



# SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD

## CLEAN WATER ACT SECTIONS 303(d) AND 305(b) 2016 INTEGRATED REPORT FOR THE SAN FRANCISCO BAY REGION

### STAFF REPORT

*February 2017*



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

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## List of Acronyms and Abbreviations

Basin Plan	Regional Water Quality Control Plan
BPTCP	Bay Protection and Toxic Cleanup Program
BMI	Benthic Macro Invertebrates
CalWQA	California Water Quality Assessment (database)
CCAMP	Central Coast Ambient Monitoring Program
CCC	Criteria Continuous Concentration
CCR	California Code of Regulations
CDPH	California Department of Public Health
CFR	Code of Federal Regulations
CMC	Criteria Maximum Concentration
CTR	California Toxics Rule
CWA	Clean Water Act
°C	degrees Celsius
°F	degrees Fahrenheit
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DFW	Department of Fish and Wildlife, formerly Department of Fish and Game (DFG)
DO	Dissolved oxygen
dw	dry weight
ERM	Effects Range Median
HCH	Hexachlorocyclohexane
HSA	Hydrologic Sub Area
HU	Hydrologic Unit
IBI	Index of Biological Integrity
ILRP	Irrigated Lands Regulatory Program
IR	Integrated Report
kg	kilogram(s)
Listing Policy	Water Quality Control Policy for Developing California's section 303(d) List
LOE	Line of Evidence
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg/kg	milligrams per kilogram (parts per million)
mg/L	milligrams per liter (parts per million)
µg/g	micrograms per gram (parts per million)
µg/L	micrograms per liter (parts per billion)
MTBE	Methyl tertiary-butyl ether
MTRL	Maximum Tissue Residue Level
NAS	National Academy of Sciences
ng/g	nanograms per gram (parts per billion)
ng/L	nanograms per liter (parts per trillion)

NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
oc	organic carbon
OEHHA	Office of Environmental Health Hazard Assessment
PAH	Polynuclear aromatic hydrocarbon
PBDE	Polybrominated diphenyl ethers
PCB	Polychlorinated biphenyl
PEL	Probable Effects Level
pg/L	picograms per liter
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RBI	Relative Benthic Index
RL	Reporting Level
SFEI	San Francisco Estuary Institute
SMWP	State Mussel Watch Program
SQG	Sediment quality guideline
SWAMP	Surface Water Ambient Monitoring Program
TDS	Total Dissolved Solids
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TSMP	Toxic Substance Monitoring Program
TSS	Total Suspended Solids
U.S. EPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
WDR	Waste Discharge Requirement
WQO	Water quality objective
WQS	Water quality standard
ww	wet weight

## Introduction

The federal Clean Water Act (CWA) gives states the primary responsibility for protecting and restoring surface water quality. In California, the State Water Resources Control Board (State Water Board) and nine Regional Water Quality Control Boards (Regional Water Boards), collectively referred to as the California Water Boards, serve as the agencies with the primary responsibility for implementing CWA requirements. One such responsibility includes developing and implementing programs to ensure attainment of water quality standards. Water quality standards, pursuant to the CWA, consist of designated beneficial uses of waterbodies and criteria or objectives (numeric and narrative) which are protective of those beneficial uses.

Section 305(b) of the CWA requires each state to report biennially to the United States Environmental Protection Agency (U.S. EPA) on the water quality conditions of its surface waters. U.S. EPA compiles these assessments into their biennial “National Water Quality Inventory Report” to Congress. CWA section 303(d) requires each state to develop, update, and submit to the U.S. EPA for approval, a list of waterbodies not meeting water quality standards. 40 Code of Federal Regulations (CFR) section 130.7(d)(1) requires each state to submit the list biennially. This list is commonly referred to as the “303(d) list” or the “List of Impaired Waters.” Waterbodies placed on the 303(d) list must be addressed through the development of Total Maximum Daily Loads (TMDLs), or an existing regulatory program that is reasonably expected to result in the attainment of the water quality standard within a specified timeframe.

In conformance with U.S. EPA guidance (U.S. EPA, 2005), the State and Regional Water Quality Control Boards prepare a single Integrated Report that meets the reporting requirements of CWA sections 303(d) and 305(b). The San Francisco Bay Regional Water Quality Control Board is responsible for developing and adopting the Integrated Report for waters within the San Francisco Bay Region. This staff report provides background on the assessment process and summarizes Regional Water Board staff’s recommended updates to the California 303(d) list and 305(b) report.

## Water Quality Assessment

The water quality assessment process begins with the solicitation and evaluation of data collected from the monitoring activities in the region. The data are analyzed to determine if a waterbody is meeting or exceeding water quality standards. The determination of whether water quality standards are being met is determined by comparing data to objectives, criteria, and guidelines (protective limits). This analysis forms the basis of 303(d) and 305(b) assessments. Whether or not these protective limits are exceeded determines the ability of a waterbody to support its assigned beneficial uses and whether to recommend listing, or not listing, the waterbody-pollutant combination on the 303(d) list.

## The Listing Policy

Recommendations to place a waterbody on the 303(d) list are made in conformance with the [Water Quality Control Policy for Developing California’s Clean Water Act section](#)

[303\(d\) List](#), commonly referred to as the Listing Policy (State Board, 2004). The Listing Policy establishes a standardized approach for developing California's section 303(d) list. It outlines an approach that provides the rules for making listing decisions based upon different types of data and establishes a systematic framework for statistical analysis of water quality data. The Listing Policy also establishes requirements for data quality, data quantity, and administration of the listing process. Listing and delisting factors are provided for chemical-specific water quality standards; bacterial water quality standards; health advisories; bioaccumulation of chemicals in aquatic life tissues; nuisance such as trash, odor, and foam; nutrients; water and sediment toxicity; adverse biological response; degradation of aquatic life populations and communities; trends in water quality; and weight of evidence.

The Listing Policy requires the water quality assessments and listing decisions for specific waterbody-pollutant combinations to be documented in waterbody "fact sheets". Fact sheets consist of "lines of evidence" (LOEs) summarizing the applicable standards and the data for a waterbody in relation to a specific beneficial use. Staff then recommends "decisions" regarding listing based on beneficial use support. The fact sheets supporting the 2016 Integrated Report for waters in the San Francisco Bay Region are provided in appendix G.

### **Changes to California's Integrated Report Process**

On June 14, 2013, State Water Board management met with U.S. EPA Division of Water Quality management to discuss strategies to create a more efficient and timely Integrated Report preparation process. The strategy agreed upon divides the nine Regional Water Boards into three groups. As proposed, each group of three Regional Boards will submit an Integrated Report in one of the three successive two-year cycles (see Table 1). If this Integrated Report schedule is completed as proposed, our Regional Board would again be "on-cycle" to develop and approve its next Integrated Report in 2022. The last time we came to the Regional Water Board with recommendations for 303(d) listings was for the 2010 Integrated Report (R2-2009-0008).

The State Water Board anticipates that the six Regional Water Boards that are "off-cycle" during each two-year Integrated Report cycle will still have an opportunity to assess new "high-priority" data and make new listing/delisting decisions. Following adoption by the "off-cycle" Regional Water Board, the new listing/delisting decisions will be transmitted to the State Water Board for approval and inclusion with the "on-cycle" Integrated Report. We intend to initiate a few "off-cycle" decisions in 2018 including requesting State Board Approval for the two previous delistings for Napa River and Sonoma Creek for nutrients (Resolution R2-2014-0006). We cannot include these delistings during the 2016 cycle because the data supporting the decision to delist became available after the end of the data solicitation period for the 2016 cycle.

**Table 1: Integrated Report Schedule**

<b>Year</b>	<b>Regional Boards</b>
2018	North Coast (Region 1) Lahontan (Region 6) Colorado Basin (Region 7)
2020	Central Coast (Region 3) Central Valley (Region 5) San Diego (Region 9)
2022	<b>San Francisco Bay (Region 2)</b> Los Angeles (Region 4) Santa Ana (Region 8)

### **Data Solicitation**

The State Water Board solicited data from the public with a formal “[Notice of Public Solicitation of Water Quality Data and Information for the California Integrated Report](#)” sent to interested parties subscribed to the [Integrated Report e-mailing list](#). Data used as part of the 2016 Integrated Report were received from January 14, 2010 through August 30, 2010. The majority of these submitted data were collected between the end of the previous cycle’s solicitation period (February 8, 2007) and August 2010 but could have also included data collected prior to previous assessment cycles but not previously submitted for assessment. Data sources include government agencies, municipalities, environmental groups, citizen groups, and receiving water data from the National Pollutant Discharge Elimination System (NPDES) dischargers. Data collected by the Regional and State Water Boards under the Surface Water Ambient Monitoring Program (SWAMP), the San Francisco Bay Regional Monitoring Program, and a variety of county health agencies provided the majority of the data used to develop and revise fact sheets for the 2016 Integrated Report. The State Water Board has already issued a [data solicitation](#) (ending May 3, 2017) for the next listing cycle inviting submission of all data collected since the end of the previous solicitation period (August 2010).

All data and information submitted will be part of the electronic administrative record compiled after the Regional Board public process is completed. Data and information pertaining to specific waterbody-pollutant assessments are provided as hypertext linkages in the fact sheets (appendix G) and also accessible from the hyperlinks in appendix I.

### **Data Processing and Analysis**

All readily available data received within the data solicitation period were considered in the development of the 2016 Integrated Report. However, only high-quality data supported by a quality assurance project plan were used to make determinations of water quality standards attainment. In the absence of quality assurance documentation, data were used only as supporting evidence and is not the basis of a listing decision.



Fact sheets and overall beneficial use support determinations were developed in the California Water Quality Assessment (CalWQA) database. Lines of evidence summarize monitoring results from the data and document information pertaining to where and when the water quality monitoring took place, the pollutant sampled, the beneficial use affected, the water quality objective or guideline protective of the beneficial use, the number of samples collected, and how many samples exceeded the objective or guideline. Potential sources are only identified in fact sheets when a specific source analysis has been performed as part of a TMDL or other regulatory process. Otherwise, the potential source was marked “source unknown”.

Data were aggregated by waterbody following the requirements of section 6.1.5.4 of the Listing Policy, and assessments were performed on the individual segments. Waterbodies were segmented to account for hydrologic features. Some waterbodies may have been re-segmented, split into additional segments, or had a modification to the waterbody name since the last 303(d) list was approved. These and other non-substantive modifications (i.e., modifications that did not change a listing status) are summarized in the miscellaneous changes report (appendix H).

Spatial and temporal representation of data was assessed using the requirements and guidance of the Listing Policy. The available data were used to represent concentrations during the averaging period associated with the particular pollutant and water quality objective, as required by section 6.1.5.6 of the Listing Policy.

Following data assessment, Regional Water Board staff determined whether or not the waterbody was attaining relevant water quality standards. Decision recommendations were completed to summarize all relevant LOEs for a waterbody-pollutant combination and, based on statistical evaluation described in the Listing Policy, state if the number of exceedances constitutes a 303(d) listing.

### **Water Quality Standards Used in the Data Assessment**

Beneficial uses for waters in the San Francisco Bay Region are identified in [Table 2-1](#) of the San Francisco Bay Regional Water Quality Control Plan (Basin Plan). If beneficial uses were not identified for a waterbody in the Basin Plan, but it is determined that the use exists in the waterbody, then the waterbody was assessed for the existing uses of the water.

Water Board staff assessed data using regulatory limits when available. The most common regulatory limits used include water quality objectives in the Basin Plan or any statewide Water Quality Control Plans applicable to the waterbody, and criteria for toxic chemicals promulgated by the U.S. EPA under the California Toxics Rule (40 C.F.R. §131.27). When numeric regulatory limits were not available, evaluation guidelines were used to interpret narrative water quality objectives. Evaluation guidelines are selected in conformance with section 6.1.3 of the Listing Policy. When evaluating narrative water quality objectives or beneficial use protection, the Regional Water Boards and the State Water Board identify evaluation guidelines that represent standards attainment or beneficial use protection. The guidelines are not water quality objectives and are only used for the purpose of developing the section 303(d) list. When selecting an evaluation guideline to interpret narrative water quality objectives, the Regional Water Board or the State Water Board:

- Identifies the water body, pollutants, and beneficial uses;

- Identifies the narrative water quality objectives or applicable water quality criteria;
- Identifies the appropriate interpretive evaluation guideline that potentially represents water quality objective attainment or protection of beneficial uses.

### **Determination of Beneficial Use Support and Integrated Report Categories**

To meet CWA section 305(b) requirements of reporting on water quality conditions, the Integrated Report places each assessed waterbody into one of five non-overlapping categories based on the overall beneficial use support of the waterbody. Waterbodies were evaluated for at least one of six “core” beneficial uses including: municipal and domestic supply, aquatic life support, fish consumption, shellfish harvesting, contact recreation, and non-contact recreation. For each core beneficial use associated with each waterbody, a rating of fully supporting, not supporting, or insufficient information was assigned based on the assessment of readily available data and information. Table 1 below describes each category and provides the number of waterbodies placed in each category for the San Francisco Bay Region for the current assessment.

**Table 2 Integrated Report Waterbody Category Summary for 2016**

<b>Category</b>	<b>Description</b>	<b>Waterbodies</b>
1	All assessed beneficial uses supported and no beneficial uses known to be impaired (see appendix F).	<b>36<sup>a</sup></b>
2	There is insufficient information to determine beneficial use support (see appendix E).	<b>92</b>
3	There are insufficient data and/or information to make a beneficial use support determination but information and/or data indicate beneficial uses may be potentially threatened.	<b>0</b>
4	At least one beneficial use is not supported but a Total Maximum Daily Load (TMDL) is not needed.	<b>---</b>
• 4a	A TMDL has been developed and approved by U.S.EPA for all waterbody-pollutant combinations and the approved implementation plan is expected to result in full attainment of the water quality standards within a specified time frame (see appendix C).	<b>48</b>
• 4b	Another regulatory program is reasonably expected to result in attainment of the water quality standard within a reasonable, specified time frame (see appendix D).	<b>13</b>
• 4c	The non-attainment of any applicable water quality standard for the waterbody is the result of pollution and is not caused by a pollutant.	<b>0</b>
5	At least one beneficial use is not supported and a TMDL is needed (see Appendix B).	<b>78</b>

Note: a) Two category 1 waterbodies (Napa River and Sonoma Creek) are artifacts of the action taken to split these waterbodies into smaller segments reflecting the tidal and non-tidal portions. Napa River and Sonoma Creek are thus not truly in category 1, but this artifact will be corrected in the next listing cycle. The newly created segments of Napa River and Sonoma Creek still have appropriate impairments associated with them (see discussion below on page 11).

Detailed category reports can be found in appendices B-F. Pursuant to section 2 of the Listing Policy, waterbodies remain in category 5 until all 303(d)-listed pollutants are addressed by U.S. EPA-approved TMDLs or by another regulatory program that is expected to result in the reasonable attainment of the water quality standards, at which point the waterbody will be placed into category 4a or 4b.

Waterbody-pollutant combinations listed in category 5 (appendix B) show the TMDL requirement status. If a “TMDL is still needed” for the waterbody-pollutant combination, the TMDL requirement status is labeled 5A. If the waterbody-pollutant combination is “being addressed by a U.S. EPA approved TMDL”, the TMDL requirement status is labeled 5B. If the waterbody-pollutant combination is “being addressed by an action other than a TMDL”, the TMDL requirement status is labeled 5C. These labels were created for internal tracking within the CalWQA database and are not Integrated Report sub-categories.

Additionally, if a waterbody had no existing or proposed 303(d) listings, it was automatically placed into category, 2. Consequently, Staff did not conclude that any beneficial use was fully supported unless there were adequate data to demonstrate that there was no impairment to the beneficial use. This conservative approach was taken to prevent waterbodies with insufficient data from being classified as fully attaining standards, thus providing a more accurate baseline for future assessments.

## Region-Specific Issues

Water Board staff developed or updated existing fact sheets and, in conformance with the Listing Policy, provided a decision to “list,” “de-list,” or “do not list.” Each fact sheet contains all of the data and information available for a unique waterbody/pollutant combination. A decision of “do not list” means that there is not sufficient evidence under the Listing Policy to determine that a waterbody/pollutant combination is exceeding water quality standards. Decisions to “list” mean that there is sufficient evidence under the Listing Policy that the waterbody/pollutant combination should be added to, or remain on, the 303(d) list. Decisions to “de-list” mean that there is sufficient evidence under the Listing Policy that water quality standards are attained and the waterbody/pollutant combination should be removed from the 303(d) list.

Water Board staff evaluated 3260 Lines of Evidence and developed 1526 new fact sheets for proposed decisions for the 2016 Integrated Report. Based on the available data and information, and following the Listing Policy procedures to make decisions, staff proposes the following:

- 1332 new decisions of “do not list;”
- 145 new decisions of “do not de-list” (waterbody/pollutant remains on 303(d) list);
- 40 new decisions of “list” (waterbody/pollutant added to the 303(d) list); and
- 9 new decisions of “de-list” (waterbody/pollutant remove from the 303(d) list).

Data assessment associated with preparing an Integrated Report continues to be a significant effort. For the current assessment cycle there were more data available for analysis relative to the previous cycle (see Table 3). During the previous assessment cycle for the San Francisco Bay Region completed in 2010, data assessment resulted in 460 lines of evidence (LOEs) for waterbody-pollutant combinations and 420 new listing decisions of all types (e.g., list, do not list, de-list, do not de-list, etc.).

For each assessment cycle, staff adds new data and information to the existing administrative record and all available data are used to determine water quality condition. In this current assessment cycle, SWAMP data alone accounted for 1850 new lines of evidence. These SWAMP data included those from a substantial fish tissue monitoring effort in lakes and reservoirs resulting in over 800 lines of evidence, SWAMP sediment sampling in creeks and rivers resulting in over 400 lines of evidence, and SWAMP water sampling in creeks and rivers resulting in over 200 lines of evidence. For non-SWAMP data, routine pathogen monitoring at beach areas resulted in over 400 new lines of evidence. Regional Monitoring Program data fish and shellfish data resulted in nearly 400 new lines of evidence.

**Table 3 Comparison of data assessment effort for the Integrated Report cycles**

	2010 Integrated Report	2016 Integrated Report
Number of new Lines of Evidence	460	3260
Number of new Fact Sheets	420	1526

## Proposed Changes to the Impaired Waters List

In summary, we propose adding forty waterbody-pollutant combinations to the impaired waters list. Including these proposed additions, there would be 361 water body-pollutant combinations on the impaired waters list in the San Francisco Bay Region. Of these 361 listings, 109 are being addressed by an existing TMDL and thirty-five are being addressed by another regulatory control program. This latter category includes twenty-four trash-impaired waterbodies that are being addressed by implementing the trash control provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California through the NPDES stormwater permit applicable to the waterbody. We also propose removing nine waterbody-pollutant combinations from the impaired waters list. As a point of comparison, before this assessment cycle, there were 333 waterbody-pollutant combinations on the 303(d) list.

The tables below (available online in Appendix A) show the proposed changes to the 2016 California 303(d) List for this region. The rationale for each proposed 303(d) listing and delisting decision is documented in a “fact sheet” in Appendix G. Table 4 shows the nine waterbody-pollutant combinations currently on the 303(d) list that are considered no longer impaired based on the 2016 data assessment. Table 5 shows the waterbody-pollutant combinations that were, in previous assessment cycles, categorized as “TMDL Required” and are now being addressed by U.S. EPA-approved TMDLs (see Table 5 below). Table 6 shows proposed additions to the impaired waters list, including some waterbody-pollutant combinations that are already being addressed by U.S. EPA-approved TMDLs.

**Table 4 Proposed de-listings**

Waterbody	Pollutant(s)
Calabazas Creek <sup>a</sup>	Diazinon
Golden Hinde Beach (Tomaes Bay)	Indicator Bacteria
Heart's Desire Beach (Tomaes Bay)	Indicator Bacteria
Lawson's Landing (Tomaes Bay)	Indicator Bacteria
Pacific Ocean at Baker Beach	Indicator Bacteria
Pacific Ocean at Bolinas Beach	Indicator Bacteria
Pacific Ocean at Fitzgerald Marine Reserve <sup>b</sup>	Indicator Bacteria
Pacific Ocean at Muir Beach <sup>b</sup>	Indicator Bacteria
Pacific Ocean at Rockaway Beach	Indicator Bacteria

<sup>a</sup> Calabazas Creek (Sonoma County) is being delisted because the data originally used had been incorrectly assigned to this waterbody. The listing is now assigned to the correct waterbody in Santa Clara County.

<sup>b</sup> The Water Board approved a resolution de-listing Pacific Ocean at Fitzgerald Marine Reserve on May 11, 2016 and approved a resolution de-listing Pacific Ocean at Muir Beach on May 14, 2014.

**Table 5 Listings previously categorized as “TMDL Required” now being addressed by U.S. EPA-approved TMDLs**

<b>Waterbody</b>	<b>Pollutant(s)</b>
Alamitos Creek	Mercury
Almaden Lake	Mercury
Almaden Reservoir	Mercury
Aquatic Park Beach (Marina Lagoon San Mateo County)	Indicator Bacteria
Aquatic Park Beach (San Francisco Bay)	Indicator Bacteria
Calero Reservoir	Mercury
Candlestick Point (San Francisco Bay)	Indicator Bacteria
Carquinez Strait	PCBs (and dioxin-like PCBs) Selenium
Central Basin	PCBs (and dioxin-like PCBs)
Chicken Ranch Beach (Tomales Bay)	Indicator Bacteria
Crissy Field Beach (San Francisco Bay)	Indicator Bacteria
Guadalupe Creek	Mercury
Guadalupe Reservoir	Mercury
Guadalupe River	Mercury
Lagunitas Creek	Sedimentation/Siltation
McNears Beach (San Francisco Bay)	Indicator Bacteria
Millerton Point (Tomales Bay)	Indicator Bacteria
Mission Creek	PCBs
Napa River (non-tidal)	Sedimentation/Siltation
Oakland Inner Harbor (Fruitvale Site)	PCBs
Oakland Inner Harbor (Pacific Dry Dock)	PCBs
Pacific Ocean at Pacifica State Beach/Linda Mar	Indicator Bacteria
Richardson Bay	Indicator Bacteria PCBs (and dioxin-like PCBs)
Sacramento San Joaquin Delta	PCBs (and dioxin-like PCBs) Selenium
San Francisco Bay, Central	PCBs (and dioxin-like PCBs) Selenium
San Francisco Bay, Lower	PCBs (and dioxin-like PCBs)
San Francisco Bay, South	PCBs (and dioxin-like PCBs)
San Pablo Bay	PCBs (and dioxin-like PCBs) Selenium
San Pedro Creek	Indicator Bacteria
Sonoma Creek, non-tidal	Sedimentation/Siltation
Soulajule Reservoir	Mercury
Suisun Bay	PCBs (and dioxin-like PCBs) Selenium
Tomales Bay	Mercury

**Table 6 Proposed new listings**

<b>Waterbody</b>	<b>Pollutant(s)</b>
Arroyo Las Positas	Toxicity
Briones Reservoir	Mercury
Calabazas Creek (Santa Clara County) <sup>a</sup>	Diazinon (TMDL approved)
Coyote Creek (Santa Clara County)	Toxicity
Coyote Reservoir	Mercury
Crown Beach (San Francisco Bay)	Indicator Bacteria <sup>b</sup>
Drakes Estero (Marin County)	Indicator Bacteria <sup>b</sup>
Fort Baker, Horseshoe Cove (SF Bay)	Indicator Bacteria <sup>b</sup>
Guadalupe Slough	Toxicity
Henne Lake	Mercury
Keller Beach (San Francisco Bay)	Indicator Bacteria <sup>b</sup>
Kiteboard Beach (San Francisco Bay)	Indicator Bacteria
Lake Chabot (Solano County)	Mercury
Lakeshore Park Beach (Marina Lagoon San Mateo County)	Indicator Bacteria (TMDL approved)
Lexington Reservoir	Mercury
Lower Crystal Springs Reservoir	Mercury
Miller Point (Tomales Bay)	Indicator Bacteria <sup>b</sup>
Napa River, Mare Island Strait <sup>c</sup>	Chlordane, DDT, Dieldrin, Mercury, PCBs, Toxicity
Oakland Inner Harbor (Pacific Dry Dock) <sup>d</sup>	Toxicity
Oakland Inner Harbor	Indicator Bacteria
Oiger Quarry Ponds	Mercury
Oyster Point Marina (San Francisco Bay)	Indicator Bacteria
Pacific Ocean at Fort Funston	Indicator Bacteria
Paradise Cove Beach (San Francisco Bay)	Indicator Bacteria
Pilarcitos Lake	Mercury
San Francisco Bay, Central	Toxicity
San Francisco Bay, Lower	Toxicity
San Francisco Bay, South	Heptachlor Epoxide, Toxicity
San Leandro Bay	DDT, Toxicity
San Pablo Bay	Toxicity
Schoonmaker Beach (Richardson Bay)	Indicator Bacteria <sup>b</sup>
Suisun Bay	Toxicity
Upper San Leandro Reservoir	Mercury

a Calabazas Creek (Santa Clara County) is being listed because the data originally had been incorrectly assigned to establish the listing for Calabazas Creek in Sonoma County.

b Six listings based on total coliforms will be reanalyzed for Integrated Report purposes if State Board adopts new objectives which remove total coliform as an indicator.

c These data were collected as part of the Bay Regional Monitoring Program. Similar or the same listings already apply to most SF Bay segments.

d This is a sediment toxic hot spot and there are multiple listings from 2002. Toxicity is now being added explicitly as a listing where it was implicit in the past based on listings for a variety of other toxic pollutants in sediment. We are already working on a TMDL for this listed water body.



## Napa River and Sonoma Creek Segmentation

Napa River and Sonoma Creek were segmented into sub-waterbodies during this assessment cycle. Sonoma Creek was segmented into a tidal segment and a non-tidal segment with the boundary between these segments at a latitude 38.2407 and longitude of -122.4513 (Highway 121 crossing). Napa River was segmented into a tidal portion, non-tidal portion, and a portion called Mare Island Strait. Starting upstream, the boundary between the Napa River non-tidal and tidal portion is at latitude 38.313014 and longitude of -122.27821 (just north of the Lincoln Avenue crossing). The boundary between the tidal portion and Mare Island Strait is the Highway 37 crossing.

As an artifact of the CalWQA database, Napa River and Sonoma Creek appear in the fact sheets (appendix G) as being de-listed for a number of contaminants. In reality, the pollutant impairments for nutrients and pathogens that were previously assigned to the Napa River and Sonoma Creek have been assigned during this assessment cycle to the new tidal and non-tidal segments created for these waterbodies.

The listings for sedimentation/siltation in Napa River and Sonoma Creeks originated from fine sediment impacts to spawning and rearing habitat as noted in both TMDLs. The TMDLs provide actions to reduce fine sediment input to the non-tidal portions of the main stems and all freshwater tributaries. When the Napa River and Sonoma Creek were each one water body segment, the impairment and TMDL applied to entire main stem segment. Now that we have separated these two water bodies into tidal and non-tidal segments for the Integrated Report, we removed the listings for sedimentation/siltation from the tidal segments to be consistent with the impairment analyses and implementation actions required in the TMDLs.

## TMDL Scheduling

A TMDL is the total maximum daily load(s) of a pollutant(s) that can be discharged into a given waterbody and still ensure the attainment of applicable water quality standards. In conformance with section 5 of the Listing Policy, a TMDL completion schedule date is required for all waterbody-pollutant combinations placed on the 303(d) List. Water Board staff relied on guidance from the U.S. EPA (1997), which states that “schedules should be expeditious and normally extend from eight to thirteen years in length, but could be shorter or slightly longer depending on State-specific factors.” Therefore, the timeline for completing TMDLs for waterbodies listed for the first time as part of the 2016 Integrated Report is estimated to be no longer than thirteen years, which equates to an estimated completion date of 2029. Expected TMDL completion dates are proposed by Regional Water Board staff in the fact sheets of this report (Appendix G). It is important to note that the number of pollutant-waterbody combinations far outweighs the staff resources available for TMDL development and implementation. Instead of working through the Category 5 List on a pollutant-by-pollutant or waterbody-by-waterbody basis the Planning Division sets near-term priorities through the Triennial Review process and interactions with the Regional Board.



## Public Review and Board Approval

Pursuant to section 6.2 of the Listing Policy, waterbodies listed in Category 4a, 4b, or 5, require public review and approval by the Regional Water Board during a public Board hearing and are then submitted to the State Water Board for compiling into the California 303(d) list of impaired waters. Waterbodies listed in Categories 1, 2, 3, or 4c are provided as additional waterbody information and will be submitted to the State Water Board for inclusion into the California Integrated Report. Once compiled, the California Integrated Report is noticed for additional public review and approval by State Water Board Executive Director or the State Water Board, as outlined in section 6.3 of the Listing Policy. The California Category 5 list (i.e., 303(d)-listed waterbodies) will require final approval by the U.S. EPA. If U.S. EPA determines that changes are needed to the submitted report they will initiate further public review before finalizing and publishing the report.

## References

*Additional references are included as hyperlinks in the [Fact Sheets in Appendix G](#). Fact Sheet references may also be accessed from our [Region's 303\(d\) references page](#).*

State Water Resources Control Board (State Board). 2004. Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. SWRCB. Sacramento, CA (as amended in 2015).

State Board. 2005. Water Quality Control Policy of Addressing Impaired Waters. State Water Resources Control Board Resolution No. 2005-0050. SWRCB. Sacramento, CA.

United States Environmental Protection Agency (U.S. EPA). 1997. Memorandum from Robert Perciasepe, Assistant Administrator, to Regional Administrators and Regional Water Division Directors Regarding New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs).

U.S. EPA. 2003. Elements of a State Water Monitoring and Assessment Program. U.S. EPA. Washington, D.C.

U.S. EPA. 2005. Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act. U.S. EPA. Washington, D.C.