

STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT (Naomi Feger)  
MEETING DATE: August 14, 2013

ITEM: **5D**

SUBJECT: **Total Maximum Daily Load (TMDL) Program Update** – Status Report on the TMDL Program in our Region and the Water Board’s Efforts to Attain Standards in Impaired Waters

DISCUSSION: This item provides an informational status report on the Board’s TMDL program, which comprises 8.6 positions within the Board’s Planning Division. TMDLs are action plans to restore clean water. Section 303(d) of the federal Clean Water Act requires that states identify water bodies -- bays, rivers, streams, creeks, and coastal areas -- that do not meet water quality standards and identify the pollutants that cause the impairment. The list of impaired water bodies is often referred to as the “303(d) list.” TMDLs examine the water quality problem, identify sources of pollutants, and specify actions that create solutions. They are adopted by the Board as amendments to our Region's Basin Plan, which means they are regulatory actions, subject to review and approval by the State Water Board and the State Office of Administrative Law. In addition, USEPA must also approve our TMDLs.

This report includes a brief summary of the process involved in adopting and implementing TMDLs, our efforts to date in the Region to complete TMDLs, our program priorities for this coming year, the longer term program strategy, and a discussion of how TMDL implementation influences the work conducted by all Board programs.

**Overview of the TMDL Development and Implementation Process**

Within our Region, the current 303(d) list adopted by the State Water Board in 2010 includes more than 300 listings in 88 water bodies. Board staff is currently developing TMDL projects to address more than 130 of these listings. One TMDL may address multiple listings; for example, the Diazinon Urban Creeks Pesticide Toxicity TMDL addressed more than 30 impaired creeks.

The essential components of each TMDL include:

- Numeric target(s) that define the desired or “restored” condition of the water body
- A determination of the maximum amount of pollutant(s) or stressor(s) the water body can tolerate while meeting these targets

- Identification of the sources and loads of the pollutant(s) reaching the water body
- A linkage analysis relating pollutant loads to numeric targets
- Allocations of pollutant loads or load reduction responsibility to these sources
- An implementation plan for regulatory and other actions to achieve allocations and the TMDL.

For each TMDL, we prepare a project definition and plan that defines the water quality problem the project is addressing, and identifies information needs, key issues, and our approach to completing each of the required elements. The project plan includes consideration of stakeholder participation and input. The timeline and level of effort for TMDL development depends on staff and contract resources, available data, and the complexity of the impairment. By their nature, TMDLs address some of the more difficult, problematic water quality problems in the Region and thus can require significant resources to complete and to implement.

The implementation plan for each TMDL details the actions required, responsible parties, and time schedule for achieving pollutant load reductions and water quality improvements. Implementation actions identified in the TMDL are generally incorporated into NPDES permits, waste discharge requirements (general or individual), or conditional waivers of waste discharge requirements. They may also be achieved through the actions of various responsible or cooperating agencies including federal, State, and local agencies. A key element of TMDLs is adaptive management, which means taking actions commensurate with our current state of knowledge while gathering new information that may cause us to reconsider the regulatory elements of the TMDL and the implementation actions required to restore water quality over time.

### **TMDL Program Priorities – Short and Long-Term**

*TMDL Development* - Our strategy for developing TMDLs has been to identify high priority watersheds and develop a TMDL for each pollutant listing, building an integrated implementation strategy that accounts for all listed pollutants in the watershed. Since the Board's TMDL program inception, about thirteen years ago, the Board has adopted 12 TMDLs, addressing 83 pollutant-water body combinations (Appendix A includes a list of adopted TMDLs). The main focus of these TMDLs has been protection and restoration of water quality in San Francisco Bay, and the Tomales Bay, Napa River, Sonoma Creek and Guadalupe River watersheds. The pollutant focus has been mercury, PCBs, pesticides, bacteria, and sediment. All of these TMDLs focus on the protection of multiple beneficial uses, including aquatic life, wildlife and human health. Our sediment TMDLs have focused on restoring beneficial uses that support native fisheries.

As the TMDL program has matured, we have been able to apply the lessons learned from our adopted TMDLs as we develop new TMDLs. One continual focus of the program is how to be more efficient in addressing our Region's

impairment listings. Most of our TMDLs have addressed only one pollutant. One way to be more efficient is to address multiple pollutants in a single TMDL, as we are currently doing with the Suisun Marsh TMDL. Another approach is the development of TMDLs or statewide policies that address multiple listings. For example, our San Francisco Bay Beaches TMDL that is in progress will address seven listings for pathogens at beaches in one TMDL. Another example is the evolving Statewide Mercury in Reservoirs Policy that will address all the State's impairment listings for mercury in reservoirs, including more than 10 impairment listings in our Region. We are using our Region's staff resources and mercury expertise in collaboration with other regions and the State Water Board to develop the Statewide Mercury Policy. This effort is expected to address the impairment of reservoirs by mercury from sources including historic mining discharges, high natural concentrations in local geology, and atmospheric deposition. Another approach that is more efficient is to address an impairment via a single regulatory action, such as a Site Cleanup Requirements Order, NPDES permit, or enforcement order, as we have done for the Castro Cove contaminated sediment hotspot.

Appendix A identifies our program plan priorities for the next five years, based on our current level of funding. During the 2012 triennial review of the Basin Plan, brought to the Board last November, we put forward a list of high priority TMDLs to be adopted as Basin Plan amendments over the next three years. One of those TMDLs, the San Pedro Creek and Pacifica Beach Bacteria TMDL was adopted in 2012 and was approved recently by USEPA. Over the next three years, we expect to ask the Board to consider the following TMDLs:

- Sediment in Lagunitas Creek in Marin County;
- Dissolved oxygen, nutrients, and mercury in Suisun Marsh in Solano County;
- Sediment in Butano and Pescadero Creeks in San Mateo County;
- Selenium in the North San Francisco Bay;
- Bacteria at San Francisco Bay Beaches;
- Sediment in Walker Creek in Marin County; and
- A contaminated sediment hotspot in Oakland Inner Harbor, at the Pacific Drydock facility.

The Lagunitas Creek TMDL is the only TMDL we expect to bring before the Board for consideration this fiscal year.

During the next five years, we will continue to focus TMDL development on impairments in San Francisco Bay with a particular focus on Bay Beaches and contaminated sediment hotspots. In addition, while we plan on developing TMDLs and implementing them in our high priority watersheds in Marin, Napa and Sonoma over the next few years, we also plan on focusing more of our resources on impairments in San Mateo County.

In some cases, early implementation actions, watershed restoration, or implementation actions associated with TMDLs adopted for other pollutants in the same water body, may address the impairment without having to develop a TMDL. In these cases, staff will propose to delist, or remove, the pollutant-water body combination from the 303(d) list. Appendix A identifies a number of possible pollutant-water body combinations that we anticipate bringing before the Board to consider for delisting. Some of these proposed delistings are supported by data collected by our Surface Water Ambient Monitoring Program (SWAMP). We continue to leverage our SWAMP resources where possible to better support both TMDL development and post-implementation monitoring.

*TMDL Implementation* - Effective implementation relies on ongoing relationships between our staff and stakeholders, dischargers, and other responsible parties. As the Board adopts more TMDLs, the level of staff effort dedicated to TMDL implementation must increase. That is particularly true as the Board increasingly provides regulatory oversight in the nonpoint source area, working with farmers, ranchers, vintners, and others with whom the Board has not regulated in the past. The shift to implementation impacts our ability to develop new TMDLs and continues to raise issues about which divisions within the Board should take the lead on implementing the various components of each TMDL to maturity. With static program budgets, this challenge is expected to become more significant over time. Managing this issue requires, in part, relying on coordination and integration with our core regulatory programs, including the NPDES wastewater, NPDES stormwater, and nonpoint source programs, as well as developing and maintaining cooperative and productive relationships with the regulated community and other stakeholders.

Key implementation actions taken by the Board to address TMDL requirements have included the issuance of the Municipal Regional Stormwater Permit in 2009, issuance of the first Conditional Waiver of Waste Discharge Requirements for grazing lands in Tomales Bay in 2008, the extension of the grazing waiver to the Napa River and Sonoma Creek watersheds in 2011, and the Mercury and PCBs NPDES Watershed Permit initially adopted in 2007. In addition, the Board's nonpoint source program (also overseen by the Planning Division) continues to carry a significant workload focused on TMDL implementation, despite only 2.5 positions this fiscal year. This program includes overseeing about sixteen Clean Water Act section 319 grants that implement adopted TMDLs. Appendix B identifies a number of these key actions and illustrates the cross-program nature of the work involved in implementing TMDLs. Item 5E of the August Board meeting agenda is a detailed example of the status of implementation of one specific TMDL, the San Francisco Bay PCBs TMDL.

**RECOMMENDATION:** This item is for information only and no action is required.

**APPENDICES:**

- A. SF Bay Region TMDL Program Plan – 5 Year Outlook, dated July 1, 2013
- B. Table of Regulatory Actions Completed or In Progress to Implement TMDLs

**Appendix A - SF Bay Region TMDL Program Plan – 5 Year Outlook - July 1, 2013**

Project	Listings	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18
<b>San Francisco Bay &amp; Delta</b>						
San Francisco Bay Selenium (North Bay)	5	Staff Report	Board Action	Implementation	Implementation	Implementation
Suisun Marsh Metals, Nutrients, & DO	3	Project Report	Board Action	Implementation	Implementation	Implementation
San Francisco Bay Beaches Bacteria	4	Monitoring & Analyses	Project Report	Board Action	Implementation	Implementation
Oakland Inner Harbor Pacific Dry Dock Hotspot	14	Project Definition and Plan	Monitoring & Analyses	Board Action-Possible Delisting		
San Francisco Bay Dioxins/Furans	24	Monitoring & Analyses by RMP	Monitoring & Analyses by RMP	Conceptual Model/ Impairment Assessment	Project Report	Board Action
Mission Creek Toxic Hotspot	12		Project Definition and Plan	Monitoring & Analyses by RMP	Project Report	Board Action
San Leandro Bay Toxic Hotspot	6			Project Definition and Plan	Monitoring & Analyses by RMP	Project Report
<b>San Mateo/Santa Clara – Bayside and Coast</b>						
Butano and Pescadero Creeks Sediment	2	Project Report	Board Action	Implementation	Implementation	Implementation
Permanente Creek Selenium	1	Monitoring & Analyses	Project Report	Board Action	Implementation	Implementation
San Francisquito Creek Sediment	1		Monitoring & Analyses	Project Report	Board Action	Implementation
San Mateo Coastal Basin Pathogens, Fitzgerald Marine Reserve	3	Project Definition and Plan	Monitoring & Analyses	Project Report	Board Action	Implementation
San Gregorio Creek Sediment	1	Project Definition	Monitoring & Analyses	Monitoring & Analyses	Project Report	Board Action
Stevens Creek Toxicity	1	Project Definition and Plan	Monitoring & Analyses	Monitoring & Analyses	Project Report	Board Action
<b>Marin</b>						
Lagunitas Creek Sediment	1	Board Action	Implementation	Implementation	Implementation	Implementation

Project	Listings	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18
Walker Creek Sediment	1	Data Analysis/ Project Plan	Project Report	Board Action	Implementation	Implementation
<b>Sonoma</b>						
Petaluma River Nutrients, Pathogens, and Sediment	3	Project Definition and Plan	Monitoring & Analyses	Monitoring & Analyses	Project Report	Board Action
<b>Statewide Projects</b>						
Mercury in SF Bay Region Reservoirs	10	Project Report (Policy)	State Board Action	Implementation	Implementation	Implementation
<b>Delistings or Add Listings to Existing TMDL</b>						
<b>Delistings (number of waterbodies)</b> Castro Cove Toxic Hot Spot (1) Muir Beach (1) Napa River Nutrients (1) Sonoma Creek Nutrients (1) San Francisco Bay Legacy Pesticides (43)			<b>Delistings (Cont'd)</b> Tomales Bay Nutrients (1) Tomales Bay Sediment (1) <b>Add Listings to Tomales Bay Pathogen TMDL</b> Tomales Bay Beaches (4)			

<b>List of Completed TMDLs in Implementation Phase</b>	
<b>Completed TMDLs</b>	<b>Regional Water Board Adoption Date</b>
SF Urban Creek Diazinon/ Urban Creek Pesticides	2005
Tomales Bay Pathogens	2005
SF Bay Mercury	2006
Sonoma Creek Pathogens Napa River Pathogens	2006
Walker Creek Mercury	2007
Richardson Bay Pathogens	2008
Guadalupe River Watershed Mercury	2008
Sonoma Creek Sediment	2008
SF Bay PCBs	2009
Napa River Sediment	2009
San Pedro Creek and Pacifica Bacteria	2012
Tomales Bay Mercury	2012

**Appendix B – Table of Regulatory Actions Completed or In Progress to Implement TMDLs**

<b>Oversight Division(s)/ Program</b>	<b>TMDL</b>	<b>Regulatory Actions (development timeframe)</b>
Planning/ Nonpoint Source	Napa River/Sonoma Creek Sediment	Waste Discharge Requirements (WDRs) for Vineyards (anticipated Board consideration in 2014)
	Napa River/Sonoma Creek Pathogens & Sediment	Conditional Waiver of WDRs for Grazing Lands in the Napa River and Sonoma Creek Watersheds (adopted 2011)
	Tomales Bay Sediment and Pathogen TMDLs	Conditional Waiver of WDRs for Grazing Lands in Tomales Bay Watershed (renewal for Board consideration in 2013/14)
Planning & Watershed	Napa River, Sonoma Creek, Tomales Bay, San Mateo – San Pedro Creek and Pacifica Beach Pathogen and Sediment TMDLs	Confined Animal Facility General WDRs and Waiver of WDRs (Regionwide) (reissuance for Board consideration in 2013/14)
Planning & Watershed/ - Stormwater	San Francisco Bay Mercury and PCBs TMDLs and the Urban Creeks Pesticide TMDL	Municipal Regional Stormwater Permit (MRP) (reissuance for Board consideration in 2014)
NPDES	San Francisco Bay Mercury and PCBs TMDLs	NPDES Watershed Permit for Municipal and Industrial Wastewater discharges of Mercury and PCBs to San Francisco Bay (reissued 2011)
Planning & Groundwater	Guadalupe River Mercury Watershed TMDL	Site Cleanup Requirements (SCRs) for the Guadalupe Rubbish Disposal Company (adopted 2013)
Toxics	San Francisco Bay PCBs TMDL	SCRs for cleanup sites – evaluation of potential for discharge to stormwater conveyance systems (ongoing)
Watershed & Groundwater	San Francisco Bay Mercury TMDL	WDRs or 401 Water Quality Certifications for wetland restoration projects – inclusion of mercury monitoring and control requirements (ongoing)