

Summary of Foundational Water Board Programs Funded by the Waste Discharge Permit Fund

The State Water Board refers to the following programs as “foundational programs” because they are the foundation for many regulatory programs that are supported by fee payers: Basin Planning, Total Maximum Daily Load (TMDL), Enforcement, Groundwater Ambient Monitoring Assessment (GAMA), Surface Water Assessment and Monitoring Program (SWAMP), and Beach Monitoring. Except for the Beach Monitoring Program, these programs were at one time supported, either in full or partially, by the General Fund. General Fund support for many of these programs has been eliminated over the years. In FY 2011-12, all General Fund support for these programs was eliminated and their budget authority (revenue source) was replaced with the Waste Discharge Permit Fund (WDPF), which is funded by fees paid by dischargers in water quality programs. The fee support was distributed among WDPF fee-paying programs proportional to each program’s distribution of budgeted expenditures. Water Code section 13260(d) directs the State Water Board to collect fees that reflect all of these costs. The Beach Monitoring program was implemented through the budget change proposal process to provide local assistance, the funding for which was to be provided by water quality fees. The fee support was distributed to all water quality fee payers. Note that the Irrigated Lands Program fee payers do not pay fund any monitoring programs and therefore does not contribute to the financial support of GAMA or SWAMP.

The attachment summarizes the fund sources (including WDPF and other sources), the number and costs of staff supported, and the contracts funded for these foundational programs. Summaries of each of these programs is presented below.

Basin Planning

Program Description

Water quality control plans, often called basin plans, are the Water Boards’ primary water quality control planning resource for protecting the state’s waters. They are the basis for requirements included in National Pollutant Discharge Elimination System (NPDES) permits, waste discharge requirements, and cleanup orders. They are also used by outside agencies for their permitting and resource activities. Basin plans designate beneficial uses of surface water and groundwater, establish water quality objectives to protect the uses, and describe programs of implementation for achieving the objectives.

The Water Boards prioritize amendments to basin plans during a periodic review ranking process. Amendments are rule making actions that involve scientific research and often independent scientific peer review, environmental analysis, economic analysis, a written public comment period, board consideration (each Regional Water Board amendment is also subject to State Water Board approval), review by the Office of Administrative Law, and often review by the U.S. Environmental Protection Agency.

Value of the Program

Basin plans are foundational to every water quality program within the Water Board. For example, water quality objectives are used when conducting reasonable potential

analyses and setting effluent limitations in NPDES permits. Waste discharge requirements for nonpoint sources are developed to ensure objectives are attained. Water data is compared to water quality objectives to determine if there is risk to public health, aquatic life, or other beneficial uses, and to determine if a waterbody is impaired. Programs of implementation provide standardized approaches for permitting discharges of toxic substances, trash, desalination brine, and other pollutants. Basin plans also include prohibitions on certain discharges, total maximum daily loads, and monitoring requirements.

In recognition of the importance of basin plans, each amendment process includes many opportunities for public input. Regulations require notice, a public comment period, a public hearing, and board consideration with opportunity for public comment. Basin planning staff often work directly with stakeholders across many sectors and host discussion forums and workshops. Many complex amendments include formalized stakeholder advisory groups and science advisory panels.

All the regions' basin plans and the statewide water quality control plans are available online at: https://www.waterboards.ca.gov/plans_policies/. This webpage also includes links to information on active basin plan amendment projects, including staff contacts.

Total Maximum Daily Load (TMDL)

Program Description

When the State or a Regional Water Board determines that a water body is not meeting water quality objectives, the water is listed as impaired per section 303(d) of the Federal Clean Water Act. The Water Boards are required to develop a Total Maximum Daily Load (TMDL) to address the impairment and restore the water body to attain water quality objectives. A TMDL is a planning and management tool that identifies, quantifies, and controls the sources of a pollutant to restore the health of a polluted or impaired surface waterbody.

The term TMDL is used in two ways. First, the TMDL number is the maximum pollutant load that a waterbody can receive and still achieve acceptable water quality. It is the sum of the waste load allocations from point sources, load allocations from nonpoint sources, natural background loads, and a margin of safety. Second, the TMDL document contains the supporting information, including a quantitative assessment of the water quality problem, contributing sources, and the pollutant load reductions or control actions needed to restore and protect the beneficial uses.

Generally, TMDLs are incorporated into water quality control plans as a program of implementation. As with other basin plan amendments, these are rule making actions that include independent scientific peer review, environmental analysis, economic analysis, a written public comment period, board consideration, review by the Office of Administrative Law, and review by the U.S. Environmental Protection Agency.

Value of the Program

TMDLs are an important tool used to restore impaired waterbodies that do not currently attain water quality standards, especially where the cause and solution are not well understood.

As of July 2024, the Water Boards have restored more than 1,741 waterbody pollutant impairments through a TMDL¹. As of July 2024, there are 4,023 waterbody pollutant impairments still needing a TMDL². Many of the high priority impairments across the state now have TMDLs in place.

As more TMDLs are adopted, many Water Board staff have transitioned from developing TMDLs to implementing them. TMDL program staff work directly with permittees, other responsible parties, and Water Board permitting staff to execute TMDL implementation requirements. This includes watershed stewardship duties, reviewing compliance reports, and assessing watershed-wide monitoring data. As the program continues to mature, Water Board staff are also amending older TMDLs based on better data and compliance efforts.

Adopted TMDLs and statewide policy and guidance are available online at:

https://www.waterboards.ca.gov/water_issues/programs/tmdl/.

TMDL report cards are available on the Water Boards' performance report website at: https://waterboards.ca.gov/about_us/performance_report_2223/plan_assess/111_tmdl_projects.html.

Under the umbrella of the TMDL program, waste discharge permit fees also support Water Board efforts to assess surface water monitoring data and develop the Clean Water Act Section 303(d) List of Impaired Waters in accordance with federal requirements and statewide policy.

Information on impaired waters is available at:

https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/#impaired.

Enforcement Program

Program Description

The Water Boards enforce the pollution control and cleanup requirements that are established for discharges and contaminated sites. Where violations of regulatory requirements are detected, the Water Boards take enforcement actions of varying types and levels of stringency.

The Water Boards address violations by using progressive levels of enforcement, considering actual or potential impact to the State's waters, as needed to achieve compliance. Water Board enforcement actions can be informal or formal and are outlined in the State Water Board' Water Quality Enforcement Policy. This policy describes the

¹ This count is taken from Appendix B1 of the Integrated Report. Number includes waterbody pollutant combinations covered by a TMDL that have been removed from the 303(d) list of impaired waterbodies.

² This count is taken from Appendix B1 of the Integrated Report.

framework for identifying and investigating instances of noncompliance, for taking enforcement actions that are appropriate in relation to the nature and severity of the violation, and for prioritizing enforcement resources to achieve maximum environmental benefit.

Informal enforcement actions are intended to bring an actual, threatened, or potential violation to the discharger's attention to provide an opportunity to return to compliance as soon as possible. Informal actions include phone calls, e-mails, staff enforcement letters, and notices of violation. Formal enforcement actions are administrative or judicial actions that seek to impose sanctions where an adjudicative hearing is available to contest the allegations. The actions can include Investigatory Orders, Cleanup and Abatement Orders, Cease and Desist Orders, and orders imposing Administrative Civil Liability (ACL), which involves monetary penalties. For formal actions, a hearing before the Regional Water Board may be necessary.

Value of Program

A strong and fair enforcement program is essential to the success of any regulatory program. Timely and consistent enforcement by the Regional Water Boards is critical to the success of the water quality program and to ensure that the people of the State have clean water.

Enforcement is necessary to create the deterrence needed to encourage the regulated community to anticipate, identify, and correct violations. Additionally, appropriate penalties and other consequences for violations offer some assurance of equity between those who choose to comply with requirements and those who violate them. Enforcement also provides the public confidence that government is ready, willing, and able to back up regulatory requirements with action.

Violation and enforcement information is available on the Water Boards' website at https://www.waterboards.ca.gov/resources/data_databases/compliance_enforcement.html and a summary of enforcement data is found in the Annual Performance Report at https://www.waterboards.ca.gov/about_us/performance_report_2223/index.html.

The Water Quality Enforcement Policy is revised approximately every five years and undergoes a public process to receive input from stakeholders. Enforcement priorities are generally discussed at the Regional Boards on an annual basis and at the State Board every two years. Additionally, many enforcement efforts aimed at increasing enrollment or compliance in a specific program involve stakeholder outreach and education prior to taking enforcement.

Formal enforcement actions include a public process, which provides opportunities for stakeholders to comment.

Ocean Beach Monitoring

Program Description

As part of the Safe to Swim Network, the Water Boards distribute funds to 17 local

agencies³ to conduct water quality monitoring of ocean beaches along the coast of California. The funds provide public notification of swimming safety at ocean beaches through ambient bacteria sampling, reporting, and, if needed, posting warning signs or closing beaches.

Local agencies are required to monitor for, and report on, the bacteria water quality of ocean waters along public beaches that are visited by more than 50,000 people each year and located adjacent to one or more storm drains that flow in the summer. Beaches are sampled at least weekly between April 1 and October 31.

The bacteria sampling, data reporting, and sign posting requirements were established by California Assembly Bill 411 (statutes of 1997) and codified in Title 17 of the California Code of Regulations. In 2011, Senate Bill 482 initiated the authorization of up to \$1,800,000 annually from the waste discharge permit fund to implement the program.

Value of the Program

California has some of the most popular beaches in the country. More than 15 million people visit each year to swim, wade, surf, and dive in the water. Beach visitors spend over \$10 billion each year in California. Beach water quality monitoring and pollution prevention measures are critical for protecting beach users from waterborne diseases.

With the help of the funds distributed through the Water Boards, the local agencies sample 656 monitoring stations at 291 beaches along 515 miles of beach each year. Approximately 28,000 samples are collected annually.

The data are used to provide swimming safety information directly to beach users through signs, the Water Boards' safe to swim interactive map, and applications developed by outside entities such as the Beach Report Cards and the NowCast predictive model. The data are also used to determine if the ocean along each beach is impaired in accordance with the Clean Water Act section 303(d) assessment process.

The U.S. Environmental Protection Agency grants the Water Boards approximately \$500,000 annually to supplement beach monitoring and maintain the statewide database. These funds plus the \$1,800,000 provided by the waste discharge permit fund cover only a portion of the monitoring costs. The seventeen local agencies spend more than \$10 million a year administering their beach monitoring programs, which are only focused on monitoring and do not include remediation of the causes of the pollution.

Monitoring data are available for direct download from the California Environmental Data Exchange Network at <http://ceden.org/>. The Water Boards' interactive maps are available on the Safe to Swim Portal at https://mywaterquality.ca.gov/safe_to_swim/. Summary graphs, links to Heal The Bay's weekly report cards, staff contacts, and other information

³ The seventeen local agencies are the counties of Humboldt, Los Angeles, Marin, Mendocino, Monterey, Orange, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Cruz, Sonoma, and Ventura; the East Bay Regional Park District, which includes the counties of Alameda and Contra Costa; and the City of Long Beach.

are available at

https://www.waterboards.ca.gov/water_issues/programs/beaches/beach_water_quality/.

GAMA Program

Program Description

The Groundwater Ambient Monitoring and Assessment (GAMA) Program conducts comprehensive monitoring of California's groundwater quality, compiles and integrates groundwater quality data from several different sources and regulatory programs, and makes that data readily accessible to the public. In addition, GAMA conducts groundwater studies related to groundwater vulnerability, groundwater quality in domestic wells, and groundwater impacts associated with non-point sources of contamination.

Comprehensive Groundwater Monitoring - The primary objective of the GAMA Program is to assess statewide groundwater quality on a comprehensive basis and gain an understanding about contamination risk to groundwater resources. GAMA meets this objective through collaboration with the United States Geological Survey, who provides the technical lead for the design and implementation of statewide monitoring and assessment of trends in groundwater quality. In addition, GAMA contracts with national laboratories and Universities to conduct special studies related to groundwater vulnerability and threats from non-point sources.

Data Availability to the Public - GAMA contracts with a specialized vendor to run a user interface that provides easy public access to the groundwater quality data compiled in the GAMA program (the GAMA Groundwater Information System). GAMA staff work directly with the public and stakeholders to upload data, conduct searches of water quality data, and create on-line tools to facilitate access to the water quality data and scientific findings throughout the state.

Value of the Program

The GAMA program provides Californians with a one-stop location to access a comprehensive dataset and understanding of California's groundwater quality. California relies on groundwater for approximately 40% to 60% of its water supply. For many populations, groundwater represents the sole source of water supply. The quality of this water is threatened by industrial and agricultural pollutants and naturally-occurring constituents. GAMA program data and the results from scientific studies give the public tools to assess and understand the threats to water quality statewide, and in their area of interest.

General Public - All members of the public have access to the GAMA Groundwater Information System. The GAMA Groundwater Information system is an interactive database tool that integrates groundwater quality data from several different regulatory and other programs into one place where users can easily access over 83 million analytical records collected from over 286,000 groundwater wells. In addition, GAMA staff develop online web tools to provide the public with easily accessible tools to answer their specific questions

regarding groundwater quality.

Recent use statistics for the GAMA Groundwater Information System reflect this benefit to the public: during 2018, 97% of GAMA users accessed GAMA through the public (non regulatory) interface. Unique site visits to the GAMA Groundwater Information System during 2018 averaged approximately 85 users per workday, including approximately 64 data exports per workday.

Public Served by Municipal Water Systems - From 2003 to 2012, the GAMA program completed comprehensive monitoring and developed a scientific understanding of groundwater quality for the groundwater that supplies 99% of California's population that relies on groundwater as part of their municipal supply. As a result, the vast majority of Californians can access very detailed data and a scientific assessment of the quality of the groundwater that they rely upon.

Public Served by Individual Domestic Wells - Since 2013, the GAMA program also has completed comprehensive monitoring and developed a scientific understanding of groundwater quality for the shallow groundwater that supplies water for approximately 25% of the population that relies on shallow groundwater for their domestic supply. GAMA's shallow groundwater monitoring and assessment program is in progress.

Groundwater Managers, Including Groundwater Sustainability Agencies - The GAMA groundwater studies and database support Groundwater Sustainability Agencies comply with the requirements of the Sustainable Groundwater Management Act. The GAMA program is embedded within the Department of Water Resources SGMA toolkit to allow water managers to quickly and easily access groundwater quality data for their GSA to establish a baseline of water quality, assess trends, and develop water quality criteria for their Groundwater Sustainability Plan. GAMAs groundwater age data allows groundwater managers to assess areas of potential groundwater vulnerability, and areas that may be favorable for enhanced recharge.

Applications for Implementing the Human Right to Water - The shallow groundwater quality studies conducted by GAMA, combined with data from other sources, provide people working on the Human Right to Water initiative with a unique set of data to assess the water quality for people that rely on domestic wells for their supply.

Academic Community - The scientific studies published by the USGS, Lawrence Livermore National Laboratories, UC Davis, and others provide the academic community with high quality data and well substantiated findings to pursue high level scientific inquiries regarding California's groundwater quality.

Regulated Community - Water quality data collected through regulatory programs (e.g., the Irrigated Lands Program) is integrated into the entire State's groundwater quality data through the GAMA Groundwater Information System. This allows the regulated community to leverage existing data to help minimize potentially duplicative monitoring. Data collected and compiled by the GAMA program also helps the regulator community by understanding the state of knowledge of groundwater quality surrounding the sites they are regulating.

Surface Water Ambient Monitoring Program (SWAMP)

Contracts

SWAMP contracts provide services to both the statewide and regional monitoring projects. Coordination of these activities is described in the program description and program value sections.

Service Provider	Task
CA Department of Fish and Wildlife, CA Department of Water Resources	Biological assessments; research; statewide and regional project management; coordination activities; field/sampling services; and analytical testing services.
University of CA, CA State University	Analytical services: tissue and toxicity testing, taxonomy services for biological assessments; research; statewide project management and coordination activities; field/sampling services.
Commercial Labs	Analytical testing services: chemical, physical and biological; method development.
Joint Powers Authority(s)	Special investigation projects; research; coordination activities, workgroup support; statewide project management; and coordination activities.

Program Description

The goal of the Surface Water Ambient Monitoring Program (SWAMP) is to conduct monitoring projects, coordinate with other monitoring activities, and support all data collection activities to provide resource managers, decision makers, and the public with timely, high-quality information about California’s surface waters. The data produced from these activities allows California to evaluate the condition of those surface waters, protect beneficial uses, as well as protect human and wildlife health in support of the Water Board’s mission.

SWAMP implements both statewide and regional monitoring and assessment projects, as well as special studies, to investigate key water quality concerns and inform management decisions. The statewide assessments provide a “big picture” of the overall status and trends of water quality throughout California, while the regional assessments are numerous and provide more detailed information needed by water regulators and managers to detect and fix problems within a specific waterbody or watershed in that region’s jurisdiction. The statewide SWAMP programs include the following:

- Bioassessment Monitoring Program
- Stream Pollution Trends Program (SPoT)
- Bioaccumulation Monitoring Program
- Freshwater Harmful Algal Bloom Program (FHAB)
- Citizen Monitoring Program (Clean Water Team)

The Bioassessment Monitoring and SPoT Program efforts focus on supporting the protection of the environmental and habitat-related beneficial uses by assessing aquatic ecosystem health in streams and rivers. These programs provide data for development of the [CWA Section 303\(d\) List/305\(b\) Report](#) (Integrated Report), that assesses California water and stream health. The data produced from these programs are also used in the development of new water-quality regulations, such as the [Biostimulatory Substances Objective and Program to Implement Biological Integrity and the Statewide Toxicity Provisions](#).

The Bioaccumulation Monitoring Program and FHAB Program statewide efforts focus on the protection of human health and beneficial uses pertaining to fishing, drinking, and contact recreation, by assessing fish consumption safety in fishable waters and addressing cyanobacteria blooms and cyanotoxins in our lakes and streams. The data collected by the bioaccumulation program are utilized by the State Water Board to assess the impairment of fishing and shellfish harvesting in California's water bodies through the Integrated Report process. In addition, fish tissue studies support the development of OEHHA Fish Consumption Advisories, and the Statewide Mercury Program. The FHAB Program supports multi-agency incident management response for harmful algal blooms (HABS) and the development of a new monitoring and assessment strategy for this emerging water-quality and public-health concern.

The Citizen Monitoring Program is a SWAMP initiative to support the efforts of citizen monitoring groups in California. The program addresses the Water Boards' mission to provide information, training, and coordination to our citizen monitoring partners. Those partners assist the Water Boards in filling information gaps in watersheds within their own communities and share in the observation and protection of California's watersheds. Citizen monitoring data have also been used to support activities such as water-quality assessments for the Integrated Report; compliance monitoring of discharge permits; monitoring the safety of swimming holes (Safe-to-Swim studies); and others.

For more information on SWAMP, visit our website at www.waterboards.ca.gov/water_issues/programs/swamp/

Value of Program

The data collected and supported through SWAMP are essential to determining watershed health, developing water quality standards and policy, guiding the Regional Water Boards and their partners in taking actions that protect the waters, evaluating the effectiveness of the Water Boards' pollution control efforts, as well as the protecting human health. For more examples of SWAMP's contributions to California's water

quality efforts visit our [Achievements Report](#) and [Water Quality Status Report](#).

All SWAMP collected data is publicly available on the California Data Exchange Network at www.CEDEN.org. SWAMP also provides all planning and program documentation on its website at www.waterboards.ca.gov/water_issues/programs/swamp/.

SWAMP monitoring and support programs provide services at both the statewide and local level and include key partnerships, multi-level stakeholders input, and support and opportunities for citizen science. SWAMP statewide programs all require multiagency and stakeholder collaboration and feedback through no less than annual advisory group meetings, routine technical workshops, and project kickoff meetings. SWAMP also hosts monthly brown bag seminars and an annual two-day water data science symposium that are open to the public.

FY 2022-23 Sources of Funding for WDPF Redirected Programs

Paid by Fee Paying Programs

Redirected Program	Allocated PYs	Staffing (Direct & Indirect)	Contract	Local Assistance (Beach Monitoring)	Subtotal
TMDL and Basin Planning	77.1	\$19,121,165	\$2,770,443	-	\$21,891,608
Enforcement ¹	20.5	\$5,579,287	-	-	\$5,579,287
Monitoring - GAMA	6	\$1,743,011	\$4,788,333	-	\$6,531,344
Monitoring - SWAMP	20.5	\$4,972,623	\$6,545,918	-	\$11,518,541
Beach Monitoring	-	-	-	\$1,800,000	\$1,800,000
Totals:	124.1	\$31,416,086	\$14,104,694	\$1,800,000	\$47,320,780

Other Funding Sources

Redirected Program	Allocated PYs	Staffing (Direct & Indirect)	Contract	Subtotal
TMDL and Basin Planning	24.5	\$6,538,469	-	\$6,538,469
Enforcement ¹	-	-	-	
Monitoring - GAMA	-	-	-	
Monitoring - SWAMP	15.3	\$3,261,751		\$3,261,751
Beach Monitoring	0.8	\$131,455	-	\$131,455
Totals:	40.6	\$9,931,675		\$9,931,675

	Fee Paying Program Subtotal	Other Funding Sources Subtotal	Grand Total
TMDL and Basin Planning	\$21,891,608	\$6,538,469	\$28,430,077
Enforcement ¹	\$5,579,287		\$5,579,287
Monitoring - GAMA	\$6,531,344		\$6,531,344
Monitoring - SWAMP	\$11,518,541	\$3,261,751	\$14,780,292
Beach Monitoring	\$1,800,000	\$131,455	\$1,931,455
Total:	\$47,320,780	\$9,931,675	\$57,252,455

¹ Reflects only the Regional Board program enforcement direct charges to the WDPF. The SWRCB Office of Enforcement charges time to many different funds including USTCF, CAA, WRF and WDPF.