Caltrans and remaining Clean Estuary Partnership funds.

The group agreed to reconvene in a year or so to evaluate new dioxin data and review the status of developing the dioxin WQAS/TMDL. Mike Connor suggested meeting with EPA (perhaps Alexis Strauss) and BACWA to develop a grant proposal strategy.