

**Delta Mercury Control Program  
Mercury Exposure Reduction Program Strategy  
15 November 2012 Final Document**

**Introduction, Purpose, and Use of this Document**

In 2005, the State Water Resources Control Board directed the San Francisco and Central Valley Water Board to address the public health impacts of mercury in fish. In response, the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) requires all entities subject to controlling methylmercury in the Delta and Yolo Bypass to participate in a program to reduce human exposure to mercury through eating fish.

The Basin Plan requires the Central Valley Regional Water Quality Control Board (Regional Water Board) staff, working with dischargers and other stakeholders, to complete a Mercury Exposure Reduction Program (MERP) Strategy (Strategy) by 20 October 2012. As described in the Basin Plan, the purposes of this Strategy are to:

- recommend to the Executive Officer how dischargers will be responsible for participating in an MERP,
- identify performance measures, and
- propose a collaborative process for developing, funding, and implementing the MERP.

Dischargers, either individually or collectively, or based on this Strategy, are required to submit a MERP work plan to the Executive Officer by 20 October 2013. This Strategy provides recommendations and outlines interim steps to ensure an acceptable work plan is developed and presented to the Executive Officer in October 2013. Board staff will assist the dischargers and stakeholders in developing the work plan.

This Strategy is designed to be flexible with recommendations to assist the dischargers and other stakeholders in forming and funding the program. The dischargers may use all or parts of this Strategy, but are not required to follow it. This Strategy suggests one method of proportional cost sharing among the various entities identified in the Basin Plan subject to the methylmercury requirements.

This Strategy provides an example exposure reduction program and general estimate of program costs. Specific exposure reduction activity descriptions and detailed cost estimates will be determined through discussions with community groups and other stakeholders and included in the work plan.

This Strategy recognizes the California Department of Public Health (CDPH) is the most appropriate agency to develop and manage this program. However, state budget reductions and other CDPH priorities may limit CDPH's involvement in this program. Board staff and management will continue to work with CPDH to solicit their involvement. So that the dischargers remain in compliance with the Basin Plan, this Strategy contains recommendations to retain a non-agency health consultant if CPDH is not able to fully meet the needs of the program.

This Strategy was developed with recommendations from Regional Water Board Staff, an assessment of stakeholder concerns and needs for the Strategy, and input gathered from three stakeholder meetings held between June and October 2012.

## Section 1 – Exposure Reduction Program Goals

Cleanup of mercury in the Sacramento-San Joaquin Delta is the long-term goal of State and local regulatory agencies. However, activities are needed in the interim to address the possible health risks to consumers of Delta fish. The primary goals of the MERP are to increase understanding of fish contamination issues and reduce exposure to mercury in fish from the Delta. MERP activities are intended to benefit those that eat Delta fish in excess of fish consumption advisory levels and/or are members of sensitive groups, including pregnant and nursing women, women who may become pregnant, and children.

As described in the Basin Plan, the MERP must include elements directed toward:

- Developing and implementing community-driven activities to reduce mercury exposure;
- Raising awareness of fish contamination issues among people and communities most likely affected by mercury in Delta-caught fish such as subsistence fishers and their families;
- Integrating community-based organizations that serve Delta fish consumers, tribes, and public health agencies in the design and implementation of an exposure reduction program;
- Identifying resources, as needed, for community-based organizations and tribes to participate in the Program;
- Utilizing and expanding upon existing programs and materials or activities in place to reduce mercury, and as needed, create new materials or activities; and
- Developing measures for program effectiveness.

The MERP will utilize and build upon experiences of a previous exposure reduction effort in the Delta, the CALFED-funded Fish Mercury Project (FMP) in the Delta, 2005-2008.<sup>1</sup> The FMP was a multi-faceted effort that involved community members in identifying fishing locations and fish species of interest for monitoring, designing and evaluating of advisories and messages about fish contamination, and outreach activities. Since the Delta FMP, the Office of Environmental Health Hazard Assessment (OEHHA) has completed revised safe eating guidelines that cover all of the Delta and anadromous fish. Because of FMP efforts, there are organizations and individuals in the Delta well aware of fish contamination concerns and populations at risk. Messages, signs, and training developed during the FMP will need to be updated and redistributed.

The Delta MERP will also use models and lessons learned from other exposure reduction activities. Resources include the 2010-2012 San Francisco Bay Fish Mercury Project<sup>2</sup>, education through health clinics in the Sierras, and the Palos Verdes area Fish Contamination Education Collaborative<sup>3</sup>. In addition, the State Water Board maintains a statewide database of contaminants in fish that can aid message development. Fish contaminant data are available to the public on a website that is searchable by desired fishing area<sup>4</sup>.

In addition to the Basin Plan directions, goals for MERP activities voiced by stakeholders during development of this Strategy included:

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<sup>1</sup> <http://www.sfei.org/cmr/fishmercury/>

<sup>2</sup> <http://www.sfei.org/sfbfp>

<sup>3</sup> <http://www.pvsfish.org/>

<sup>4</sup> [http://www.waterboards.ca.gov/mywaterquality/safe\\_to\\_eat/index.shtml](http://www.waterboards.ca.gov/mywaterquality/safe_to_eat/index.shtml)

- Build on past activities in the Delta and San Francisco Bay;
- Create activities and messages that are sustainable beyond the life of the MERP (example: train health and service providers who can give information to clients on an continuing basis);
- Include messages that encourage consumers to change behavior delivered by those trusted by consumers and their communities; and
- Recognize that because adverse health effects of mercury are often not obvious, basic information about the potential health impacts may need to be communicated.

## **Section 2 – Work Plan Development and Components**

The MERP work plan is due to the Central Valley Water Boards' Executive Officer by 20 October 2013. The work plan will be deemed complete and dischargers in compliance with the Basin Plan when the Executive Officer approves the work plan. One work plan describing all initial MERP administrative, program framework, and funding activities is preferable to multiple work plans for several reasons, including:

- More effective coordination between individual dischargers to provide a comprehensive MERP for the entire Delta region;
- Minimized overlap between activities developed in a common area of the Delta;
- Increased consistency of exposure reduction messages throughout the region

It is not a requirement that each discharger be involved in developing the work plan. It may be efficient for dischargers to identify representatives to lead work plan development on behalf of other dischargers and work with the MERP administrator and the public health lead.

At the October 2012 meeting, staff and stakeholders agreed to form a workgroup to develop the work plan. Staff anticipates convening the workgroup for its first meeting before the end of the year. Suggested participants include staff from the Regional Water Board and CDPH and representatives of dischargers. Interested, non-discharger stakeholders will be invited to participate in the workgroup.

### Organizational Report

A first step in developing a MERP work plan is to further identify its funding and administrative process. Staff recommends that responsible entities prepare an organizational report describing funding and resource commitments and an organizational and administrative framework. Staff recommends that the organizational report identify the following:

- A MERP administrator, responsible for collecting and disbursing all MERP fees (see also Section 4.8).
- Approximate estimates of the minimum levels of staff resources that CDPH and OEHHA could contribute to MERP and steps necessary to engage other public health expertise. If CDPH does not have the resources or staff to coordinate or implement MERP activities, Regional Water Board and dischargers will work with the administrator to select a public health consultant to fulfill the health expert role.
- The approximate level of funding required for the MERP. This Strategy provides an example funding level that can be adjusted during further stakeholder discussions.
- Discharger participation and commitment. Commitment to and compliance with the MERP could take the form of a memorandum of agreement (MOA), individual commitment letters from the discharger community, or other mechanism as needed. By

**1 May 2013** dischargers will need to provide funding commitment letters to the Regional Water Board.

To allow sufficient time for developing the program work plan, the organizational report should be completed by **30 May 2013**.

At a minimum, the work plan should address the elements in Section 1 and the following:

- Tasks descriptions for program administration, coordination with stakeholders, exposure reduction activities, and program evaluation;
- Goals, implementation steps, and performance measures for each task;
- Identification of any contracting needs with statements of work and contracting schedules;
- Anticipated costs and budget;
- Deliverables and time schedule.

This Strategy emphasizes discharger coordination and development of a common MERP work plan; however, dischargers have the option to implement individual exposure reduction activities, which are subject to individual approval by the Executive Officer. An individual work plan must address all Delta MERP elements listed in Section 1 and will be expected to meaningfully contribute to exposure reduction in the Delta. Individual work plans must follow the same schedule for submission and start of implementation and involve fish consumers, Tribes, and community organizations as described in the Basin Plan. In addition, individual plans must be coordinated with group plans to avoid redundancy, conflicts and overlap.

#### Program Schedule

Staff has outlined an example of a six-year period of MERP activity, from early 2014 through the end of 2019 (see Appendix A). Levels of activity are expected to vary during that period. Because fish mercury levels are not expected to change measurably during Phase 1 of the Delta Mercury Control Program, continuing exposure reduction efforts are needed to protect consumers. Members of the Central Valley Water Board and the Executive Officer support the presence of some exposure reduction effort while water quality objectives are unattained. The ending of the proposed six-year period will coincide with Central Valley Water Board's review of the entire mercury control program in 2020. Details of duration of the MERP and necessary levels of activity will be reviewed with stakeholders for the work plan.

Ultimately, the Basin Plan requires dischargers to participate in the MERP until they comply with all requirements listed in the Basin Plan related to their individual or subarea methylmercury allocation (including the Basin Plan Phase 1 methylmercury study requirements). Further needs for the program and how it should continue will be part of the entire program review.

The Basin Plan requires that every three years after work plan implementation begins dischargers provide a progress report to the Executive Officer. After every three years, the MERP should be assessed with respect to effectiveness and further exposure reduction needs. Staff's cost estimates includes time and resources for report preparation (see Appendix A).

## **Section 3 – Collaborative Stakeholder Process**

Stakeholder input is vital for the successful development and implementation of the MERP. Stakeholders will be involved in multiple stages: Strategy and work plan development, MERP implementation, MERP evaluation. This section will focus on work plan development and MERP implementation. MERP evaluation methods will be determined in subsequent work plan(s).

### **3.1 Initial Discharger Collaboration**

The Basin Plan assigns Delta and Yolo Bypass dischargers the responsibilities to participate in the ERP and submit work plan(s) for exposure reduction activities. Regional Water Board staff will assist stakeholders as needed after October 2012 to develop the MERP work plan, but work plan discussions and development should be largely self-convened by the discharger community.

Dischargers are required to provide good-faith opportunities to integrate community-based organizations, Tribes, and Delta fish consumers into development of the work plan and implementation of activities. Delta community-based organizations, Tribes, and anglers or others who represent local fish consumers should be asked if and how they would like to participate in the work plan development. Regional Water Board and/or CDPH staff will assist with this process when appropriate or necessary.

### **3.2 Future Collaboration: Stakeholder Advisory Group**

Success of MERP activities will require collaboration between dischargers, the MERP administrator (described below), and other stakeholders such as county health departments, subsistence fishers, community groups, tribes, and marina/park operators. Public outreach, education, and other activities to promote behavioral change are most successful when recipients of the risk reduction efforts are involved in planning and implementation. A stakeholder advisory group (SAG) or similar group could be convened to participate in development and implementation of a MERP work plan. A SAG or similar group would provide recommendations on MERP activities and implementation methods.

## **Section 4 – Potential MERP Participants and Responsibilities**

The following organizations/interests are likely participants in the MERP process. The intent of this section is to describe briefly the ways that entities are required or may be involved in the MERP. The descriptions are not intended to be comprehensive, but are provided to facilitate involvement of all potential resources and contributors.

### **4.1 Dischargers**

All entities that are assigned responsibility for achieving methylmercury allocations in the Delta and Yolo Bypass are required to participate in the MERP (Appendix B).

Dischargers may participate in development of the MERP work plan(s) directly or through a representative as discussed in Section 2.1. For example, dischargers may work through a contractor or leadership or form a workgroup to fulfill the participation requirements. For most

dischargers, participation will be in the form of a financial or equivalent-resource contribution to fund exposure reduction activities and administration.

The Basin Plan directs that community representatives, Tribes, and fish consumers be provided good-faith opportunities to work with dischargers and staff to develop work plan(s) and implement MERP activities. While dischargers are expected to be willing to work with and integrate the ideas and efforts of community representatives, Tribes, and fish consumers into MERP work plan(s), it is recognized that dischargers cannot be held responsible for ensuring this type of stakeholder participation.

#### **4.2 Tribal Nations**

Following the California Tribal Policy, all federally and non-federally recognized Tribes are invited to participate in the MERP. Tribes with current and/or historical interest in the Delta and Yolo Bypass are particularly encouraged to be involved in the MERP. Staff and the stakeholders can work with the State Board's Tribal liaison to facilitate Tribal involvement.

#### **4.3 Community Based Organizations (CBOs) and Consumers**

Community-based organizations, fish consumers, anglers, angler organizations and other community representatives with an interest in reducing exposure to pollutants in fish are invited to participate in the MERP. These groups and individuals will play a vital role in the program. They should work closely with staff and dischargers to develop the work plan and to implement MERP activities. Community organizations are recognized as key sources of information about how to reach at-risk consumers. Appendix E contains an initial list of potential participants.

#### **4.4 Central Valley Regional Water Quality Control Board**

Central Valley Water Board staff assumed the responsibility of writing this Strategy utilizing stakeholder comment and input. Staff will provide assistance to dischargers and stakeholders to develop the organizational report, work plan, and implement the MERP. The Central Valley Water Board's Executive Officer is tasked with approving the MERP work plan(s). Annually, staff will report the progress of the MERP to Central Valley Water Board members.

#### **4.5 Public Health Agencies**

Public health agencies include CDPH, OEHHA, and local/county public health offices from the Delta Counties (Yolo, Sacramento, Solano, Contra Costa, and San Joaquin).

For the program to be the most efficient and effective, CDPH and OEHHA are the preferred entities to provide training, technical guidance, and general support throughout the MERP. The local agencies will be contacted to participate in MERP and coordinate activities at the local level. Contracting with County public health departments may be appropriate for on-the-ground MERP activities throughout the Delta. Specific roles will be based on the availability of funding and MERP activities.

#### **4.6 Health Care and Social Service Providers**

Social service and health care providers, and nutrition programs can be involved in the MERP through providing education and risk intervention activities to their at-risk clients. Many programs and providers would need training to be able to conduct exposure reduction activities.

#### **4.7 Parks and Marinas**

Managers of fishing locations, including public parks and boat launches and private marina operators are sources of information about fishing site use. These entities would need to grant permission for posting signs on their property and could be asked to assist with posting.

#### **4.8 Program Administrator**

The program administrator is a single individual or entity responsible for the management of the MERP. The administrator will be primarily responsible for collecting fees from funding sources and disbursing funding to approved projects, and would also develop participation agreements with the program coordinator (see Section 4.9), hire staff to work with the program coordinator, and contract with other organizations to develop outreach materials. Regional Board staff will select the program administrator, in consultation with dischargers and stakeholders involved in development of the work plan.

Because disbursing funds through a State agency can be cumbersome, staff recommends that a third-party administrative organization manage funds collected under the program. The third-party must be a non-profit organization. The program administrator will not direct the activities of the health agencies or the stakeholder advisory group.

A similar approach has been successfully used for the San Francisco Bay Fish Project. In that circumstance, dischargers contributed money to a joint powers authority (The Aquatic Science Center), which then administered the program. An administrator for the MERP has not been selected. Currently, the Aquatic Science Center (ASC) is a viable candidate for the Delta MERP because of its experience with the San Francisco Bay program.

#### **4.9 Health Educator/Coordinator**

Public health experts should provide MERP coordination and guidance for MERP activities. As the primary state public health agencies, CDPH and OEHHA are preferred for this role. CDPH and OEHHA have the ability to work across jurisdictional boundaries within the Delta and have established standing in affected communities on issues of public health. Regional Water Board staff does not have the same level of expertise on the issue of mercury exposure reduction and is not suitable for this role. Specifically, CDPH/OEHAA could:

- Act as advisors to the SAG or other successor collaborative effort;
- Provide trainings for a variety of exposure reduction topics;
- Guide the design of effective communication tools for exposure reduction outreach;
- Help identify effective methods to build capacity for community groups to engage in exposure reduction.

An option is to have an MOA between CDPH/OEHHA and the Regional Water Board developed as part of the MERP work plan process discussed in Section 2 to solidify program coordinator roles and responsibilities. If CDPH and/or OEHHA are unable to function as program coordinator, the Regional Water Board and dischargers should work with the program administrator to contract with a non-agency public health expert.

## **Section 5 – Proportional Responsibilities and MERP Funding**

The Basin Plan states that the Strategy “shall take into account the proportional share of methylmercury contributed by individual dischargers”. This section describes one approach and the rationale to apportion proportional responsibilities and funding requirements.

This Strategy recommends a cooperative approach to obtaining contributions to the MERP. Staff does not anticipate assigning specific contribution amounts within permits, discharge requirements, or other enforcement documents unless cooperative approaches are unsuccessful. To avoid the need for the Regional Water Board to establish specific monetary or equivalent contribution requirements, dischargers must be proactive about bringing forth their commitment to participate and developing a participation agreement specifying their contribution. This approach is similar to that followed in the San Francisco Bay Region, in that watershed-wide permits required participation but did not define contribution amounts. Subsequent to adoption of the watershed permits, San Francisco Bay area dischargers worked with the San Francisco Bay Water Board and CDPH to identify potential program costs and mechanisms for funding.

A goal for this Strategy is to ensure that there are sufficient resources for public health expertise. The recommended staffing level for the program should be about 1.25 full time equivalents per year for the first two years of the program, drawing down to less than 0.5 in the last three years. CDPH staff is willing to participate. However, at this time, CDPH does not have resources to commit a full-time staff person and the agency’s future funding is uncertain. CDPH personnel involved in the San Francisco Bay project have told Regional Water Board staff that the amount of effort that CDPH expended on the San Francisco Bay program is not repeatable unless additional staff resources are provided to CDPH. Therefore, additional public health expertise may be acquired through one or more of these methods: a) State agencies provide resources to CDPH to allow CDPH to dedicate more staff time, b) use of contributed funds to hire a non-agency individual with public health experience (see Section 4.9), and c) utilizing graduate-level public health trainees (see Section 5.4). Trainee assistance should not be depended upon, but could reduce costs to dischargers.

Board staff and management are continuing to coordinate with the State agencies to establish commitments for agency participation (this could include in-kind services, providing personnel-year authority to CDPH, and/or financial contributions). Once established, agency participation will be documented in the MERP work plan(s) and progress reports.

### **5.1 Proportional Responsibilities**

Table 1 in Appendix B proposes proportional responsibility based methylmercury loads contained in the 2010 TMDL staff report. Table 1 identifies specific dischargers, agricultural coalitions, and state and federal agency participation. Following the table is an explanation about the information and assumptions used to estimate proportional loads.

### **5.2 Funding Estimates**

Cost estimates for an example Delta MERP are shown in Appendix A. For comparison with the San Francisco Bay FMP, see Appendix D. The potential costs and program described are intended as a starting place for discussion and can be modified during work plan development. It is difficult to answer the question, “How much money is needed to fully reduce health risks and exposure to mercury among Delta fish consumers?” Staff took the approach of estimating

costs based on efforts needed to update and extend Delta exposure reduction efforts that occurred during the 2005-2008 Fish Mercury Project. Staff assumed that an initial period of significant activity would be followed by time to review and adjust or maintain efforts. It is expected that the costs would be highest in the first two years of the program and would decline thereafter.

In addition to proportional responsibilities, Table 1 suggests a method to determine the level of financial contributions for each of the dischargers identified in the table. The annual financial contribution for each entity is the percent of methylmercury load multiplied by the recommended dollar amount to annually fund the exposure reduction program. The notes after Table 1 describe assumptions for the funding values.

The last three columns of Appendix B Table 1 show examples of individual entity contributions to attain funding levels of between \$67,000 and \$268,000 per year. The minimum dollar amount for the smaller dischargers is \$500 and \$1000, respectively. Amounts are rounded to the nearest \$50. A minimum amount is suggested in order to have a program that is meaningful (e.g., a \$20 share is not enough to support a MERP activity). The benefit of the coordinated approach is to collect enough funds to have a meaningful program to benefit the maximum number of fish consumers at a reasonable cost to the dischargers. If a discharger elects not to participate, it is likely that the cost to implement an individual program would be well in excess of the \$500 and \$1000 example minimums.

Future dischargers can be added to Table 1 when identified.

Tributary methylmercury loads are a significant portion of the loads to the Delta. Table 1 does not include tributary loads. Upstream dischargers are not expected to contribute to the Delta MERP (likewise Delta dischargers would not be expected to contribute to tributary programs). A similar proportional distribution and cost sharing program could be developed for upstream dischargers as the upstream TMDLs are completed (e.g., percent of program funding directly related to methylmercury loads and a minimum participation level). The focus of the upstream MERP programs would be on those fish consumers consuming fish in the tributaries.

These funding levels are examples to provide dischargers with a sense of financial resources that may be required. Actual amounts would be proportional to the needs determined by the program participants. Table 1 could be adjusted as necessary once a work plan is established.

### **5.3 In-Kind Funding Options**

Additionally, some entities have requested that in-kind support be acceptable *in lieu* of direct contributions. Some agencies have offered services for the MERP, such as graphic design and printing or incorporation of exposure reduction information into existing outreach activities. In some cases, a single organization may be both a discharger and asked to implement activities. For example, a county may be a 'paying' member for the MERP as a discharger of storm water, while at the same time the county's environmental health department maybe participating in implementing exposure reduction activities.

In-kind services are permissible, but would need to be directly supportive of "on the ground" MERP activities in order to be credited towards the overall participation requirement. Criteria for identifying acceptable in-kind effort and mechanisms to record credit will require definition in the work plan.

## **5.4 Supplemental Funding Opportunities**

Regional Water Board staff will continue to seek other funding and funding-match opportunities for the MERP. Initial efforts will focus on funding opportunities in State government, such as contract funds, grants, and Supplemental Environmental Projects. If entities responsible for participating in the MERP or other stakeholders seek outside grant funding to support the program, Regional Water Board staff will support those efforts as much as possible.

CDPH has identified some possibilities for obtaining staff support. Trainees who have obtained or are in the process of earning a Master in Public Health (MPH) degree would be mentored by CDPH while engaging directly in a public health project. Regional Water Board staff will coordinate with CDPH to pursue these possibilities. The earlier Delta FMP employed the assistance of a MPH placed through a Centers for Disease Control fellowship training program.

## **5.5 Expectations After Initial Work Plan**

The Basin Plan requires dischargers to participate in the MERP until they comply with all requirements listed in the Basin Plan related to their individual or subarea methylmercury allocation (including the Basin Plan Phase 1 methylmercury study requirements). During the MERP activity period, staff will seek opportunities to integrate future Delta MERP activities with San Francisco Bay efforts to create a more regional program and/or any broader efforts that develop as a result of the statewide mercury policy currently under development. In the event that the State Water Board adopts a program that duplicates or supersedes the MERP requirements in the Central Valley Water Board's Basin Plan, staff will propose for Board consideration amendments to the Basin Plan to resend the MERP.

## **Section 6 – Performance Measures and Program Evaluation**

The MERP will need to track (1) participation in the program and (2) the progress and effectiveness of exposure reduction activities. The Basin Plan directed that the MERP Strategy contain metrics or performance measures. Performance measures for MERP participation by dischargers are described below. Because specific exposure reduction activities have not been selected at this time, this Strategy provides a general description of program performance measures. Specific exposure reduction activities and metrics tailored to each activity will be developed for the work plan.

### **6.1 Discharger Performance Metrics**

This sub section describes the specific performance metrics to determine whether or not dischargers are meeting the Basin Plan requirements. At a minimum, the Basin Plan requires that within-Delta dischargers participate in the MERP. As described in Section 5, Regional Water Board permits will reference the requirements in the Basin Plan but will not likely include specific participation or funding requirements.

Discharger compliance will be determined by (1) adequate contribution of funding or in-kind participation as described in Section 5 of this Strategy, (2) direct or indirect development and implementation of MERP work plan approved by the Water Board's Executive Officer, and (3) progress reports to the Water Board (see Appendix C).

Discharger compliance is not tied to any performance metrics of on-the-ground MERP activities or results. Performance metrics developed for MERP activities will be used to inform stakeholders and adjust activities as needed to improve effectiveness.

## **6.2 Performance Metrics for MERP Activities**

Evaluating the effectiveness of an exposure reduction activity could include evaluating the following:

- a) whether the message is reaching at risk consumers;
- b) whether the message is understood; and
- c) whether consumers would consider changing behavior based on knowledge acquired.

For example, metrics could include quantifying number of participants and events, number of signs or postings, number of projects funded through community based organizations, number of health professionals trained, and/or whether fish consumers' knowledge of advisory content improved. The work plan will describe performance metrics in detail. The San Francisco Bay FMP implemented a specific plan of evaluations for each type of activity. Similar evaluation plans can be used in the Delta MERP.

## **Section 7- Overall MERP Timeline**

<b>ITEM</b>	<b>DUE DATE</b>
<b><u>MERP Organizational Reports</u></b> Organizational reports describe discharger and other State agencies' funding and administrative commitments. *	30 May 2013
<b><u>MERP Work Plan</u></b> The work plan will include specific implementation tasks, budget, and funding commitments and will be developed collaboratively with stakeholders.	20 October 2013 [Work group meetings for work plan development to be scheduled]
<b><u>MERP Work Plan Implementation</u></b> The Basin Plan requires dischargers to implement the work plan six months after its completion and approval by the Regional Water Board Executive Officer.	20 April 2014
<b><u>MERP Work Plan Implementation Progress Report #1</u></b> Every three years from the initial implementation date onward, dischargers and/or the third party administrator are required to provide progress reports to the Regional Water Board.	20 April 2017

\* Dischargers should provide funding and participation commitments no later than **1 May 2013** so that the MERP work plan can be completed by October 2013. Regional Water Board staff recognizes that implementation of MERP work plan activities may need to be phased, depending on availability of funding. Regional Water Board staff encourages prioritization of activities in the work plan.

## Appendix A: Regional Water Board Staff Example Proposal for Delta MERP Activities, Costs and Timeline

Note: "community members" is used below to include any non-discharger group that may be involved in MERP activity, including community-based organizations, Tribes, clinics, county public health, and angler representatives.

Line item	Total annual cost (inc. CDPH staff)	Description	Annual cost to non-CDPH participants
<b>2 year intensive period: Feb 2014 - Jan 2016</b>			
Anticipated CDPH 0.25 PY/yr	\$35,000		
Other health expert staff 1 PY/yr	\$140,000	Duties: assess needs, convene stakeholder advisory group, lead development and testing of materials, identify sign locations and arrange posting, arrange trainings, assist community members in determining how to integrate message into their work; evaluate activities.	
Activity per year	\$100,000	Year 1 - work w/ community members and other stakeholders, design sign and materials, post, start trainings. Year 2 - trainings, support community members or health provider to integrate message into their activities.	
Project management (~10% of non-CDPH)	\$25,000	Program administrator to manage program and contracts	
<b>Total</b>	<b>\$300,000</b>		<b>\$265,000</b>
<b>1 year wrap-up from intensive period- evaluation, reporting, review &amp; planning: Feb 2016 - Jan 2017</b>			
Anticipated CDPH 0.25 PY/yr	\$35,000		
Other health expert staff 0.75 PY/yr	\$105,000	Involve community members in evaluation, next steps, review, assist with grant application and other funding request to augment program; prepare progress report	
Activity per year	\$10,000	Community members stipends, possibly a training, allow community members to stay involved in process	
Project management (~10% of non-CDPH)	\$11,500	Program administrator to manage program and contracts	
	\$161,500		\$126,500
<b>3 year continuation: Feb 2017- Jan 2020 (duration flexible; could continue for 2 year and end in Jan. 2019 )</b>			
Anticipated CDPH 0.1 PY	\$14,000		
Other health expert staff 0.25 py	\$35,000	Coordinate maintenance activities, review past activities, maintain contact w/ community members, recommend next steps, prepare second progress report	

Maintenance/continuation activities	\$25,000	Continuation activities such as training 1-3/year (new or refresher), revisit organizations or health providers that received previous training, replace signs and materials and/or other activity as needed	
Project management (~10% of non-CDPH)	\$6,000	Program administrator to manage program and contracts	
	\$80,000		\$66,000

**Notes:**

**PY** = personnel year. 1 PY = one person working full time for one year

**Anticipated CDPH** = rough estimate of staff time that CDPH could commit to MERP with existing resources.

Regional Water Board staff recognizes that overall, CDPH ability to participate is uncertain. CDPH has stated an interest and willingness to help, but the agency does not currently have sufficient staff resources to lead or supply all personnel needs for MERP. MERP may need to proceed with only non-agency staff (for example, a MPH hired to run the program)

**Other health expert staff** = person(s) with public health and/or outreach experience who will coordinate implementation and act as implementation "lead". This position can be filled by CDPH if CDPH receives more resources. Otherwise, staff with appropriate expertise is expected to be hired through the MERP administrator.

Regional Water Board and OEHHA will contribute staff time in addition to the personnel time shown above.

**The total cost for 6 years excluding anticipated CDPH staff time is \$854,500. Expressed as an average, the total, annual discharger cost is \$142,400.**

**APPENDIX B**

**TABLE 1 Proportional MeHg Loads and Examples of MERP Annual Costs**

	MeHg load/yr (grams)	% of Total Load	Annual \$ *	Annual \$ **	Annual \$ ***
<b>Agricultural Drainage</b>					
Sacramento Valley Coalition	53.3	2.44%	\$ 1,350	\$ 4,900	\$ 6,000
SJ County & Delta Coalition	68.0	3.11%	\$ 1,700	\$ 6,200	\$ 7,600
Rice Commission	1.7	0.08%	\$ 500	\$ 1,000	\$ 1,000
<b>Open Water, Flood Plain</b>					
DWR (a)	170	7.80%	\$ 4,300	\$ 15,600	\$ 19,100
CVFPB	170	7.80%	\$ 4,300	\$ 15,600	\$ 19,100
SLC	170	7.80%	\$ 4,300	\$ 15,600	\$ 19,100
USBR	170	7.80%	\$ 4,300	\$ 15,600	\$ 19,100
USACOE	170	7.80%	\$ 4,300	\$ 15,600	\$ 19,100
<b>Wetland Habitats</b>					
USFWS/USBLM	59.2	2.71%	\$ 1,500	\$ 5,400	\$ 6,650
DFG	320	14.63%	\$ 8,050	\$ 29,250	\$ 35,850
DWR	160	7.32%	\$ 4,000	\$ 14,650	\$ 17,950
SLC	53.3	2.44%	\$ 1,350	\$ 4,900	\$ 6,000
Local	49.4	2.26%	\$ 1,250	\$ 4,500	\$ 5,550
Conservancy	19.7	0.90%	\$ 500	\$ 1,800	\$ 2,200
Private	326	14.91%	\$ 8,200	\$ 29,800	\$ 36,500
Brentwood WWTP	0.086	0.00%	\$ 500	\$ 1,000	\$ 1,000
Contra Costa (County of)	5.15	0.24%	\$ 500	\$ 1,000	\$ 1,000
Davis WWTP	0.78	0.04%	\$ 500	\$ 1,000	\$ 1,000
Deuel Vocational Institute WWTP	0.013	0.00%	\$ 500	\$ 1,000	\$ 1,000
Discovery Bay WWTP	0.37	0.02%	\$ 500	\$ 1,000	\$ 1,000
Ironhouse Sanitation District	0.03	0.00%	\$ 500	\$ 1,000	\$ 1,000
Lathrop (City of)	0.27	0.01%	\$ 500	\$ 1,000	\$ 1,000
Lodi (City of)	0.053	0.00%	\$ 500	\$ 1,000	\$ 1,000
Lodi White Slough WWTP	0.94	0.04%	\$ 500	\$ 1,000	\$ 1,000
Manteca WWTP	1.4	0.06%	\$ 500	\$ 1,000	\$ 1,000
Mountain House CSD WWTP	0.37	0.02%	\$ 500	\$ 1,000	\$ 1,000
Oakwood Lake Subdivision Mining Reclamation	0.38	0.02%	\$ 500	\$ 1,000	\$ 1,000
Port of Stockton MS4	0.4	0.02%	\$ 500	\$ 1,000	\$ 1,000
Rio Vista (City of)	0.014	0.00%	\$ 500	\$ 1,000	\$ 1,000
Rio Vista Beach and Northwest WWTPs	0.1041	0.00%	\$ 500	\$ 1,000	\$ 1,000
Sacramento Area MS4	1.8	0.08%	\$ 500	\$ 1,000	\$ 1,000
Sacramento Combined WWTP	0.95	0.04%	\$ 500	\$ 1,000	\$ 1,000
San Joaquin (County of)	3.0	0.14%	\$ 500	\$ 1,000	\$ 1,000
Solano (County of)	0.158	0.01%	\$ 500	\$ 1,000	\$ 1,000
SRCS D Sacramento River WWTP	161	7.37%	\$ 4,050	\$ 14,750	\$ 18,050

Stockton Area MS4	4.1	0.19%	\$ 500	\$ 1,000	\$ 1,000
Stockton WWTP	36	1.65%	\$ 900	\$ 3,300	\$ 4,050
Tracy (City of)	1.8	0.08%	\$ 500	\$ 1,000	\$ 1,000
Tracy WWTP	1.8	0.08%	\$ 500	\$ 1,000	\$ 1,000
West Sacramento (City of)	1.75	0.08%	\$ 500	\$ 1,000	\$ 1,000
Woodland WWTP	0.25	0.01%	\$ 500	\$ 1,000	\$ 1,000
Yolo (County of)	0.403	0.02%	\$ 500	\$ 1,000	\$ 1,000
Totals	2186	100.0%	\$ 67,350	\$ 223,450	\$ 267,900

(a) The DWR share accounts for the agency's responsibilities for flood control and water supply.

**TABLE 1 Notes: Proportional MeHg Loads and Examples of MERP Annual Costs -Explanation and Assumptions for Amounts Provided in Table 1**

\* **Maintenance**- Example annual \$ based on multiplying % of total load by \$55,000, with a minimum of \$500 per discharger. This example amount for the lower end of the cost range assumes that a lower level of activities can maintain effectiveness after an initial, intensive period of activity.

\*\* **Wrap-up and Review of Initial Work** – Example annual \$ based on multiplying % of total load by \$200,000, with a minimum of \$1,000 per discharger. This example amount describes a possible “year 3” of MERP to complete program evaluations, review, and plan next steps. Health expert staff would lead the review, meet with stakeholders for evaluations and planning, and prepare final reports.

\*\*\* **Initial Activity**- Example annual \$ based on multiplying % of total load by \$245,000, with a minimum of \$1,000 per discharger. This example amount for the upper end of the cost range based on cash contributions of about \$265,000 to pay for activities and a full-time public health consultant to manage the MERP. It assumes contributions of time from CDPH and OEHHA based on their existing resources.

1. Methylmercury (MeHg) loads- based on 2010 TMDL staff report, WY 2000-2003. Tables 8.4a to 8.4g, available at [http://www.waterboards.ca.gov/centralvalley/water\\_issues/tmdl/central\\_valley\\_projects/delta\\_hg/april\\_2010\\_hg\\_tmdl\\_hearing/apr2010\\_tmdl\\_staffrpt\\_final.pdf](http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/delta_hg/april_2010_hg_tmdl_hearing/apr2010_tmdl_staffrpt_final.pdf)
2. % proportionality = methylmercury load / total methylmercury load
3. Irrigated Ag Coalitions MeHg loads proportioned between 3 coalitions based on % acreage in Delta and Yolo Bypass based on land use data for TMDL period
  - a. Ag runoff: Sacramento Valley WQC, 43%; San Joaquin - Delta WQC 55%; Rice Coalition 1.4%
4. The following sources are not included in % distribution:
  - a. Atmospheric deposition (22/5220= 0.4%)

- b. Urban runoff from areas not under MS4 permit ( $0.8/5220= 0.01\%$ )
  - c. Cooling facilities (GWF, water passes through)
  - d. Mirant Delta LLC Contra Costa Power Plant (no longer discharges)
  - e. Oakwood Lake Mining Subdivision permit was rescinded in Feb 2011 (no longer discharges).
  - f. Metropolitan Stevedore (no discharge)
  - g. Lincoln Center Groundwater Treatment Facility (non-detect MeHg in ground water treatment)
5. When the TMDL was developed, there were no load estimates for Ironhouse and Mountain House, so MeHg load is set equal to allocation.
  6. Wetlands are part of the irrigated agriculture coalitions. The table separates agricultural drainage and wetlands.
  7. Estimated proportions for federal, state and other wetlands based on GIS acreage coverages and estimates from maps: USBLM and USFWS 6%; DFG 33%; DWR 16%; SLC 5%; local 5%; conservancy 2%; private 33%.
  8. Open water proportions are divided evenly among the state and federal agencies.
  9. Annual dollar amounts are rounded to the nearest \$50.

## **APPENDIX C: Three Year Review Report**

Every three years upon completion of the initial work plan(s), MERP dischargers will develop a progress report on all MERP activities completed to date. The progress report will be submitted to the Regional Water Board. At a minimum, the progress report will include the following information:

- An overview MERP activity conducted during the previous three year period, including a summary of MERP expenditures and performance evaluations of individual exposure reduction projects;
- A review of stakeholder outreach activities conducted during the previous three years including meeting dates and links to any stakeholder-developed activities;
- A discussion of proposed or desired exposure reduction activities for the following three year period, including budget estimates and needs for these activities based on the best available knowledge.

## Appendix D: San Francisco Bay Fish Project Example

Descriptions of funding, management and outcomes of the 2010-2012 San Francisco Bay Fish Project (SFBFP) are provided as a resource. Some anglers report that they fish in the Delta and San Francisco Bay. Some fish species are common to both regions as well. The Delta MERP will utilize information and experience gained from the SFBFP, as well as its organizational framework, as much as possible. Differences in funding available for the Delta MERP, particularly current limitations of CDPH's staff resources, may require that the levels of management provided by CDPH and a third-party vary from the SFBFP model.

San Francisco Bay Fish Project 201--2012 Revenue:

Bay Area Stormwater Management Agencies Association (paid via USEPA grant)	\$100,000
Bay Area Clean Water Agencies (municipal wastewater)	\$100,000
Industrial and refinery dischargers	\$ 90,000
CDPH (provided as in kind; approx. 2 full time staff for 2 year + some printing of materials)	\$515,000
OEHHA (provided as in-kind)	\$ 75,000
Total	\$880,000

The SFBFP was conducted to comply with San Francisco Bay Mercury TMDL's requirement that point source dischargers participate in a program to reduce fish consumers' exposure to mercury and PCBs. CDPH led the program and provided technical guidance, training, facilitation of the Stakeholder Advisory Group, and direction for program activities. The direct monetary contributions were paid to a third party, Aquatic Sciences Center, which then administered the funds. Direct monetary contributions supported projects conducted by four community-based organizations (\$100,000 total for projects selected through a competitive award process) and a project manager/health educator who worked with the community organizations. Community-based projects focused primarily on outreach and education about contamination risks and choices for healthy fish consumption. CDPH assisted community organizations in developing materials, training personnel involved in the outreach activities, and designing and implementing metrics for project evaluation. OEHHA's most recent fish consumption guidelines were the basis for design of fishing location signs, kiosk posters, and brochures

Involving community stakeholders and training their personnel achieved a goal of building capacity within the funded groups. However, engaging community stakeholders and managing the grant projects required significant time investment. Representatives of non-profit organizations received small stipends for their participation in meetings.

Funding amounts for the San Francisco Bay project were determined after consideration of the cost of a meaningful program and potential availability of funds.

The San Francisco Bay Fish Project undertook these tasks:

1. Conduct Needs Assessment to learn stakeholders' interest and ability to participate and past exposure reduction efforts
2. Convene and facilitate meetings of Stakeholder Advisory Group
3. Develop and translate educational materials
4. Develop, field test, and post consumption guidance sign at fishing locations
5. Fund and support community-based projects
6. Provide training and technical assistance to community-based organizations and others (e.g., health and social service providers and parks staff)
7. Evaluate and report accomplishments of all activities

The San Francisco Bay project achieved the following outcomes:

- A Stakeholder Advisory Group formed and met seven times between Dec. 2010 and June 2012. Eleven community-based organizations and eleven non-discharger local agencies attended one or more meetings.
- New educational materials developed included: four-panel brochure and poster based with summary of OEHHA's safe eating guidelines, "Fish Smart" sign for fishing locations, coloring book for kids, and 90-second educational video. Brochures were produced in eleven languages with initial printing of >20,000 by CDPH. "Fish Smart" sign for fishing locations contains visual images and a small amount of text in three languages. Educational video is in English and shows members of four community groups describing the safe eating guidelines.
- Sites were identified posting of the "Fish Smart" signs at fishing locations was begun. As of August 2012, 54 signs were posted at 34 locations. CDPH is continuing to work with counties and other groups to post at even more locations.
- Four community-based organizations each received between \$21,000 and \$26,000 for projects of their own design. Recipients were selected through a competitive application process. Community organizations received training and technical assistance for their activities, which involved primarily education, outreach, and training. Each organization evaluated participation and outcomes (such as increased knowledge about fish contamination) against goals set for the project.

Regional Water Board staff recommendations for Delta MERP in comparison with San Francisco Bay Fish Project tasks:

- The Delta MERP needs assessment may not need to be extensive. A MERP needs assessment would involve contacting community-based organizations, angler representatives, and other stakeholders to ascertain gaps remaining from previous exposure reduction work and their levels of interest in and barriers to participation.
- Input from non-discharger stakeholders is essential. Frequency and extent of meetings with local stakeholders may be flexible and can be determined at the beginning of MERP activities.

- Although some educational materials, including signs, were developed as part of the 2005-2007 Delta Fish Mercury Project, those materials do not reflect OEHHA's recent, more comprehensive safe eating guidelines.
- CDPH staff note that enabling those that have direct contact with fish consumers (e.g., community-based resource providers and health clinic staff) to transmit messages about safe fish consumption is the activity most likely to have a sustained impact. These local entities and organizations need training, technical assistance and financial support to integrate exposure reduction into their mission and programs.
- The Delta MERP should be similar to the exposure reduction program in San Francisco Bay. Actual activities and products may be different, depending on stakeholder interest and availability of resources.
- Regional Water Board staff recommends that the Delta MERP consider an initial focus on: a) training and building capacity among those having direct contact with at-risk fish consumers and anglers and b) updating and posting signs at fishing locations.

## **Appendix E: Initial List of Community-Based Organizations**

The following is a list of community-based and environmental justice organizations that have participated in the Calfed-funded Delta Fish Mercury Project (2005-2008), the planning process for the Delta Mercury TMDL, and/or have been referred to Central Valley Water Board staff as potential MERP participants. It is neither exclusive nor a complete identification of organizations that might have interest in the Delta MERP.

All Positives Possible (Sacramento)  
Asian Pacific Environmental Network  
California Indian Environmental Alliance  
Center for Environmental Health  
EcoVillage Farm Learning Center  
Environmental Justice Coalition for Water  
Indian People Organizing for Change and Chochenyo Ohlone Tribe  
Lao Family Community of Sacramento  
Lao Family Community of Stockton  
Lao Khmu Association  
Ma'at Youth Academy  
Slavic Assistance Center, Sacramento  
Native American health centers  
People for Children's Health and Environmental Justice  
Southeast Asian Assistance Center  
Todos Unidos  
United Cambodian Families  
United Lu Mien  
Vietnamese Voluntary Foundation