California Regional Water Quality Control Board

San Francisco Bay Region

Proposed Basin Plan Amendment:

To Establish a Bacteria Total Maximum Daily Load and Implementation Plan for Pillar Point Harbor and Venice Beach and to Update the Bacteria Objectives for Protecting Water Contact Recreation in the Basin Plan

October 13, 2020

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Documents also are available at our website:
https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/PPH_TMDL.html

Proposed Basin Plan Amendment

The following text is to be inserted into Chapter 7: Water Quality Attainment Strategies Including Total Maximum Daily Loads.

7.4.3 Pillar Point Harbor and Venice Beach Bacteria Total Maximum Daily Load (TMDL)

The following sections establish the TMDL for bacteria in Pillar Point Harbor and Venice Beach. The numeric targets, load and wasteload allocations, and Implementation Plan are designed to support and protect the beaches' designated beneficial use of water contact recreation (e.g., swimming and wading).

7.4.3.1 Problem Statement

Bacteria densities in the waters of the beaches in Pillar Point Harbor and Venice Beach exceed the numeric water quality objectives for *Enterococcus*, which are types of bacteria that indicate the potential for fecal contamination and an elevated risk of pathogen-induced illness to people. Monitoring data show chronic exceedances of objectives for *Enterococcus* at multiple beach segments, which has led to health advisories and beach closures. These exceedances and postings threaten and impair the water contact recreation (REC-1) and non-contact water recreation (REC-2) beneficial uses.

7.4.3.2 Sources

If not properly managed, the following sources have the potential to discharge bacteria to Pillar Point Harbor and Venice Beach: onsite wastewater treatment systems, sanitary sewer overflows, sewer collection systems, the Sewer Authority Mid-Coastside wastewater treatment plant, Pillar Point Harbor and Marina operations, private sewer laterals, municipal stormwater, runoff from landfills, Caltrans stormwater runoff, horse boarding facilities, and wildlife.

7.4.3.3 Numeric Targets

The desired or target condition for the water contact beneficial use in Pillar Point Harbor and Venice Beach are listed in Table 7.4.3-1. These targets are based on protective water quality objectives for marine (estuarine) waters adopted by the State Water Board in the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.

Table 7.4.3-1. Numeric Targets to Protect Water Contact Recreation in Pillar Point Harbor and Venice Beach

Indicator	Geometric Mean[a] (cfu/100 mL)[b]	Statistical Threshold Value (cfu/100mL)[b]
Enterococci	30	110

a The waterbody geometric mean shall not be greater than the geometric mean threshold in any six-week interval, calculated weekly. The maximum daily load is 110 cfu/100 mL (i.e., equivalent to the statistical threshold value).

b Cfu per 100 milliliters of sample is equivalent to most probable number per 100 milliliters of sample.

7.4.3.4 Total Maximum Daily Load

The TMDL is equivalent to the numeric targets in Table 7.4.3-1. The TMDL is expressed as the total density of *Enterococcus* indicator bacteria that can be discharged from all sources without causing the water quality at the beaches in Pillar Point Harbor and Venice Beach to exceed the protective standards. The daily load expression of this TMDL is equivalent to the statistical threshold value of 110 cfu/100mL) for *Enterococcus*. The TMDL is applicable year-round.

7.4.3.5 Load and Wasteload Allocations

Table 7.4.3-2 summarizes the allocations for discharges of bacteria. The load allocations (LAs) and wasteload allocations (WLAs) are the same as the numeric targets specified in Table 7.4.3-1 and the TMDL, except that the allocation for onsite wastewater treatment systems, sanitary sewer collection systems, and marina vessels and harbor amenities is zero. The allocations are expressed in terms of *Enterococcus* densities. The daily load expression of the WLAs and LAs in Table 7.4.3-2 are equivalent to the appropriate STV, unless the discharge of bacteria is prohibited then the allocation is zero.

All entities that discharge indicator bacteria or have jurisdiction over such discharges are responsible for meeting these allocations. Implementing parties shall demonstrate achievement of allocations in the receiving water bodies (i.e., at the beach shoreline water quality monitoring stations). The attainment of these allocations will ensure protection of water quality and the applicable beneficial uses at the beaches. All LAs and WLAs shall be achieved for each implementing party no later than 15 years after the TMDL effective date. Successfully completing corrective action to reduce or eliminate a discharge from a particular source, as called for in the Implementation Plan, may be used to show that the corresponding source has achieved its LA or WLA.

Table 7.4.3-2. Load and Wasteload Allocations[a] of Indicator Bacteria for Pillar Point Harbor and Venice Beach

Pollutant Source	Allocation Type	*Enterococcus* (cfu/100 mL)
Sewer Authority Mid-Coastside Wastewater Treatment Plant	WLA	Geometric mean[b] < 30 STV[c] = 110
Sanitary Sewer Collection System[d] (Sewer Authority Mid-Coastside, Granada Community Services District, Half Moon Bay Sanitary District)	WLA	0
Municipal Stormwater Runoff (MS4)[d,e]	WLA	Geometric mean[b] < 30 STV[c] = 110
Caltrans Stormwater Runoff [d]	WLA	Geometric mean[b] < 30 STV[c] = 110
Ox Mountain Landfill[d]	WLA	Geometric mean[b] < 30 STV[c] = 110
Onsite Wastewater Treatment Systems (e.g., septic systems)[d]	LA	0
Marina vessels and Harbor amenities	LA	0
Operations in Pillar Point Harbor (on Pillar Point Harbor property)	LA	Geometric mean[b] < 30 STV[c] = 110
Confined Animal Facilities[d] (e.g., horse facilities)	LA	Geometric mean[b] < 30 STV[c] = 110
Grazing Lands/Operations[d] (e.g., cattle)	LA	Geometric mean[b] < 30 STV[c] = 110
Wildlife[f]	LA	Geometric mean[b] < 30 STV[c] = 110

cfu/100 mL Colony forming unit per 100 milliliters of sample is equivalent to most probable number (MPN) per 100 milliliters of sample
WLA Wasteload allocation
LA Load allocation
STV Statistical threshold value

a. All allocations apply year-round and will be measured at the beach shoreline water quality monitoring stations, except for WLA for the Wastewater Treatment Plant and Ox Mountain Landfill, which shall be measured at the discharge point(s) specified in its wastewater discharge permit order CA0038598 and CA0029947, respectively.

b. The water body geometric mean shall not be greater than the applicable geometric mean magnitude in any six-week interval, calculated weekly.
c. The Enterococcus density shall not be greater than 110 cfu/100 mL.
d. Facilities discharging to freshwater creeks draining to Pillar Point Harbor and Venice Beach shall use E. coli concentrations to demonstrate they meet their allocations. The *E. coli* density shall not be greater than 320 cfu/100 mL.
e. WLA for discharges from municipal stormwater runoff via the municipal separate storm sewer system includes, but is not limited to, contributions from pet waste, trash, and homeless encampments.
f. Wildlife is an uncontrollable source of bacteria and its contribution is considered natural background. No management measures will be required for wildlife sources.

7.4.3.6 Implementation Plan

The Pillar Point Harbor and Venice Beach Bacteria TMDL Implementation Plan specifies actions needed to attain the TMDL and allocations. This Implementation Plan builds on management measures required by existing local, regional, and statewide regulations and orders to reduce or eliminate waste discharges from sanitary sewer collection systems, OWTS, confined animal facilities, municipal stormwater runoff, and vessels. Cooperation among implementing parties is encouraged, not only to attain the TMDL but also to avoid duplicative actions, such as monitoring and reporting. To the extent possible, implementing parties should coordinate actions and water quality monitoring efforts.

Regulatory Tools

The Water Board will use its regulatory authorities to require actions in the Implementation Plan, including individual and general WDRs under Water Code section 13263; waivers of WDRs under Water Code section 13269; technical or monitoring program reports under Water Code section 13267; NPDES permits for wastewater discharges from the Sewer Authority Mid-Coastside and collection systems; NPDES permits for the Ox Mountain Landfill; NPDES permits for stormwater discharges from municipal and Caltrans separate storm sewer systems under the Clean Water Act section 402 and Water Code section 13377; and vessel sanitation requirements under the Harbors and Navigation Code section 775 et seq. The Water Board will also use its authorities to implement the State Water Board's Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy). The Water Board may also enforce the Basin Plan's prohibition of discharges of raw sewage or any waste failing to meet WDRs.

Implementation Actions and Schedule

Tables 7.4.3-3 through 7.4.3-13 show the implementation and monitoring actions, implementing parties, and schedule to achieve the TMDL. The schedule allows time for the implementing parties to identify and implement measures that are necessary to control bacteria discharges resulting in exceedances of allocations. If source control actions are fully implemented throughout the watershed and the TMDL targets are not met, the Water Board may re-evaluate or revise the targets, TMDL, and allocations as appropriate. All implementing parties are required to attain their respective allocations by taking a phased approach in which additional or

enhanced actions are required if initial implementation actions do not result in attainment of the TMDL within approximately five years. The Implementation Plan recognizes that early implementation actions, including, for example, mapping and cleaning of stormwater and sewer pipes, catch basin cleaning, and education and outreach campaigns to reduce pet waste in the past five years, are achieving progress toward attaining the TMDL load and wasteload allocations.

Table 7.4.3-3. Implementation Actions and Schedule for SAM Treatment Plant

Implementation Actions	Implementing Parties	Schedule
Comply with NPDES permit No.CA0038598	Sewer Authority Mid-Coastside (SAM)	Ongoing

Table 7.4.3-4. Phase 1 Implementation Actions and Schedule for Sanitary Sewer Collection Systems

Phase 1 Implementation Actions	Implementing Parties	Schedule
Comply with Statewide General Waste Discharge Requirements for sanitary sewer systems	SAM (City of Half Moon Bay, Granada Community Services District)	Ongoing
Submit an enhanced Sewer System Management Plan, acceptable to the Executive Officer, that prioritizes sewer system inspections and repairs in areas within ½ mile of beach or otherwise connected to the beach. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term plans, and, as necessary, a schedule for developing the funds needed for the capital improvement plan.	SAM (City of Half Moon Bay, Granada Community Services District)	Within six months of the effective date of the TMDL
Complete inspections identified in the enhanced Sewer System Management Plan and schedule repair of identified leaking or damaged infrastructure as expeditiously as feasible.	SAM (City of Half Moon Bay, Granada Community Services District)	Within five years of the effective date of the TMDL

Phase 1 Implementation Actions	Implementing Parties	Schedule
Determine effectiveness of sewer system repairs by assessing beach monitoring data to determine if targets are met at the beaches.	SAM (City of Half Moon Bay, Granada Community Services District)	Within five years of the effective date of the TMDL
Inspect laterals and all other components connecting facilities at Venice Beach to the sanitary sewer system. Repair all leaks.	CA Parks and Recreation	Within one year of the effective date Within three years of the effective date of the TMDL
Submit annual status reports until all system components are inspected and repaired.	SAM (City of Half Moon Bay, Granada Community Services District) CA Parks and Recreation	Annually, first report due one year from the effective date of the TMDL

Table 7.4.3-5. Phase 2 Implementation Actions and Schedule for Sanitary Sewer Collection Systems

Phase 2 Implementation Actions	Implementing Parties	Schedule
If load allocations are not met, submit an enhanced Sewer System Management Plan, acceptable to the Executive Officer that prioritizes sewer system inspections and repairs in areas further than ½ mile from the beach. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term actions, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. Also submit an assessment of the potential source-control benefits of lateral replacement program options, with a conceptual work plan for the optimal option.	SAM (City of Half Moon Bay, Granada Community Services District)	Within six years of the effective date of the TMDL

Phase 2 Implementation Actions	Implementing Parties	Schedule
Complete inspections and repairs identified in Phase 2.	SAM (City of Half Moon Bay, Granada Community Services District)	Within 10 years of the effective date of the TMDL
Submit to the Water Board annual status reports describing actions taken.	SAM (City of Half Moon Bay, Granada Community Services District) CA Parks and Recreation	Annually

Table 7.4.3-6. Implementation Actions and Schedule for Ox Mountain Landfill

Implementation Actions	Implementing Parties	Schedule
Comply with NPDES permit No. CA0029947 and General Permit for Industrial Stormwater No. CAS000001	Browning-Ferris Industries	Ongoing
Monitor bacteria in receiving waters at locations RSW-001, RSW-002, and RSW-003 specified in NPDES permit No. CA0029947	Browning-Ferris Industries	Quarterly

Table 7.4.3-7. Phase 1 Implementation Actions and Schedule for Vessels and Amenities in Pillar Point Harbor

Phase 1 Implementation Actions	Implementing Parties	Schedule
Begin or enhance “no dumping” education efforts to vessel owners	San Mateo County Harbor District	Within six months of the effective date of the TMDL
Submit a plan and implementation schedule, acceptable to the Executive Officer, listing steps to: 1) Evaluate effectiveness and proper performance of sewage collection systems (sewage dump stations, sewage pumpout stations, sewer lines, etc.) for the harbor marina and harbor amenities.	San Mateo County Harbor District	Within six months of the effective date of the TMDL

Phase 1 Implementation Actions	Implementing Parties	Schedule
2) Inspect sewer and stormwater laterals and all other components connecting facilities at Pillar Point Harbor to the sanitary sewer system. 3) Prioritize sewer system repairs and public restrooms repairs in the harbor. 4) Establish and implement a protocol to enhance efforts to identify and correct illicit sewage dumping from boats in inner and outer harbor. 5) Begin or boost existing actions to control runoff from loading docks, dumpsters, food service and refuse areas.		
Complete implementation of the above plan	San Mateo County Harbor District	Within five years of the effective date of the TMDL
Submit to the Water Board annual status reports describing implementation activities taken.	San Mateo County Harbor District	Annually, beginning on the second year after the effective date of the TMDL

Table 7.4.3-8. Phase 2 Implementation Actions and Schedule for Vessels and Amenities in Pillar Point Harbor

Phase 2 Implementation Actions	Implementing Parties	Schedule
If the above Phase 1 actions are insufficient to meet the load allocations within five years of the TMDL effective date, submit an enhanced plan, acceptable to the Executive Officer, describing actions being implemented and additional actions that will be implemented to reduce discharges of bacteria to the beaches. The plan shall include an implementation schedule and milestones for compliance.	San Mateo County Harbor District	Within five years of the effective date of the TMDL
Complete implementation of the enhanced (Phase 2) actions.	San Mateo County Harbor District	Within 10 years of the effective date of the TMDL

Phase 2 Implementation Actions	Implementing Parties	Schedule
Submit to the Water Board an annual report on the status of the implementation activities. The report shall cover all the actions implemented in the previous year as well as a checklist, timeline, and discussion of the actions scheduled for implementation during the upcoming year	San Mateo County Harbor District	Annually, beginning the second year after the effective date of the TMDL

Table 7.4.3-9. Phase 1 Implementation Actions and Schedule for Municipal Stormwater Runoff

Phase 1 Implementation Actions	Implementing Parties	Schedule
Comply with bacteria pollution prevention requirements in NPDES permit No. CAS 612008	City of Half Moon Bay and San Mateo County	Ongoing
Submit an Initial Report to the Water Board describing actions to prevent or reduce discharges of bacteria to storm sewer systems. The report shall also include timeline and/or frequency of implementation activities for all the actions listed below, as appropriate.	City of Half Moon Bay and San Mateo County	Within three months of the effective date of the TMDL
Effectively prohibit and prevent potential illicit discharges into the storm sewer system from: *Illicit sanitary sewer connections*. Ensure at least 20 percent of the stormwater system is evaluated and addressed for illicit connections each year. If this work has already been performed, submit the results of that evaluation and corresponding repairs in the Initial Report. *Homeless population*. Implement an effective approach to prevent bacteria in runoff from areas inhabited by homeless people as needed, based on the size and duration of homeless encampments. *Pet waste*. Address potential pet waste discharges into the storm sewer system through the following actions:	City of Half Moon Bay and San Mateo County	Complete within five years of the effective date of the TMDL

Phase 1 Implementation Actions	Implementing Parties	Schedule
Continue developing and implementing a visual inspection program to identify high pet waste accumulation areas and develop a cleanup plan for these areas, including specific actions before winter rains; Install new or additional dog waste cleanup signs, waste bag dispensers, and trash bins in high dog waste accumulation areas; Evaluate and improve, as needed, the service frequency of dog waste bins; and Develop and implement a comprehensive pet waste public outreach and education campaign. *Loading docks and dumpsters*. Enhance inspection and enforcement of best management practices within ½ miles to the beach to control pollutants in runoff from loading docks, dumpsters, food service and refuse areas.		
Actively deploy best management practices to capture polluted runoff and reduce trash and sediment buildup (e.g., cleanout stormwater pipes, install trash capture devices and frequently remove trash, divert runoff from the beaches).	City of Half Moon Bay and San Mateo County	Complete within five years of the effective date of the TMDL

Table 7.4.3-10. Phase 2 Implementation Actions and Schedule for Municipal Stormwater Runoff

Phase 2 Implementation Actions	Implementing Parties	Schedule
If the above Phase 1 actions are insufficient to meet the wasteload allocations within five years of the TMDL effective date, submit an enhanced plan, acceptable to the Executive Officer, describing actions being implemented and additional actions that will be implemented to reduce discharges of bacteria to the beaches or creeks draining to the beaches; a list of possible	City of Half Moon Bay and San Mateo County	Within five years of the effective date of the TMDL

Phase 2 Implementation Actions	**Implementing Parties**	**Schedule**
Phase 2 actions is given below. The plan shall include an implementation schedule and milestones for compliance.		
Implement the actions listed below or document why they are not appropriate: Inspect existing or future local parks, dog parks, and outdoor pet kennel facilities to ensure compliance with applicable codes and ordinances, and take corrective or enforcement actions as needed; Divert runoff to the sanitary sewer system; Develop and enforce pet or domestic animals waste disposal ordinances; Execute better enforcement of existing litter ordinances; Execute better enforcement of leash ordinances; Execute better enforcement of ordinances for commercial, industrial, and multi-family garbage control, including requirements to cover trash enclosures; and Develop and enforce guidelines for portable toilets and recreational vehicle dumping.	City of Half Moon Bay and San Mateo County	Within six years of the effective date of the TMDL
Complete implementation of the enhanced (Phase 2) stormwater actions.	City of Half Moon Bay, San Mateo County	Within 10 years of the effective date of the TMDL
Submit to the Water Board an annual report on the status of the implementation activities. The report shall cover all the actions implemented in the previous year as well as a checklist, timeline, and discussion of the actions scheduled for implementation during the upcoming year	City of Half Moon Bay, San Mateo County	Annually, beginning the second year after the effective date of the TMDL

Table 7.4.3-11. Implementation Actions and Schedule for Caltrans

Implementation Actions	Implementing Parties	Schedule
Comply with NPDES Permit No. CAS000003	Caltrans	Ongoing

Table 7.4.3-12. Implementation Actions and Schedule for Existing, New and Replacement Onsite Wastewater Treatment Systems (OWTS)

Implementation Actions	Implementing Parties	Schedule
Comply with local codes and ordinances pertaining to OWTS.	Owners and operators of existing, new, and replacement OWTS	Upon effective date of the TMDL and Ongoing
Maintain OWTS in good working condition, including inspecting the OWTS and pumping of solids as necessary, or as required by local ordinances.	Owners and operators of existing, new, and replacement OWTS	Ongoing
Notify the local agency if OWTS septic tank has failed, effluent is pooling, wastewater is discharging to the ground surface, or wastewater is backed up into plumbing fixtures.	Owners and operators of existing, new, and replacement OWTS	Immediately upon discovery
Obtain the required basic operational inspection report and submit the results and any other required information to the Water Board and local agency.	Owners and operators of existing, new, and replacement OWTS	Within three years of the TMDL effective date, and every ten years, thereafter
Obtain an appropriate local agency permit for the repair or replacement of an OWTS deemed by the local agency to be in need of corrective action, and complete all appropriate OWTS repairs or replacement.	Owners and operators of existing, new, and replacement OWTS	Timeline will be specified by the local agency. To be completed within 12 years of the TMDL effective date
Implement the OWTS Policy and any approved Local Agency Management Program.	San Mateo County	Ongoing
Ensure corrective actions for all OWTS that are failing or in need of major repairs [a] are completed.	San Mateo County	Ongoing

Implementation Actions	Implementing Parties	Schedule
Track and report the compliance status of identified failing systems and results of all other implementation activities to the Water Board	San Mateo County	Annually

a Needing major repair: means either means either (1) for a dispersal system, repairs required for an OWTS dispersal system due to surfacing wastewater effluent from the dispersal field and/or wastewater backed up in to plumbing fixtures because the dispersal system is not able to percolate the design flow of wastewater associated with the structure served, or (2) for a septic tank, repairs required to the tank for a compartment baffle failure or tank structural integrity failure such that either wastewater is exfiltrating or groundwater is infiltrating, or (3) if the OWTS utilizes a cesspool or a redwood tank that needs to be replaced with a conventional septic tank.

Table 7.4.3-13. Implementation Actions and Schedule for CAFs

Implementation Actions	Implementing Parties	Schedule
Obtain coverage and comply with the General Waste Discharge Requirements Order No. R2-2016-0031 for Confined Animal Facilities (CAF), as may be amended or revised (CAF Order)	Owners or operators of CAFs	Obtain coverage within one year of effective date; Comply with Order requirements per timeline specified in the CAF Order
Develop a ranch water quality plan and implement BMPs and other actions specified in the CAF Order	Owners or operators of CAFs	According to schedule in the ranch water quality control plan and monitoring plans
Review and compile County records of all facilities with confined animal permit within the TMDL project area, and submit information to the Water Board	San Mateo County	Within three months of the effective date of the TMDL

7.4.3.7 Water Quality Monitoring

Implementing parties are responsible for developing and implementing a monitoring plan sufficient to assess compliance with the numeric targets at the beaches in Pillar Point Harbor and Venice Beach. At a minimum, implementing parties will continue monitoring the beaches as

required under California Health and Safety Code section 115880 and provide a data evaluation report annually to the Water Board. It is recommended that the implementing parties select a lead entity to assess the monitoring data and compile the annual report.

If the TMDL target is not achieved after five years, i.e., following implementation of Phase 1 actions, the implementing parties can delay Phase 2 implementation for up to four years if they conduct or cause to be conducted enhanced bacteria source identification studies. Implementing parties (to include San Mateo County and Harbor District, City of Half Moon Bay, Sewer Authority Mid-Coast, Granada Community Services District and California Parks and Recreation) will be required to contribute to this effort as appropriate and may choose to begin special studies during Phase 1. For example, monitoring catchments within the watershed may help identify and characterize indicator bacteria loadings from different land uses and locations or may evaluate the effectiveness of bacteria control actions. The Water Board will collaborate with implementing parties to investigate any remaining data gaps, including the contribution of natural sources of bacteria to the impairment.

The CAF permittees are required to comply with the monitoring requirements of the Water Board's CAF Order. However, in lieu of the TMDL fecal indicator bacteria water quality monitoring, CAFs and grazing operations may demonstrate attainment of their LAs through sampling of other indicator parameters (e.g., ammonia) or by demonstrating they have implemented all required implementation measures for addressing bacteria discharges from their respective source categories.

For the OWTS source, the Water Board will track and use proof of required corrective actions taken by the property owners as evidence that they have achieved the LA. No additional water quality monitoring is required for this source to demonstrate attainment of the LA.

The Ox Mountain Sanitary Landfill shall monitor the indicator bacteria concentrations in the receiving water to demonstrate that their WLA is met.

Update the Basin Plan to include statewide bacteria water quality objectives for protecting contact recreation (REC-1) in coastal and non-coastal waters.

Amend the language of Section 3.3.1, 4.5.5.1 and Tables 3-1, 3-2, and 4-2a, and update Section 5.1 as follows:

Underline text is new, ~~strikeout~~ is deleted

3.3.1 BACTERIA

Table 3-1 provides ~~a summary of~~ the bacterial water quality objectives for marine and freshwaters in the region and identifies the sources of those objectives. ~~Table 3-2 summarizes U.S. EPA's water quality criteria for water contact recreation based on the frequency of use a particular area receives. These criteria will be used to differentiate between pollution sources or to supplement objectives for water contact recreation~~.

3.3.3.1 Implementation Provisions for Water Contact Recreation Bacteria Objectives

Water quality objectives for bacteria in Table 3-1 shall be strictly applied except when otherwise provided for in a TMDL. In the context of a TMDL, the Water Board may implement the objectives in fresh and marine waters by using a "reference system and antidegradation approach" as discussed below. Implementation of water quality objectives for bacteria using a "reference system and antidegradation approach" requires control of bacteria from all anthropogenic sources so that bacteriological water quality is consistent with that of a reference system. A reference system is defined as an area (e.g., a subwatershed or catchment) and associated monitoring point(s) that is minimally impacted by human activities that potentially affect bacteria densities in the reference receiving water body.

This approach recognizes that there are natural sources of bacteria (defined as non-anthropogenic sources) that may cause or contribute to exceedances of the objectives for indicator bacteria. It also avoids requiring treatment or diversion of water bodies or treatment of natural sources of bacteria from undeveloped areas. Such requirements, if imposed by the Water Board, could ~~have the potential to~~ adversely affect valuable aquatic life and wildlife beneficial uses supported by water bodies in the region.

Under the reference system approach, a certain frequency of exceedance of the ~~single sample~~ bacteria water quality objectives shall be permitted. The permitted number of exceedances shall be based on the observed exceedance frequency in a selected reference system(s) or the targeted water body, whichever is less. The "reference system and antidegradation approach" ensures that bacteriological water quality is at least as good as that of a reference system and that no degradation of existing bacteriological water quality is permitted where existing bacteriological water quality is better than that of the selected reference system(s).

Table 3-1: Water Quality Objectives for ~~Coliform~~ Bacteria [a]

Beneficial Use	Fecal Coliform[a] (MPN/100mL)	Total Coliform[a] (MPN/100mL)	Enterococcus (~~MPN~~ CFU/100mL)[g]	E. coli (CFU/100mL)[g]
Water Contact Recreation	~~geometric mean < 200 90th percentile < 400~~	~~median < 240 no sample > 10,000~~	~~geometric mean < 35~~ ~~no sample > 104~~ geometric mean < 30 STV < 110	geometric mean < 100 STV < 320
Shellfish Harvesting[b]	median < 14 90th percentile < 43	median < 70 90th percentile < 230[c]		
Non-contact Water Recreation[d]	mean < 2000 90th percentile < 4000			
Municipal Supply:				
- Surface Water[e]	geometric mean < 20	geometric mean < 100		
- Groundwater		< 1.1[f]		

Notes:

a. Based on a minimum of five consecutive samples equally spaced over a 30-day period.

b. Source: National Shellfish Sanitation Program.

c. Based on a five-tube decimal dilution test or 300 MPN/100 ml when a three-tube decimal dilution test is used.

d. Source: Report of the Committee on Water Quality Criteria, National Technical Advisory Committee, 1968.

e. Source: California Department of Public Health recommendation.

f. Based on multiple tube fermentation technique; equivalent test results based on other analytical techniques, as specified in the National Primary Drinking Water Regulation, 40 CFR, Part 141.21(f), revised June 10, 1992, are acceptable.

g. ~~Applicable to marine and estuarine waters only.~~ Numeric values are from Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. based on Section 7958 of Title 17 of the California Code of Regulations, 69FR 67217 et seq., and 40 CFR Part 131.41 (effective date December 16, 2004). The Enterococcus objective applies to marine and estuarine waters where the salinity is greater than 1 part per thousand more than 5 percent of the time. The E. coli objective applies to freshwaters where the salinity is equal to or less than 1 part per thousand 95

percent or more of the time. The geometric mean for enterococcus and E. coli is computed weekly for all samples in a 6-week interval.

There is no fecal coliform objective to protect water contact recreation for inland surface waters, enclosed bays, or estuaries, but a fecal coliform objective protecting this use remains in the California Ocean Plan.

The STV is the statistical threshold value and shall not be exceeded by more than 10 percent of the samples collected in a calendar month.

The units CFU denote colony forming units. This unit of measurement is equivalent to MPN (most probable number). The use of either MPN or CFU is based on the method used to detect bacteria, and both are valid measures of bacteria density.

~~Table 3-2: U.S. EPA Bacteriological Criteria for Water Contact Recreation 1,2 (in colonies per 100 ML)~~

	~~Fresh Water~~		~~Salt Water~~
	~~Enterococci~~	~~E. Coli~~	~~Enterococci~~
~~Steady State (all areas)~~	~~33~~	~~126~~	~~35~~
~~Maximum at:~~			
~~- designated beach~~	~~61~~	~~235~~	~~104~~
~~- moderately used area~~	~~89~~	~~298~~	~~124~~
~~- lightly used area~~	~~108~~	~~406~~	~~276~~
~~- infrequently used area~~	~~151~~	~~576~~	~~500~~

~~NOTES:~~

~~1. The criteria were published in the Federal Register, Vol. 51, No. 45 / Friday, March 7, 1986 / 8012-8016. The Criteria are based on:~~

~~(a) Cabelli, V.J. 1983. Health Effects Criteria for Marine Recreational Waters. U.S. EPA, EPA 600/1-80- 031, Cincinnati, Ohio, and~~

~~(b) Dufour, A.P. 1984. Health Effects Criteria for Fresh Recreational Waters. U.S. EPA, EPA 600/1-84- 004, Cincinnati Ohio.~~

~~2. The U.S. EPA criteria apply to water contact recreation only. The criteria provide for a level of production based on the frequency of usage of a given water contact recreation area. The criteria may be employed in special studies within this region to differentiate between pollution sources or to supplement the current coliform objectives for water contact recreation.~~

4.5.5.1 LIMITATIONS FOR CONVENTIONAL POLLUTANTS

Table 4-2 contains effluent limitations for discharges to inland surface waters and enclosed bays and estuaries within the region.

Table 4-2a contains ~~both daily maximum and longer-term e~~ffluent limitations for bacteriological indicator organisms. All NPDES permits for discharges that contain sanitary waste shall include the applicable effluent limitations from Table 4-2a, except for discharges into Hayward Marsh, for which REC-1 is not a designated beneficial use. The water quality-based effluent limitations in Table 4-2a may be adjusted to account for dilution in a manner consistent with procedures in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California ~~(see footnotes 'a' and 'e' in Table 4-2a)~~.

TABLE 4-2A Effluent Indicators for Bacteriological Indicators

~~*(ALL UNITS IN MPN/100ml or CFU/100ml)*~~

PARAMETERS:	DAILY MAXIMUM (MPN/100 mL)	SEVEN SAMPLE MEDIAN (MPN/100 mL)	~~5 SAMPLE MEDIAN OR~~ GEOMETRIC MEAN (CFU/ 100 mL)	STATISTICAL THRESHOLD VALUE (CFU/100 mL)
Enterococcus [a,b,c,d,g]			30~~5 (as geometric mean)~~	110
E. Coli [a,b,c,d,g]			100	320
Total Coliform ~~Organisms~~ [b,c,e,f,g] (~~S~~shallow ~~W~~water ~~D~~discharge [d] (in immediate vicinity of ~~public contact or~~ shellfish harvesting)	~~240~~ 230	~~2.2~~ 70		
~~Deep Water Discharge~~[e]	~~10,000~~		~~240 (as median)~~	

NOTES:

All units are in MPN/100 mL or CFU/100 mL. MPN (most probable number) is equivalent to CFU (colony forming units). The use of either MPN or CFU is based on the method used to detect bacteria, and both are valid measures of bacteria density.

a. For discharges into waters with the water contact recreation beneficial use where the salinity is greater than 1 part per thousand more than 5 percent of the time, the Water Board will implement the enterococcus water quality-based effluent limitations.

b. For discharges into waters with the water contact recreation beneficial use where the salinity is equal to or less than 1 part per thousand 95 percent or more of the time, the Water Board will implement the E. coli water quality-based effluent limitations.

c. The geometric mean shall be computed weekly for all samples in a 6-week interval. The statistical threshold value shall not be exceeded by more than 10 percent of the samples collected in a calendar month.

d. For intermittent discharges ~~that occur only during wet weather~~ to receiving waters with the water contact recreation beneficial use, the Water Board will implement the statistical threshold value effluent limitation. The Water Board will also implement the geometric mean effluent limitation provided there is a statistically sufficient number of samples to compute the geometric mean, which is generally not less than five samples distributed over a six-week period.

~~This water quality-based effluent limitation shall be implemented as a geometric mean of a minimum of 5 effluent samples spaced over a calendar month. Fewer samples may be used on a case-by-case basis if allowed in the waste discharge requirements. Equivalent test results based on other analytical methods applicable to enterococcus approved in 40 CFR 136.3(a) are acceptable.~~

e. ~~b. For discharges into marine and estuarine receiving waters with the water contact recreation beneficial use, the Water Board will implement the enterococcus effluent limitation. For such discharges, on a case-by-case basis, the Water Board may implement the total coliform effluent limitation in place of the enterococcus effluent limitation. This may occur, for example, when wastewater treatment plants are required by the Water Board or another agency to monitor routinely for total coliform (e.g., for recycled/reclaimed water).~~

~~For discharges to receiving waters with the shellfish harvesting beneficial use, or to receiving water designated as freshwater, the Water Board will implement the total coliform effluent limitations.~~

For intermittent discharges ~~that occur only during wet weather~~ to receiving waters with the shellfish harvesting beneficial use, the Water Board will implement the total coliform maximum daily effluent limitation.

~~For combined sewer overflows, notwithstanding any other provisions of this plan, discharges from the City of San Francisco's combined sewer system are subject to the U.S. EPA's Combined Sewer Overflow Policy.~~

~~Furthermore, the Water Board may apply these limitations selectively to non-sewage discharges, but these limitations shall not preempt Effluent Guideline Limitations established pursuant to Sections 301, 302, 304, or 306 of the federal Water Pollution Control Act, as amended.~~

f. ~~c.~~ ~~(1)~~ The Water Board may consider substituting total coliform organisms limitations with fecal coliform organisms limitations provided that it can be conclusively demonstrated through a program approved by the Water Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.

~~(2) The Water Board may consider establishing less stringent requirements for any discharges during wet weather.~~

g. ~~d.~~ The Water Board may apply these limitations selectively to non-sewage discharges, but these limitations shall not preempt Effluent Guideline Limitations established pursuant to Sections 301, 302, 304, or 306 of the federal Water Pollution Control Act, as amended.

Effluent limitations for discharges from the City of San Francisco's combined sewer system will be implemented in accordance with U.S. EPA's *Combined Sewer Overflow (CSO) Control Policy*.

~~The Water Board may grant exceptions to these requirements where it is demonstrated that beneficial uses will not be compromised by such an exception. Discharges receiving such exceptions shall not exceed a five-sample median of 23 MPN/100 ml nor a maximum of 240 MPN/100 ml during dry weather.~~

~~The deep water discharge total coliform effluent limitation is a water quality-based effluent limitation.~~

5.1 STATE WATER BOARD PLANS AND POLICIES

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THE WATER QUALITY ENFORCEMENT POLICY — RESOLUTION NO. ~~2002-0040~~ 2017-0020

The primary goal of the Enforcement Policy~~, adopted in 2002,~~ is to create a 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 benefits.