Amendment to the Water Quality Control Plan—Los Angeles Region to incorporate the Harbor Beaches of Ventura County (Kiddie Beach and Hobie Beach) Bacteria TMDL

Proposed for adoption by the California Regional Water Quality Control Board, Los Angeles Region on November 01, 2007.

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Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries, Section 7-28 (<u>Harbor</u> <u>Beaches of Ventura County (Kiddie Beach and Hobie Beach) Bacteria TMDL</u>)

This TMDL was adopted by the Regional Water Quality Control Board on [Insert Date].

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 includes the elements of this TMDL.

Element	Findings and Regulatory Provisions
Problem Statement	Elevated bacteria indicator densities are causing impairment of the water contact recreation (REC-1) beneficial use at Kiddie Beach and Hobie Beach. Kiddie and Hobie Beach are referenced in the Staff Report as the Harbor Beaches of Ventura County. Swimming in marine waters with elevated bacteria indicator densities has 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 bacteria indicator densities.
Numeric Target (Interpretation of the numeric water quality objective, used to calculate 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 use. These targets are the most appropriate indicators of public health risk in recreational waters.
	Bacteriological objectives are set forth in Chapter 3 of the Basin Plan. The objectives are based on four bacteria indicators and include both geometric mean limits and single sample limits. The Basin Plan objectives that serve as the numeric targets for this TMDL are:
	 <u>Rolling 30-day Geometric Mean Limits</u> 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.
	 Single Sample Limits Total coliform density shall not exceed 10,000/100 ml. Fecal coliform density shall not exceed 400/100 ml. Enterococcus density shall not exceed 104/100 ml. Total coliform density shall not exceed 1,000/100 ml. Total coliform density shall not exceed 1,000/100 ml. if the ratio of fecal-to-total coliform exceeds 0.1.
	These objectives are based on health risk for marine recreational waters of 19 illnesses per 1,000 exposed individuals as set by the United States Environmental Protection Agency (USEPA, 1986). For the Harbor Beaches of Ventura County, the targets will apply at existing monitoring sites, with samples taken at ankle to knee-high depths. These targets apply during both dry- and wet-weather.
	This TMDL uses a "reference system/anti-degradation approach" which means that on the basis of historical exceedance levels at existing monitoring locations, including a local reference beach within the Los Angles Region, a certain number of daily exceedances of the single sample bacteria objectives are

 Table 7-28.1. Harbor Beaches of Ventura County Bacteria TMDL: Elements

Element	Findings and Regulatory Provisions
	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 bacteriological water quality. This approach recognizes that there are natural sources of bacteria that may cause or contribute to exceedances of the bacteriological 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. The rolling 30-day geometric mean will be calculated on each sample day. For the single sample targets, each existing monitoring site is assigned an allowable number of exceedance days for three time periods (1) summer dry-weather (April 1 to October 31), (2) winter dry-weather (November 1 to March 31), and (3) wet-weather (defined as days with 0.1 inch of rain or greater and the three days following the rain event.)
Source Analysis	Bacteria sources in the Harbor Beaches of Ventura County include anthropogenic and non-anthropogenic sources and point and non-point sources. Each of these sources contributes to the elevated levels of bacteria indicator densities at the Harbor Beaches of Ventura County during dry- and wet-weather. As of December 2006, there are four active, National Pollutant Discharge Elimination System (NPDES) permits or Waste Discharge Requirements (WDRs) for discharges to Channel Islands Harbor or Edison Canal.
	Discharges from the Statewide MS4 Permit for the California Department of Transportation (Caltrans) are a potentially significant source of bacteria loading.
	Discharges from general NPDES permits, individual NPDES permits, WDRs, the Statewide Industrial Storm Water General Permit, and the Statewide Construction Activity Storm Water General Permit are not expected to be a significant source of bacteria.
	While a source identification study conducted at the Channel Islands Harbor indicated that local non-point sources are the majority contributor in summer dry-weather, high bacteria densities and exceedances during wet-weather may be more indicative of urban and agricultural run-off.
	Potential non-point sources of bacteria contamination at the Harbor Beaches of Ventura County include: marina activities such as waste disposal from boats, boat deck and slip washing, swimmer "wash-off", and restaurant washouts; natural sources

Element	Findings and Regulatory Provisions
	including birds, waterfowl, and feral cat; and agricultural sources.
Loading Capacity	Loading capacity for the Harbor Beaches of Ventura County is defined in terms of bacteria indicator densities, which is the most appropriate for addressing public health risk, and is equivalent to the numeric targets, listed above. As the numeric targets shall be met at the specific sampling locations, which are representative of the corresponding beaches, no degradation or dilution allowance is provided.
Waste Load Allocations	Waste load allocations (WLAs) are expressed as allowable
(for point sources)	exceedance days.
	The allowable number of exceedance days for a monitoring site for each time period is based on the more stringent 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 bacteriological water quality is at least as good as that of a largely undeveloped system and that there is no degradation of existing water quality.
	For each beach, allowable exceedance days are set on an annual basis as well as for three time periods. These three periods are:
	 Summer dry-weather (April 1 to October 31) Winter dry-weather (November 1 to March 31) Wet-weather days (defined as days of 0.1 inch of rain or more plus three days following the rain event)
	For the Channel Islands Harbor Beaches, the County of Ventura, the Ventura County Watershed Protection District (VCWPD) and associated Municipal Separate Storm Sewer System (MS4) permittees in the Channel Islands Harbor subwatershed, the City of Oxnard, and Caltrans are assigned WLAs.
	All WLAs for summer dry-weather single sample bacteria densities at the Harbor Beaches of Ventura County are zero (0) days of allowable exceedances.
	The WLA for the rolling 30-day geometric mean during any time period or monitoring site at the Harbor Beaches of Ventura County is zero (0) days of allowable exceedances.
	The WLA for winter dry-weather and wet-weather single sample bacteria densities for Kiddie Beach and Hobie Beach are listed in Table 7-28.2.
	General NPDES permits, individual NPDES permits, the Statewide Industrial Storm Water General Permit, the Statewide Construction Activity Storm Water General Permit, and WDR

Element	Findings and Regulat	ory Provisi	ons				
	permittees in the Channel Islands Harbor subwatershed are assigned WLAs of zero (0) days of allowable exceedances for all three time periods and for the single sample limits and the rolling 30-day geometric mean.						
	Any future enrollees under a general NPDES permit, individual NPDES permit, the Statewide Industrial Storm Water General Permit, the Statewide Construction Activity Storm Water General Permit, and WDR will also be subject to a WLA of zero (0) days of allowable exceedances.						
	The Harbor Beaches of Ventura County are assigned interim WLAs upon the effective date of the TMDL. Interim WLAs for single sample and the 30-day rolling geometric mean are expressed in terms of an exceedance day and listed below.						
	Single Sample Exceed	dances:					
	Summer Dry-Weather						
	Location	Daily	Weekly				
	Kiddie Beach	Sampling 54	Sampling 8				
	Hobie Beach	40	6				
	Winter Dry-Weather						
	Location	Daily	Weekly				
	Kiddie Beach	Sampling 23	Sampling 3				
	Hobie Beach	25	4				
	Wet-Weather						
	Location	Daily	Weekly				
	Kiddie Beach	Sampling 32	Sampling 5				
	Hobie Beach	38	6				
	30-day Rolling Geom	etric Mean E	Exceedance	es:			
	Summer Weather						
	Location	Daily	Weekly				
	LocationSamplingSamplingKiddie Beach3512Hobie Beach808						
	Winter Weather			-			
	Location	Daily	Weekly				
	Kiddie Beach	Sampling 92	Sampling 13				
	Hobie Beach	91	14				

Element	Findings and Regulat	ory Provisi	ons				
Load Allocations (for non- point sources)	Load allocations (LAs) are expressed as the number of daily or weekly sample days that may exceed the single sample targets identified under "Numeric Target" at a monitoring site.						
	For the Channel Islands Harbor Beaches, the County of Ventura and the City of Oxnard are assigned LAs. LAs may be assigned to agricultural lands in the Channel Islands Harbor subwatershed during Regional Board Reconsideration based on monitoring data from the Conditional Waiver for Dischargers from Irrigated Lands.						
	All LAs for summer dry-weather, single sample bacteria at the Harbor Beaches of Ventura County are zero (0) of allowable exceedances. The LA for winter dry-weather weather single sample bacteria densities for Kiddie Beach Hobie Beach are listed in Table 7-28.2.						
	The LA for the rolling 3 period or monitoring sit County is zero (0) days	s of Ventura					
	The Harbor Beaches of upon the effective date sample and the 30-day terms of an exceedanc	As for single					
	Single Sample Exceed	dances:					
	Summer Dry-Weather						
	Location Kiddie Beach	Daily Sampling 54	Weekly Sampling 8				
	Hobie Beach	40	6				
	Winter Dry-Weather						
	Location	Daily Sampling	Weekly Sampling				
	Kiddie Beach Hobie Beach	23 25	3 4				
	Wet-Weather						
	Location	Daily Sampling	Weekly Sampling				
	Kiddie Beach Hobie Beach	32 38	5				

Element	Findings and Regulat	Findings and Regulatory Provisions						
	30-day Rolling Geometric Mean Exceedances:Summer WeatherLocationDaily Sampling 35 45 80Weekly Sampling 12 8Kiddie Beach35 8012 8Winter WeatherDaily Sampling 8Norther Mean							
	LocationDaily SamplingWeekly SamplingKiddie Beach9213Hobie Beach9114							
Implementation	 include general NPDES WDRs, the Statewide In Statewide Construction Conditional Waiver for Statewide MS4 Permit in Sections 13263 and permit, assigned a WL/ the permit is reissued, in incorporate the applica for non-point sources withis TMDL. This TMDL will be impleined implementation schedu County. The compliance and im Table 7-28.3. Responsible parties are projects for Best Manage conducting pilot project Board recognizes the lo project. As such, time schedule for the option but are not limited to er 	The regulatory mechanisms used to implement the TMDL will include general NPDES permits, individual NPDES permits, WDRs, the Statewide Industrial Storm Water General Permit, the Statewide Construction Activity Storm Water General Permit, the Conditional Waiver for Dischargers from Irrigated Lands, the Statewide MS4 Permit for Caltrans, and the authority contained in Sections 13263 and 13267 of the Water Code. Each NPDES permit, assigned a WLA, shall be reopened or amended when the permit is reissued, in accordance with applicable laws, to incorporate the applicable WLAs as a permit requirement. LAs for non-point sources will be implemented within the context of this TMDL. This TMDL will be implemented in accordance with the implementation schedule for the Harbor Beaches of Ventura County. The compliance and implementation schedules are detailed in						
	Special studies are not though conducting spectres responsible parties.		•					

Element	Findings and Regulatory Provisions
	The Regional Board shall reconsider this TMDL four years after the effective date of the TMDL for the Harbor Beaches of Ventura County to re-evaluate WLAs and LAs based on monitoring data; to re-evaluate allowable exceedance levels, including whether the allowable number of exceedance days maybe adjusted based on a Ventura County rainfall record; to re- evaluate the selection of the reference beach if additional, appropriate reference beach options have been developed; to consider a natural source exclusion approach, subject to the antidegradation policy, if it can be demonstrated that such an approach is warranted by demonstration of the control of all anthropogenic sources of bacteria to the beaches, and demonstration that beneficial uses are being met; and to assign LAs to agricultural lands in the Chanel Islands Harbor subwatershed based on monitoring in the Conditional Waiver for Dischargers from Irrigated Lands.
	Five years after the effective date of the TMDL, there shall be no allowable exceedances of the single sample limits, in excess of the allowable exceedances listed in Table 7-28.2, at any monitoring location at the Harbor Beaches of Ventura County during summer dry-weather, winter dry-weather, and the rolling 30-day geometric mean targets shall be achieved. Ten years after the effective date of the TMDL there shall be no allowable exceedances of the single sample limits, in excess of the allowable exceedances listed in Table 7-28.2, at any monitoring location during dry-weather or wet-weather at the Harbor Beaches of Ventura County, and the rolling 30-day geometric mean targets shall be achieved.
Margin of Safety	An implicit margin of safety is included through several conservative assumptions, such as the assumption that no dilution takes place between the on-shore sources and where the effluent initially mixes with the receiving water, and that bacteria degradation rates are not sufficient to affect bacteria densities in the receiving water. In addition, an explicit margin of safety has been incorporated, as the 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 for dry- and wet-weather. The Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List concludes that there are water quality impairments using a binomial distribution method which lists waterbodies when the exceedances are between approximately 8 and 10 percent.
Seasonal Variations and Critical Conditions	Seasonal variations are addressed by developing separate waste load allocations for summer dry-weather, winter dry- weather, and wet-weather based on public health concerns and observed natural background levels of exceedance of bacteria indicators.

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Element	Findings and Regulatory Provisions
	Historic monitoring data for the Harbor Beaches of Ventura County and the reference beach indicate that the critical condition for bacteria loading is during wet-weather due to greater exceedance probabilities of the single sample bacteria objectives then during dry-weather. To more specifically identify a critical condition within wet-weather, in order to set the allowable exceedance days shown in Table 7-28.2, the 90 th percentile 'storm year' ¹ in terms of wet days ² is used as the reference year for the reference system. Selecting the 90 th percentile year avoids a situation where the reference system is frequently out of compliance. Selecting the 90 th percentile year is a more conservative approach that will accommodate a 'worst- case' scenario resulting in fewer exceedance days than the maximum allowed in drier years. Conversely, in the 10% of wetter years, there may be more than the allowable number of exceedance days.
Compliance Monitoring	Compliance and monitoring for Harbor Beaches of Ventura County is based on existing monitoring protocols and locations. Monitoring shall continue at sampling locations (VCEHD 36000 and VCEHD 37000) and at the current weekly monitoring frequency, consistent with AB411 compliance monitoring. Monitoring shall be conducted on a year-round basis at the current monitoring locations including the summer months (i.e., April to October) and winter months (i.e., November to March). Bacteria sampling shall be conducted in ankle- to knee-high water, consistent with AB411. However, if additional monitoring stations are added or if changes are made to the sampling frequencies or existing monitoring locations, then submittal of a monitoring plan is required for Executive Officer approval. For agricultural dischargers, the Conditional Waiver for Dischargers from Irrigated Lands shall be revised to include monitoring for enrollees in the Channel Islands Harbor subwatershed.

¹ For purposes of this TMDL, a 'storm year' means November 1 to October 31. The 90th percentile storm year was 1993 with 75 wet days at the LAX meteorological station. ² A wet day is defined as a day with rainfall of 0.1 inch or more plus the 3 days following the rain event.

Location	Summer dry- weather*			Winter dry-weather			Wet-weather**		
	Daily sampling (No. days)	Weekly sampling (No. days)	Compliance Deadline	Daily sampling (No. days)	Weekly sampling (No. days)	Compliance Deadline	Daily sampling (No. days)	Weekly sampling (No. days)	Compliance Deadline
Hobie Beach	0	0	Five years after effective date of the TMDL	3	1	Five years after effective date of the TMDL	17	3	Ten years after effective date of the TMDL
Kiddie Beach	0	0	Five years after effective date of the TMDL	3	1	Five years after effective date of the TMDL	17	3	Ten years after effective date of the TMDL

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Table 7-28.2. Harbor Beaches of Ventura County Bacteria TMDL: Final Allowable Exceedance Days by Location

*A dry day is defined as a non-wet day. **A wet day is defined as a day with 0.1-inch or more of rain and the three days following the rain event.

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Implementation Action	Re	esponsible Parties	Date	
Compliance (WLAs):	1.	County of Ventura	Effective date	
There shall be no exceedances of the interim WLAs (see the WLAs section in Table 7-28.1).		Ventura County Watershed Protection District (VCWPD) and associated MS4 Co-permittees in the Channel Islands Harbor (CIH) subwatershed ³	of the TMDL.	
	3.	City of Oxnard		
	4.	Caltrans		
Compliance (LAs):	1.	County of Ventura	Effective date	
There shall be no exceedances of the interim LAs (see the LAs section in Table 7-28.1).	2.	City of Oxnard	of the TMDL.	
Monitoring:	1.	County of Ventura	Effective date	
Continue monitoring at stations VCEHD 3600 and VCEHD 37000, at a weekly monitoring frequency, and on a year-round basis. Extend the monitoring period for Hobie Beach to	2.	VCWPD and associated MS4 Co-permittees in the CIH subwatershed	of the TMDL.	
include winter months.	3.	City of Oxnard		
	4.	Caltrans		
Monitoring ⁴ :	1.	County of Ventura	Prior to the	
Submit a monitoring plan for the Harbor Beaches of Ventura County (HBVC) for approval by the Executive Officer.	2.	VCWPD and associated MS4 Co-permittees in the CIH subwatershed	modification of existing monitoring locations or	
	3.	City of Oxnard	frequencies.	
	4.	Caltrans		
Implementation:	1.	County of Ventura	Six months	
Submit draft work plan to implement source control and BMPs, including but not limited to structural and non-structural BMPs, at the HBVC during dry-weather for Executive Officer	2.	VCWPD and associated MS4 Co-permittees in the CIH subwatershed	after the effective date of the TMDL.	
approval.	3.	City of Oxnard		
	4.	Caltrans		

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³ Co-permittees of Municipal Separate Storm Sewer System (MS4) permit for Channel Islands Harbor subwatershed include the County of Ventura and incorporated cities therein. The incorporated cities for Channel Islands Harbor subwatershed include the

City of Oxnard. ⁴ Submittal of a monitoring plan is required if additional monitoring stations are added or if changes are made to the sampling frequencies or existing monitoring locations VCEHD 36000 and VCEHD 37000).

Implementation Action	Responsible Parties	Date
Monitoring: Submit monitoring plan for agricultural discharges into the Channel Islands Harbor subwatershed for approval by the Executive Officer.	1. Agricultural Dischargers	One year after the effective date of the TMDL.
Monitoring: Monitor agricultural discharges at the frequency and monitoring locations approved by the Executive Officer in the monitoring plan.	1. Agricultural Dischargers	One year and six months after the effective date of the TMDL.
Pilot Project:	1. County of Ventura	One year and
Submit a work plan piloting Structural BMPs, including but not limited to enhanced circulation devices, for Executive Officer approval (optional).	 VCWPD and associated MS4 Co-permittees in the CIH subwatershed 	six months after the effective date of the TMDL.
	3. City of Oxnard	
	4. Caltrans	
Implementation:	1. County of Ventura	One year and
Submit draft work plan to implement source control and BMPs, including but not limited to structural and non-structural BMPs, at the HBVC during wet-weather for Executive	 VCWPD and associated MS4 Co-permittees in the CIH subwatershed 	six months after the effective date of the TMDL.
Officer approval.	3. City of Oxnard	
	4. Caltrans	
Pilot Project:	1. County of Ventura	Two years and
Completion of Structural BMP pilot projects, including but not limited to enhanced circulation devices (optional).	 VCWPD and associated MS4 Co-permittees in the CIH subwatershed 	six months after the effective date of the TMDL.
	3. City of Oxnard	
	4. Caltrans	
Implementation:	1. County of Ventura	Three years
Submit final work plan; to implement source control and BMPs, including but not limited to structural and non-structural BMPs, at the HBVC during dry-weather for Executive Officer	 VCWPD and associated MS4 Co-permittees in the CIH subwatershed 	and six months after the effective date of the TMDL.
approval.	3. City of Oxnard	
	4. Caltrans	
Regional Board Reconsideration:	Regional Board	Four years after

Implementation Action			sponsible Parties	Date
a.	Re-evaluate WLAs and LAs based on data.			effective date of the TMDL.
b.	Re-evaluate the implementation schedule based on results from pilot projects.			
C.	Re-evaluate allowable exceedance levels, including whether the allowable number of exceedance days maybe adjusted based on a Ventura County rainfall record.			
d.	Re-evaluate the selection of the reference beach if additional, appropriate reference beach options have been developed and if an appropriate reference system cannot be identified for this enclosed harbor, evaluate using the 'natural sources exclusion' approach subject to antidegradation policies rather than the 'reference system/antidegradation' approach.			
e.	Assign LAs to agricultural lands in the Channel Islands Harbor subwatershed based on monitoring in the Conditional Waiver for Dischargers from Irrigated Lands.			
	plementation:	1.	County of Ventura	Four years after
Submit final work plan to implement source control and BMPs, including but not limited to structural and non-structural BMPs, at the HBVC during wet-weather for Executive		2.	VCWPD and associated MS4 Co-permittees in the CIH subwatershed	the effective date of the TMDL.
Off	icer approval.	3.	City of Oxnard	
		4.	Caltrans	
	mpliance (WLAs):	1.	County of Ventura	Five years after
the sai	nere shall be no exceedances in excess of e numbers in Table 7-28.2 of the single mple limits at any location during dry- eather, and the rolling 30-day geometric	2.	VCWPD and associated MS4 Co-permittees in the CIH subwatershed	the effective date of the TMDL.
	ean targets shall be achieved.		City of Oxnard	
		4.	Caltrans	
Compliance (LAs): There shall be no exceedances in excess of the numbers in Table 7-28.2 of the single sample limits at any location during dry- weather, and the rolling 30-day geometric			County of Ventura City of Oxnard	Five years after the effective date of the TMDL.

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Implementation Action	Responsible Parties	Date
mean targets shall be achieved.		
Compliance: Submit Compliance Report for Executive Officer approval. The Compliance Report shall include an evaluation of compliance with dry-weather allocations, interim wet-weather allocations, and rolling 30-day geometric mean targets.	 County of Ventura VCWPD and associated MS4 Co-permittees in the CIH subwatershed City of Oxnard Caltrans 	Six and Eight years after the effective date of the TMDL.
Compliance: Submit Final Compliance Report for Executive Officer approval. The Compliance Report shall include an evaluation of compliance with dry-weather allocations, wet-weather allocations, and the rolling 30-day geometric mean targets.	 County of Ventura VCWPD and associated MS4 Co-permittees in the CIH subwatershed City of Oxnard Caltrans 	Ten years after the effective date of the TMDL.
Final Compliance (WLAs): There shall be no allowable exceedances of single sample limits in excess of the numbers listed in Table 7-28.2 of the single sample limits at any location during any periods and the rolling 30-day geometric mean targets shall be achieved.	 County of Ventura VCWPD and associated MS4 Co-permittees in the CIH subwatershed City of Oxnard Caltrans 	Ten years after the effective date of the TMDL.
Final Compliance (LAs): There shall be no allowable exceedances of single sample limits in excess of the numbers listed in Table 7-28.2 of the single sample limits at any location during any periods and the rolling 30-day geometric mean targets shall be achieved.	 County of Ventura City of Oxnard 	Ten years after the effective date of the TMDL.