Attachment A to Resolution No. 2002-XXX

Proposed Amendment to the Water Quality Control Plan – Los Angeles Region to incorporate the Santa Monica Bay Beaches Wet-Weather Bacteria TMDL

Proposed for adoption by the California Regional Water Quality Control Board, Los Angeles Region on September 26, 2002.

Amendments:

List of Figures, Tables and Inserts
Add under Chapter 7, Section 7-4 (Santa Monica Bay Beaches Bacteria TMDL):
Tables

7-4.4. Santa Monica Bay Beaches Bacteria TMDL (Wet Weather Only): Elements
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Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries, Section 7-4 (Santa Monica Bay Beaches Bacteria TMDL)

Santa Monica Bay Beaches Bacteria TMDL (Wet Weather Only)*

This TMDL was adopted by the Regional Water Quality Control Board on September 26, 2002.

This TMDL was approved by:

The State Water Resources Control Board on [Insert Date].
The Office of Administrative Law on [Insert Date].
The U.S. Environmental Protection Agency on [Insert Date].

The following table summarizes the key elements of this TMDL.

Table 7-4.4. Santa Monica Bay Beaches Bacteria TMDL (Wet Weather Only): Elements

Element	Key Findings and Regulatory Provisions
Problem Statement	Elevated bacterial indicator densities are causing impairment of the water contact recreation (REC-1) beneficial use at many Santa Monica Bay (SMB) beaches. Swimming in waters with elevated bacterial indicator densities has long been associated with adverse health effects. Specifically, local and national epidemiological studies compel the conclusion that there is a causal relationship between adverse health effects and recreational water quality, as measured by bacterial indicator densities.
Numeric Target *(Interpretation of the numeric water quality objective, used to calculate the waste load allocations)*	The TMDL has a multi-part numeric target based on the bacteriological water quality objectives for marine water to protect the water contact recreation (REC-1) use. These targets are the most appropriate indicators of public health risk in recreational waters. These bacteriological objectives are set forth in Chapter 3 of the Basin Plan, as amended by the Regional Board on October 25, 2001. The objectives are based on four bacterial indicators and include both geometric mean limits and single sample limits. The Basin Plan objectives that serve as numeric targets for this TMDL are: 1. Rolling 30-day Geometric Mean Limits a. Total coliform density shall not exceed 1,000/100 ml. b. Fecal coliform density shall not exceed 200/100 ml. c. Enterococcus density shall not exceed 35/100 ml. 2. Single Sample Limits a. Total coliform density shall not exceed 10,000/100 ml. b. Fecal coliform density shall not exceed 400/100 ml. c. Enterococcus density shall not exceed 104/100 ml. d. Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1. The targets apply throughout the year. The final compliance point for the targets is the wave wash[1] where there is a freshwater outlet (i.e., publicly-owned storm drain or natural creek) to the beach, or at ankle depth at beaches without a freshwater outlet. Implementation of the above bacteria objectives and the associated TMDL numeric targets is achieved using a 'reference system/anti-degradation approach.' As required by the CWA and Porter-Cologne Water Quality Control Act, Basin Plans include beneficial uses of waters, water quality objectives to protect those uses, an anti-degradation policy, collectively referred to as water quality standards, and other plans and policies necessary to implement water quality standards. This TMDL and its associated waste load allocations, which will be incorporated into relevant permits, are the vehicles for implementation of the Region's standards. The 'reference system/anti-degradation approach' means that on the basis of historical exceedance levels at existing shoreline monitoring locations, including a local reference beach within Santa Monica Bay, a

[1] The wave wash is defined as the point at which the storm drain or creek empties and the effluent from the storm drain initially mixes with the receiving ocean water.

Element	Key Findings and Regulatory Provisions
	certain number of daily exceedances of the single sample bacteria objectives are permitted. The allowable number of exceedance days is set such that (1) bacteriological water quality at any site is at least as good as at a designated reference site within the watershed and (2) there is no degradation of existing shoreline bacteriological water quality. This approach recognizes that there are natural sources of bacteria that may cause or contribute to exceedances of the single sample objectives and that it is not the intent of the Regional Board to require treatment or diversion of natural coastal creeks or to require treatment of natural sources of bacteria from undeveloped areas. The geometric mean targets may not be exceeded at any time. For the single sample targets, each existing shoreline monitoring site is assigned an allowable number of exceedance days during wet weather, defined as days with 0.1 inch of rain or greater and the three days following the rain event. (A separate amendment incorporating the Santa Monica Bay Beaches Dry-Weather Bacteria TMDL addressed the allowable number of summer and winter dry-weather exceedance days.)
Source Analysis	With the exception of isolated sewage spills, storm water runoff conveyed by storm drains and creeks is the primary source of elevated bacterial indicator densities to SMB beaches during wet weather. Because the bacterial indicators used as targets in the TMDL are not specific to human sewage, storm water runoff from undeveloped areas may also be a source of elevated bacterial indicator densities. For example, storm water runoff from natural areas may convey fecal matter from wildlife and birds or bacteria from soil. This is supported by the finding that, at the reference beach, the probability of exceedance of the single sample targets during wet weather is 0.19.
Loading Capacity	Studies show that bacterial degradation and dilution during transport from the watershed to the beach do not significantly affect bacterial indicator densities at SMB beaches. Therefore, the loading capacity is defined in terms of bacterial indicator densities, which is the most appropriate for addressing public health risk, and is equivalent to the numeric targets, listed above.
Waste Load Allocations *(for point sources)*	Waste load allocations are expressed as the number of sample days at a shoreline monitoring site that may exceed the single sample targets identified under "Numeric Target." Waste load allocations are expressed as allowable exceedance days because the bacterial density and frequency of single sample exceedances are the most relevant to public health protection. For each shoreline monitoring site and corresponding subwatershed, an allowable number of exceedance days is set for wet weather. The allowable number of exceedance days for a shoreline monitoring site for each time period is based on the lesser of two criteria (1) exceedance days in the designated reference system and (2) exceedance days based on historical bacteriological data at the monitoring site. This ensures that shoreline bacteriological water quality is at least as good as that of a largely undeveloped system and that there is no degradation of existing shoreline bacteriological water

Element	Key Findings and Regulatory Provisions
	quality. The use of a reference site approach to determine allowable exceedance days insures that human-generated sources of bacteria do not cause or contribute to exceedances of the bacteria objectives when the waste load allocations are met. A subsequent Basin Plan amendment may be necessary either (1) to refine the numeric target to address natural sources of bacteria or (2) to adjust the objectives to recognize naturally occurring exceedances. All responsible jurisdictions and responsible agencies[2] within a subwatershed are jointly responsible for complying with the allowable number of exceedance days for each associated shoreline monitoring site identified in Table 7-4.5b below. The three Publicly Owned Treatment Works (POTWs)[3] discharging to Santa Monica Bay are each given individual WLAs of zero (0) days of exceedance during wet weather.

[2] For the purposes of this TMDL, "responsible jurisdictions and responsible agencies" includes: (1) local agencies that are responsible for discharges from a publicly owned treatment works to the Santa Monica Bay watershed or directly to the Bay, (2) local agencies that are permittees or co-permittees on a municipal storm water permit, (3) local or state agencies that have jurisdiction over a beach adjacent to Santa Monica Bay, and (4) the California Department of Transportation pursuant to its storm water permit.

[3] Hyperion Wastewater Treatment Plant, Joint Water Pollution Control Plant, and Tapia Wastewater Reclamation Facility.

Element	Key Findings and Regulatory Provisions
Load Allocations *(for nonpoint sources)*	Because all storm water runoff to SMB beaches is regulated as a point source, load allocations of zero days of exceedance are set in this TMDL.
Implementation	This TMDL will be implemented in four phases over an 18-year period. The regulatory mechanisms used to implement the TMDL will include primarily the Los Angeles County Municipal Storm Water NPDES Permit, the Caltrans Storm Water Permit, the three NPDES permits for the POTWs, and the authority contained in section 13267 of the Water Code. Within 6 years of the effective date of the TMDL, each defined beach region (as identified in Table 7-4.5a) must achieve a 10% cumulative percentage reduction from the total exceedance-day reductions required for that beach region. Within 10 years of the effective date, each beach region must achieve a 25% reduction, and within 15 years of the effective date, a 50% reduction. The final implementation targets in terms of allowable wet-weather exceedance days must be achieved at each individual beach location within 18 years of the effective date as identified in Table 7-4.5b. In addition, the geometric mean targets must be achieved for each individual beach location within 18 years of the effective date.
Margin of Safety	An explicit margin of safety is included, as the waste load allocations and load allocations will allow exceedances of the single sample targets no more than 5% of the time on an annual basis (based on the cumulative allocations of this TMDL and the Santa Monica Bay Beaches Dry-Weather Bacteria TMDL). The Regional Board concludes that there is water quality impairment if more than 10% of samples over the assessment period exceed the single sample bacteria objectives. An implicit margin of safety is included by assuming no dilution between the storm drain and the wave wash, the point of compliance. This is a conservative assumption since studies have shown that there is a high degree of variability in the amount of dilution between the storm drain and wave wash temporally, spatially and among indicators, ranging from 100% to 0%.
Seasonal Variations and Critical Conditions	Seasonal variations are addressed by developing separate waste load allocations for three time periods (wet weather, summer dry weather and winter dry weather) based on public health concerns and observed natural background levels of exceedance of bacterial indicators. (The two dry-weather periods are addressed in the Santa Monica Bay Beaches Dry-Weather Bacteria TMDL.) The critical condition for this bacteria TMDL is wet weather generally, when historic shoreline monitoring data for the reference beach indicate that the single sample bacteria objectives are exceeded on 19% of the wet-weather days sampled. To more specifically identify a critical condition within wet weather in order to set the allowable exceedance days shown in Tables 7-4.5a and 7-4.5b, the 90th percentile 'storm year'[4] in terms of wet days is used as the reference year. Selecting the 90th percentile year avoids a situation where the reference beach is

[4] For purposes of this TMDL, a 'storm year' means November 1 to October 31.

Element	Key Findings and Regulatory Provisions
	frequently out of compliance. It is expected that because responsible jurisdictions and agencies will be planning for this 'worst-case' scenario, that there will be fewer exceedance days than the maximum allowed in drier years.

Note: The complete staff report for the TMDL is available for review upon request.

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Table 7-4.5a. Interim Compliance Targets by Beach Region

Beach Region	Watersheds	Responsible Agencies	Interim Compliance Targets (Cumulative Allowable Wet-Weather Exceedance Days for *all* Beaches in a Region)		
			Year 6	Year 10	Year 15
North Bay Beaches	Arroyo Sequit Nicholas Canyon Los Alisos Canyon Encinal Canyon Trancas Canyon Zuma Canyon Ramirez Canyon Escondido Canyon Latigo Canyon Solstice Canyon Corral Canyon Carbon Canyon Las Flores Canyon Piedra Gorda Canyon Pena Canyon Tuna Canyon	Malibu Unincorporated Caltrans	190	182	168
Malibu Beaches	Malibu Canyon	Agoura Hills Calabasas Malibu Thousand Oaks Unincorporated Westlake Village Hidden Hills Simi Valley Caltrans	*	*	*
Central Bay Beaches	Topanga Canyon Castlerock Santa Ynez Canyon Pulga Canyon Santa Monica Canyon Santa Monica Marina del Rey Dockweiler	El Segundo Los Angeles Santa Monica Unincorporated Calabasas Culver City Manhattan Beach Caltrans	588	546	476

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Beach Region	Watersheds	Responsible Agencies	Interim Compliance Targets (Cumulative Allowable Wet-Weather Exceedance Days for *all* Beaches in a Region)		
			Year 6	Year 10	Year 15
Ballona Cr Outlet	West Los Angeles Westwood Village Culver City Hollywood Cienega Windsow Hills	Beverly Hills Culver City Inglewood Los Angeles Unincorporated West Hollywood Caltrans	*	*	*
South Bay Beaches	Hermosa Redondo	Hermosa Beach Manhattan Beach Redondo Beach Torrance El Segundo Unincorporated Caltrans	80	79	77
Palos Verdes Beaches	Palos Verdes	Palos Verdes Estates Rancho Palos Verdes Rolling Hills Torrance Los Angeles Redondo Beach Rolling Hills Estates Unincorporated Caltrans	41	41	41

Notes: *Interim milestones for the Malibu and Ballona beach regions will be addressed in the individual bacteria TMDLs for these two watersheds.

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Table 7-4.5b. Interim Compliance Targets by Beach Region and Final Allowable Exceedance Days by Beach Location

Beach Monitoring Location	Estimated no. of wet weather exceedance days in critical year (90th percentile)*	Estimated final wet-weather exceedance-day reduction*	Interim Compliance Targets** (Allowable Exceedance Days during Wet Weather)			Final allowable no. of wet weather exceedance days (daily sampling)*
			Based on 10% reduction from critical year (6 years after effective date)	Based on 25% cumulative reduction from critical year (10 years after effective date)*	Based on 50% cumulative reduction from critical year (15 years after effective date)*	
Leo Carrillo Beach, at 35000 PCH	14	0	n/a	n/a	n/a	14
Nicholas Beach- 100 feet west of lifeguard tower	15	1	n/a	n/a	n/a	14
Broad Beach	16	2	n/a	n/a	n/a	14
Trancas Beach entrance, 50 yards east of Trancas Bridge	20	6	n/a	n/a	n/a	14
Westward Beach, east of Zuma Creek	16	2	n/a	n/a	n/a	14
Paradise Cove, adjacent to west side of Pier	20	6	n/a	n/a	n/a	14
Latigo Canyon Creek entrance	28	14	n/a	n/a	n/a	14
Corral State Beach	16	2	n/a	n/a	n/a	14
Las Flores Beach	26	12	n/a	n/a	n/a	14
Big Rock Beach, at 19900 PCH	25	11	n/a	n/a	n/a	14
NORTH BAY BEACHES SUBTOTAL	**196**	**56**	**190**	**182**	**168**	**n/a**
Malibu Point	16	2	N/a	n/a	n/a	14
Surfrider Beach (second point)- weekly	42	28	N/a	n/a	n/a	14
Surfrider Beach (breach point)- daily	42	28	N/a	n/a	n/a	14
Malibu Pier- 50 yards east	42	28	N/a	n/a	n/a	14
MALIBU BEACHES SUBTOTAL	**142**	**86**	***	***	***	**n/a**
Topanga State Beach	23	9	n/a	n/a	n/a	14
PCH and Sunset Bl.- 400 yards east	21	7	n/a	n/a	n/a	14
16801 Pacific Coast Highway, Bel Air Bay Club (chain fence)	24	10	n/a	n/a	n/a	14

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Beach Monitoring Location	Estimated no. of wet weather exceedance days in critical year (90th percentile)*	Estimated final wet-weather exceedance-day reduction*	Interim Compliance Targets** (Allowable Exceedance Days during Wet Weather)			Final allowable no. of wet weather exceedance days (daily sampling)*
			Based on 10% reduction from critical year (6 years after effective date)	Based on 25% cumulative reduction from critical year (10 years after effective date)*	Based on 50% cumulative reduction from critical year (15 years after effective date)*	
Pulga Canyon storm drain- 50 yards east	22	8	n/a	n/a	n/a	14
Will Rogers State Beach- Temescal Canyon (25 yrds. so. of drain)	24	10	n/a	n/a	n/a	14
Santa Monica Canyon, Will Rogers State Beach	22	8	n/a	n/a	n/a	14
Santa Monica Beach at San Vicente Bl.	33	18	n/a	n/a	n/a	15
Santa Monica at Montana Av. (25 yrds. so. of drain)	29	14	n/a	n/a	n/a	15
Santa Monica at Arizona (in front of the drain)	31	16	n/a	n/a	n/a	15
Santa Monica Municipal Pier- 50 yards southeast	34	19	n/a	n/a	n/a	15
Santa Monica Beach at Pico/Kenter storm drain	41	26	n/a	n/a	n/a	15
Santa Monica Beach at Strand St. (in front of the restrooms)	36	21	n/a	n/a	n/a	15
Ashland Av. storm drain- 50 yards north	38	23	n/a	n/a	n/a	15
Ashland Av. storm drain- 50 yards south	21	6	n/a	n/a	n/a	15
Venice City Beach at Brooks Av. (in front of the drain)	39	24	n/a	n/a	n/a	15
Venice City Beach at Windward Av.- 50 yards north	13	0	n/a	n/a	n/a	13
Venice Fishing Pier- 50 yards south	17	2	n/a	n/a	n/a	15
Venice City Beach at Topsail St.	37	22	n/a	n/a	n/a	15
Dockweiler State Beach at Culver Bl.	22	7	n/a	n/a	n/a	15
Dockweiler State Beach- south of D&W jetty	29	14	n/a	n/a	n/a	15
Imperial HWY storm drain- 50 yards north	17	2	n/a	n/a	n/a	15
Hyperion Treatment Plant One Mile Outfall	18	3	n/a	n/a	n/a	15
Dockweiler State Beach at Grand Av. (in front of the drain)	25	10	n/a	n/a	n/a	15

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Beach Monitoring Location	Estimated no. of wet weather exceedance days in critical year (90th percentile)*	Estimated final wet-weather exceedance-day reduction*	Interim Compliance Targets** (Allowable Exceedance Days during Wet Weather)			Final allowable no. of wet weather exceedance days (daily sampling)*
			Based on 10% reduction from critical year (6 years after effective date)	Based on 25% cumulative reduction from critical year (10 years after effective date)*	Based on 50% cumulative reduction from critical year (15 years after effective date)*	
CENTRAL BAY BEACHES SUBTOTAL	**616**	**279**	**588**	**546**	**476**	**n/a**
Ballona Creek entrance- 50 yards south	28	13	n/a	n/a	n/a	15
BALLONA CREEK OUTLET SUBTOTAL	**28**	**13**	***	***	***	**n/a**
Manhattan State Beach at 40th Street	4	0	n/a	n/a	n/a	4
Manhattan Beach Pier- 50 yards south	5	0	n/a	n/a	n/a	5
Hermosa City Beach at 26th St.	12	0	n/a	n/a	n/a	12
Hermosa Beach Pier- 50 yards south	8	0	n/a	n/a	n/a	8
Herondo Street storm drain- (in front of the drain)	19	4	n/a	n/a	n/a	15
Redondo Municipal Pier- 50 yards south	14	0	n/a	n/a	n/a	14
Redondo State Beach at Topaz St. - north of jetty	19	4	n/a	n/a	n/a	15
SOUTH BAY BEACHES SUBTOTAL	**81**	**8**	**80**	**79**	**77**	**n/a**
Redondo State Beach at Avenue I	6	0	n/a	n/a	n/a	6
Malaga Cove, Palos Verdes Estates-daily	3	0	n/a	n/a	n/a	3
Malaga Cove, Palos Verdes Estates-weekly	14	0	n/a	n/a	n/a	14
Palos Verdes (Bluff) Cove, Palos Verdes Estates	0	0	n/a	n/a	n/a	0
Long Point, Rancho Palos Verdes	4	0	n/a	n/a	n/a	4
Abalone Cove Shoreline Park	1	0	n/a	n/a	n/a	1
Portuguese Bend Cove, Rancho Palos Verdes	2	0	n/a	n/a	n/a	2
Royal Palms State Beach	6	0	n/a	n/a	n/a	6
Wilder Annex, San Pedro	2	0	n/a	n/a	n/a	2

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Beach Monitoring Location	Estimated no. of wet weather exceedance days in critical year (90th percentile)*	Estimated final wet-weather exceedance-day reduction*	Interim Compliance Targets** (Allowable Exceedance Days during Wet Weather)			Final allowable no. of wet weather exceedance days (daily sampling)*
			Based on 10% reduction from critical year (6 years after effective date)	Based on 25% cumulative reduction from critical year (10 years after effective date)*	Based on 50% cumulative reduction from critical year (15 years after effective date)*	
Cabrillo Beach, oceanside	3	0	n/a	n/a	n/a	3
PALOS VERDES BEACHES SUBTOTAL	**41**	**0**	**41**	**41**	**41**	**n/a**

Notes: * The compliance targets are based on existing shoreline monitoring data. These are the compliance targets until additional shoreline monitoring data are collected prior to revision of the TMDL. Once additional shoreline monitoring data are available, the following will be re-evaluated when the TMDL is revised 1) estimated number of wet-weather exceedance days in the critical year at all beach locations, 2) final wet-weather exceedance day reduction at all beach locations, 3) year 10 and year 15 interim compliance targets for each beach region, and 4) final allowable wet-weather exceedance days for each beach location. ** During the implementation period, the Regional Board will evaluate whether adequate progress was made toward meeting the interim compliance targets by recognizing adequate progress as being at least 85% of the targeted reduction. The 85% value will be applied to the targeted reduction from a prior baseline or milestone (e.g., Central Beaches have a year-6 milestone of a 10% reduction (or 28 days), which would mean that a minimum reduction of 24 days would need to be achieved to demonstrate compliance). *** Interim milestones for the Malibu and Ballona beach regions will be identified in the individual bacteria TMDLs for these two watersheds.

Table 7-4.6. Santa Monica Bay Beaches Bacteria TMDL (Wet Weather Only): Significant Dates

Date	Action
120 days after the effective date of the TMDL	Pursuant to a request from the Regional Board, responsible jurisdictions and responsible agencies must submit coordinated shoreline monitoring plan(s), including a list of new sites or sites relocated to the wave wash at which time responsible jurisdictions and responsible agencies will select between daily and weekly shoreline sampling.
5 years after effective date of TMDL	The Regional Board will revise the TMDL to refine allowable wet weather exceedance days based on additional data on bacterial indicator densities in the wave wash, a re-evaluation of the reference system selected to set allowable exceedance levels, and a re-evaluation of the reference year used in the calculation of allowable exceedance days. If necessary, numeric targets will be adjusted to account for naturally occurring exceedances or an additional Basin Plan amendment will be proposed to adjust objectives for naturally occurring exceedances.
6 years after effective date of the TMDL	Each defined beach region (as identified in Table 7-4.5a) must achieve a 10% cumulative percentage reduction from the total exceedance-day reductions required for that beach region.
10 years after effective date of the TMDL	Each defined beach region (as identified in Table 7-4.5a) must achieve a 25% cumulative percentage reduction from the total exceedance-day reductions required for that beach region.
15 years after effective date of the TMDL	Each defined beach region (as identified in Table 7-4.5a) must achieve a 50% cumulative percentage reduction from the total exceedance-day reductions required for that beach region.
18 years after effective date of the TMDL	Final implementation targets in terms of allowable wet-weather exceedance days must be achieved at each individual beach as identified in Table 7-4.5b. In addition, the geometric mean targets must be achieved for each individual beach location.