Appendix 7-A: Citywide Storm Drain Catch Basin Curb Screens Supporting Documents

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Microbial Source Tracking & Identification

A Fact Sheet from the Southern California Coastal Water Research Project

March 2012

Finding Sources of Contamination Helps Managers Protect Public Health

California's coastlines host millions of visitors each year. To protect public health, county health agencies and others regularly monitor water quality in streams, coastal discharges, and at beaches. If an area shows chronically high fecal bacteria levels, managers need a way to track the contamination source. Microbial source tracking and identification methods help characterize site-specific issues. With these tools, managers can better allocate resources to reduce public health risk and beach closures over the long run, improving beach access and the local economy.

Examples of Fecal Bacteria Sources & Pathways in Southern California

- Sewage leaks or spills
- Failing septic tanks
- Illegal dumping
- Homeless camps
- Pet waste
- Wildlife
- Livestock waste
- Growth on storm drain channels, sand, soil, decaying plant matter, and beach debris
- Transport in overland runoff/ stormwater

Source Tracking

Following bacterial signal back to its source (e.g., a specific storm drain, campground, or leaking sewage pipe)

Source Identification

Characterizing the origin of the bacteria (e.g., human, bird, dog, or livestock fecal material)

Indicators vs. Pathogens

Fecal material often contains pathogens (bacteria, viruses, or other microorganisms that can cause disease). Rather than testing for each individual pathogen, scientists look for the presence of "fecal indicator bacteria" (FIB). These bacteria are often found when fecal contamination is present, but may be associated with non-fecal sources like decaying plant matter. To further enhance public health protection, extensive research to investigate new source-specific monitoring methods is ongoing.

How Does Source Tracking and Identification Work?

Source tracking and identification tests detect evidence of sewage or target specific microorganisms' molecular or genetic material (called "markers"). These tests typically aim to separate human from non-human sources; some are designed to differentiate among individual animal species. Routine source-specific identification and tracking standards do not yet exist, and many newer methods are still experimental.

SCCWRP research develops new source tracking and identification methods, evaluates comparative method performance, and provides scientific guidance for management applications.

Source Tracking and Identification Examples

Method	Evidence Detected	Pros	Cons
Optical Brighteners	Laundry detergent additives found in household wastewater	Low-cost; fast results; linked to human sources	Dissipate in sunlight; low sensitivity
FIB Culture	Growth of fecal indicator bacteria	Method already used at many labs	Slow; not source-specific
Human Markers	A microbe (virus, bacteria, or protozoa) found primarily in humans	Relatively fast results; species-specific	Highly technical; higher cost
Animal Markers	A microbe found primarily in one animal species	Relatively fast results; species/ source-specific	Highly technical; higher cost
Community Analysis	Many microbial markers detected simultaneously	May identify dominant source	Highly technical; higher cost

Source Identification Protocol Project (SIPP)

The State Water Resources Control Board's Clean Beach Task Force commissioned the SIPP to develop protocols for tracking and identifying bacteria sources at beaches throughout California. SCCWRP is one of four core laboratories implementing the multi-year study, which will produce a standard guidance manual for beach managers.

Method Comparison Study

Part of the SIPP calls for a large-scale method comparison study. Samples from multiple fecal sources were prepared at SCCWRP and shipped to researchers around the world for analysis. The results will clarify the performance, benefits, and drawbacks of each method; prioritize research; and set the stage for user-based testing.

Management Application: QMRA

One potential application of source tracking and identification methods is quantitative microbial risk assessment (QMRA). QMRA estimates the relative risk to human health based on information about differential microbial behavior among fecal sources. The US Environmental Protection Agency (EPA) is currently evaluating QMRA as a means for developing site-specific beach bacteria standards. SCCWRP will partner with the EPA to assess its applicability in a southern California pilot study.

Trash Total Maximum Daily Loads

for the

Los Angeles River Watershed

August 9, 2007

California Regional Water Quality Control Board
Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, California 90013

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I. Introduction – Legal Background

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter referred to as the "Regional Board") has developed this total maximum daily load (TMDL) designed to attain the water quality standards for trash in the Los Angeles River. The TMDL has been prepared pursuant to state and federal requirements to preserve and enhance water quality in the Los Angeles Basin River Watershed.

The California Water Quality Control Plan, Los Angeles Region, also known as the *Basin Plan*, sets standards for surface waters and ground waters in the regions. These standards are comprised of designated beneficial uses for surface and ground water, and numeric and narrative objectives necessary to support beneficial uses and the state's antidegradation policy. Such standards are mandated for all waterbodies within the state under the Porter-Cologne Water Quality Act. In addition, the Basin Plan describes implementation programs to protect all waters in the region. The Basin Plan implements the Porter-Cologne Water Quality Act (also known as the "California Water Code") and serves as the State Water Quality Control Plan applicable to the Los Angles River, as required pursuant to the federal Clean Water Act (CWA).

Section 305(b) of the CWA mandates biennial assessment of the nation's water resources, and these water quality assessments are used to identify and list impaired waters. The resulting list is referred to as the 303(d) list. The CWA also requires states to establish a priority ranking for impaired waters and to develop and implement TMDLs. A TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and allocates pollutant loadings to point and non-point sources.

The United States Environmental Protection Agency (USEPA) has oversight authority for the 303(d) program and must approve or disapprove the state's 303(d) lists and each specific TMDL. USEPA is ultimately responsible for issuing a TMDL, if the state fails to do so in a timely manner.

As part of California's 1996 and 1998 303(d) list submittals, the Regional Board identified the reaches of the Los Angeles River at the Sepulveda Flood Basin and downstream as being impaired due to trash.

A consent decree between the USEPA, the Santa Monica BayKeeper and Heal the Bay Inc., represented by the Natural Resources Defense Council (NRDC), was signed on March 22, 1999. This consent decree requires that all TMDLs for the Los Angeles Region be adopted within 13 years. The consent decree also prescribed schedules for certain TMDLs. According to this schedule, a Trash TMDL for the Los Angeles River watershed had to be approved before March 2001.

On September 19, 2001, the Regional Board adopted a Trash TMDL for the Los Angeles River Watershed. The TMDL was subsequently approved by the State Water Resources Control Board on February 19, 2002 and by the Office of Administrative Law on July 16, 2002. The United States Environmental Protection Agency approved the Los Angeles River Trash TMDL on August 1, 2002.

The City of Los Angeles and the County of Los Angeles both filed petitions and complaints in Los Angeles Superior Court challenging the Los Angeles River Trash TMDL. Subsequent negotiations led to a settlement agreement, which became effective on September 23, 2003. Twenty-two other cities[1] ("Cities") sued the Regional Board and State Water Resources Control Board (State Water Board) to set aside the TMDL, on several grounds. The trial court entered an order deciding some claims in favor of the Los Angeles Water Board and State Water Board (collectively "California Water Boards"), and some in favor of the Cities. Both sides appealed, and on January 26, 2006, the Court of Appeal decided every one of the Cities' claims in favor of the California Water Boards, except with respect to CEQA compliance. (*City of Arcadia et al., Los Angeles Regional Water Quality Control Board et al.* (2006) 135 Cal.App.4th 1392.) The Cities filed a petition for review by the California Supreme Court, but on April 19, 2006, the Supreme Court declined to hear any of the Cities' claims.

The Appellate Court found that the California Water Boards did not adequately complete the environmental checklist, and that evidence of a "fair argument" of significant impacts existed such that the California Water Boards should have performed an EIR level of analysis through an EIR or its functional equivalent. (135 Cal.App.4th at 1420-26.) The Court therefore affirmed a writ of mandate issued by the trial court, which orders the California Water Boards to set aside and not implement the TMDL, until it has been brought into compliance with California Environmental Quality Act (CEQA).

On June 8, 2006 the Regional Board set aside the trash TMDL and resolution # 01-013 which established it, pursuant to the writ of mandate and to sections 13240 and 13242 of the Water Code. Setting aside the TMDL was not deemed a repudiation of the settlement agreement entered into between the Los Angeles Regional Water Quality Control Board and the City of Los Angeles and the County of Los Angeles, which was executed on September 24, 2003, and the Los Angeles Water Board expressed its continued intent to be bound by that agreement. The Regional Board also directed staff to revise the CEQA documentation as directed by the writ of mandate, and to prepare and submit for the Regional Board's reconsideration, a TMDL for Trash in the Los Angeles River Watershed, consistent with the requirements of the writ. Staff was also directed to incorporate into its proposed revised TMDL the changes agreed upon in the settlement with the City of Los Angeles, Los Angeles County and the Los Angeles County Flood Control District.

This TMDL staff report and accompanying Basin Plan Amendment incorporate, the changes agreed upon in the settlement with the City of Los Angeles, Los Angeles County and the Los Angeles County Flood Control District. Additional revisions have been made to the TMDL to update the Implementation and Compliance schedules and include city-specific baseline waste load allocations derived from results of the baseline monitoring program

[1] The cities include Arcadia, Baldwin Park, Bellflower, Cerritos, Commerce, Diamond Bar, Downey, Irwindale, Lawndale, Monrovia, Montebello, Monterey Park, Pico Rivera, Rosemead, San Gabriel, Santa Fe Springs, Sierra Madre, Signal Hill, South Pasadena, Vernon, West Covina, and Whittier. They are members of a group that refers to itself as "The Coalition for Practical Regulation."

conducted by the Los Angeles County Department of Public Works (LACDPW). In addition, the CEQA checklist has been revised as directed by the writ of mandate.

The Los Angeles River Trash TMDL is a Basin Plan Amendment and is therefore subject to the 2001 provision of the Public Resources Code Section 21083.9 that requires a CEQA Scoping to be conducted for Regional Projects. CEQA Scoping involves identifying a range of project/program related actions, alternatives, mitigation measures, and significant effects to be analyzed in an EIR or its functionally equivalent document. On June 28, 2006 a CEQA Scoping hearing was held to present and discuss the foreseeable potential environmental impacts of compliance with the Los Angeles River Trash TMDL. A notice of the CEQA Scoping hearing was sent to interested parties including cities and/or counties with jurisdiction in or bordering the Los Angeles River watershed. Input from all stakeholders and interested parties was solicited for consideration in the development of the CEQA document

This Trash TMDL is based on existing, readily available information concerning the conditions in the Los Angeles River watershed and other watersheds in Southern California, as well as TMDLs previously developed by the State and USEPA.

II. Definitions

The definitions of terms as used in this TMDL are provided as follows:

Baseline Waste Load Allocation. The Baseline Waste Load Allocation is the Waste Load Allocation assigned to a permittee before reductions are required. The progressive reductions in the Waste Load Allocations will be based on a percentage of the Baseline Waste Load Allocation. The Baseline Waste Load Allocation was calculated based on the annual average amount of trash discharged to the storm drain system from a representative sampling of land use areas, as determined during the Baseline Monitoring Program.

Daily Generation Rate (DGR). The DGR is the average amount of litter deposited to land or surface water during a 24-hour period, as measured in a specified drainage area.

Full Capture System. A full capture system is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate Q resulting from a one-year, one-hour, storm in the subdrainage area. Rational equation is used to compute the peak flow rate: $Q = C \times I \times A$, where Q = design flow rate (cubic feet per second, cfs); C = runoff coefficient (dimensionless); I = design rainfall intensity (inches per hour, as determined per the rainfall isohyetal map in Figure A),[2] and A= subdrainage area (acres).

[2] The isohyetal map may be updated annually by the Los Angeles County hydrologist to reflect additional rain data gathered during the previous year. Annual updates published by the Los Angeles County Department of Public Works are prospectively incorporated by reference into this TMDL and accompanying Basin Plan amendment.

Monitoring Entity. The Monitoring Entity is the permittee or one of multiple permittees and/or co-permittees that has been authorized by all the other affected permittees or co-permittees to conduct baseline monitoring on their behalf.

Permittee. The term "permittee" refers to any permittee or co-permittee of a stormwater permit.

Trash. In this document, we are defining "trash" as man-made litter, as defined in California Government Code Section 68055.1(g):

> "Litter means all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling or manufacturing."

For purposes of this TMDL, we will consider trash to consist of litter and particles of litter, including cigarette butts. These particles of litter are referred to as "gross pollutants" in European and Australian scientific literature. This definition excludes sediments, and it also excludes oil and grease, and vegetation, except for yard waste that is illegally disposed of in the storm drain system. Additional TMDLs for sediments[3] and oil and grease may be required at a later date.

Urbanized Portion of the Watershed. For the purposes of this TMDL, the urban portion of the watershed includes the sum total area of the incorporated cities and the unincorporated portion of Los Angeles County which are located on the Los Angeles River watershed.[4] The estimated area of the "urbanized" portion of the watershed is 609 square miles[5]. The remainder of the watershed is made up of the Los Angeles National Forest and other open space.

[3] Sediments which may be addressed in a separate TMDL are natural particulate matters such as silt and sand. Sediments result from erosion and are deposited at the bottom of a stream. Sediments do not refer to the decomposition of settleable litter into small particulate matters, which this TMDL is trying to prevent.

[4] The Regional Board recognizes that some areas within the unincorporated sections of Los Angeles County are actually suburban or rural.

[5] As determined by the Regional Board from GIS mapping. (Other minor differences in figures are due to rounding.)

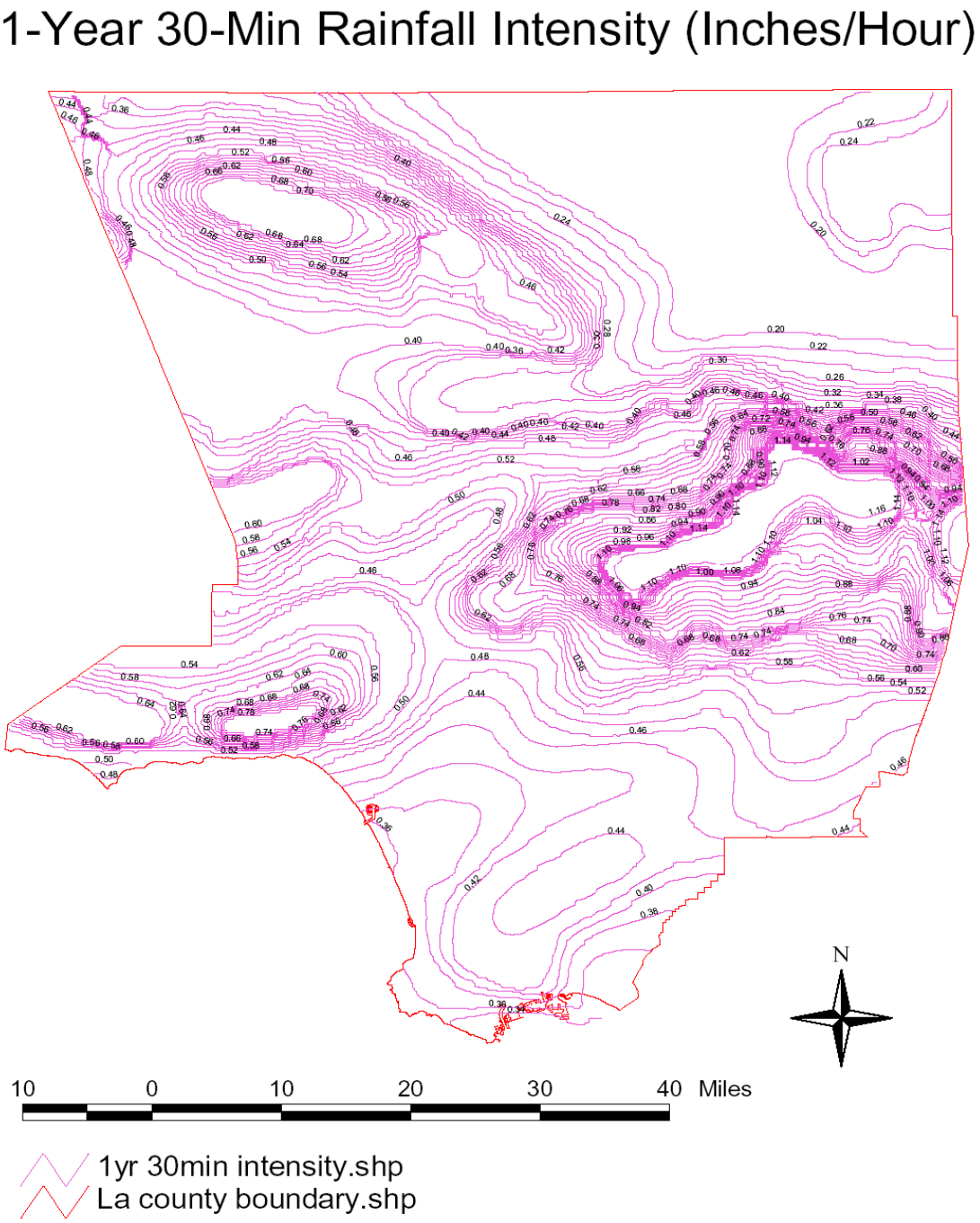

Figure A: Isohyethal Map of Rainfall Intensities in Portions of Los Angeles County (LADPW, 2003).

III. Problem Statement

The problem statement consists of a description of the watershed, beneficial uses, water quality objectives, and a description of the impairment to the watershed caused by trash.

A. Description of the Watershed

The Los Angeles River flows 51 miles from the western end of the San Fernando Valley to the Queensway Bay and Pacific Ocean at Long Beach (see Figure B). The headwaters are at the confluence of Arroyo Calabasas and Bell Creek. Arroyo Calabasas drains Woodland Hills, Calabasas, and Hidden Hills in the Santa Monica Mountains. Bell Creek drains the Simi Hills and receives flows from Chatsworth Creek. From the confluence of Arroyo Calabasas and Bell Creek, the Los Angeles River flows east through the southern portion of the San Fernando Valley, bends around the Hollywood Hills before it turns south onto the broad coastal plain of the Los Angeles Basin, eventually discharging into Queensway Bay and thence into San Pedro Bay West of Long Beach Harbor. Together with its several major tributaries, notably the Tujunga Wash, Burbank Western Channel, Arroyo Seco, Rio Hondo, and Compton Creek, the Los Angeles River drains an area of about 834[6] square miles. Of this area, the incorporated cities and unincorporated portion of Los Angeles County comprise 599 square miles. The remaining acreage consists of the Los Angeles National Forest and other uses.

In the San Fernando Valley, the river flows east for approximately 16 miles along the base of the Santa Monica Mountains. Most of the Los Angeles River channel was lined with concrete between 1935 and 1959 for flood control purposes[7]. This reach is lined in concrete except for a section of the river with a soft bottom at the Sepulveda Flood Control Basin. The Sepulveda Basin is a 2,150-acre open space, located upstream of the Sepulveda Dam. It is designed to collect flood waters during major storms. Because the area is periodically inundated, it remains in natural or semi-natural conditions and supports a variety of low-intensity uses. The US Army Corps of Engineers owns the entire basin and leases most of the area to the City of Los Angeles Department of Recreation and Parks, which has developed a multi-use recreational area that includes a golf course, playing fields, hiking trails, and bicycle paths.

The river is again lined in concrete for most of its course except for a seven-mile soft-bottomed segment between the confluence of the Burbank/Western Channel near Riverside Drive and north of the Arroyo Seco confluence. Three miles of this segment border Griffith Park (encompassing 4,217 acres). Four miles downstream, the river flows parallel to Elysian Park (585 acres in size). The original Pueblo de Los Angeles was founded just east of the river "to take advantage of the river's dependable supply of water."[8] Early this century, the progressive pumping of ground water, together with major diversions of water for irrigation and other uses throughout the watershed, contributed to a decreased flow in the River. From

[6] As determined by the Regional Board from GIS mapping.
[7] Gumprecht, Blake (1999) *The Los Angeles River: Its Life, Death, And Possible Rebirth*, p. 206.
[8] Los Angeles River Master Plan, June 1996, p. 211.

Willow Street all the way through the estuary, the river is soft bottomed with areas of riparian vegetation. This unlined section is about three miles long. Also part of the watershed are a number of lakes including Peck Road Park Lake, Echo Park Lake, and Lincoln Park Lake.

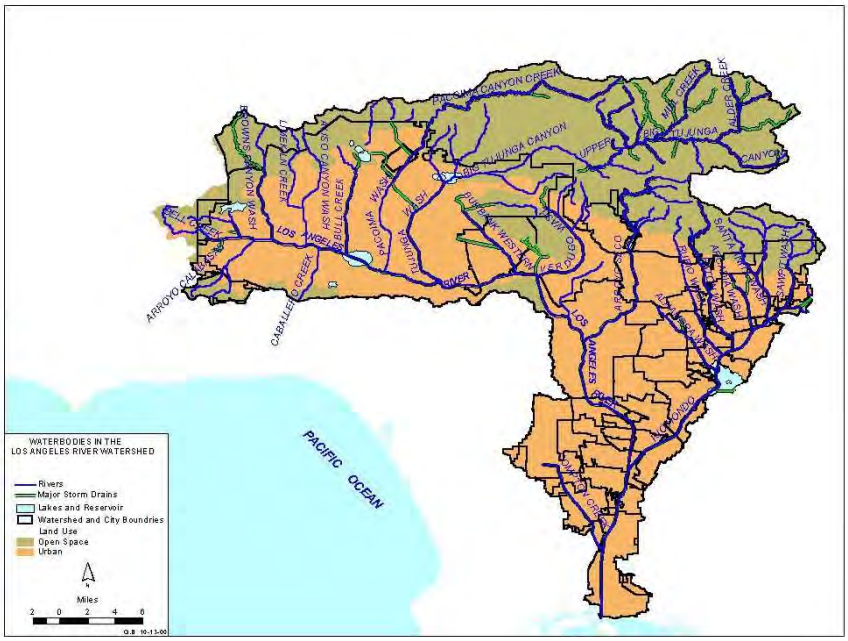

Figure B. Waterbodies in the Los Angeles River Watershed.

B. Beneficial Uses of the Watershed

A brief description of the beneficial uses most likely to be impaired due to trash in the Los Angeles River is provided in this section.

The upper reaches of the Los Angeles River include Sepulveda Basin, a soft-bottomed area that is designed as a flood control basin. Designated beneficial uses for the upper reaches are Municipal and Domestic Supply (MUN) (although most reaches only have conditional MUN designations), Ground Water Recharge (GWR), Water Contact Recreation (REC1), Non-Contact Water Recreation (REC2), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), and Wetland Habitat (WET). The arroyo chub is also found in the Sepulveda Basin area, and cannot survive on the flat surfaces on the concrete-lined portions of the Los Angeles River. The thick growth of riparian plants in this area provides habitat for a variety of wildlife. Native oaks grow along stretches of Valleyheart Drive in Studio City and Sherman Oaks. The river levees along this reach are accessible and neighborhood residents use them for walking and jogging.

Three native species of fish (the south coast minnow-sucker community) are found in Big Tujunga Creek from Big Tujunga Dam downstream to upper Hansen Dam. These are the Santa Ana sucker (Catastomus santaanae), which is listed as a federally endangered species, the Santa Ana speckled dace (Rhinichthys osculus) and the arroyo chub (Gila orcutti), both of

which are State Species of Special Concern. They thrive in the moderate to fast cool or cold flows in gravelly and rocky riffles (suckers and dace), alternating with slower pools (chubs)[9].

Glendale Narrows, from Riverside Drive to Arroyo Seco (Figueroa Street), with the longest soft-bottomed segment (seven miles), supports many beneficial uses and is designated accordingly in the Basin Plan. This portion of the Los Angeles River is designated as open space in the various community general plans. Dense riparian vegetation provides habitat for wildlife including birds, ducks, frogs and turtles. Several small pocket parks are found along this section of the River, many of which were designed by North East Trees (NET), sometimes in partnership with the Mountains Recreation and Conservation Authority (MRCA), such as a small park South and North of Los Feliz Boulevard sometimes referred to as the "Los Angeles RiverWalk"[10] and Sunnynook park on the Atwater side, and Rattlesnake Park and Zanja Madre Park on the Silver Lake side. Another example of a pocket park, designed by MRCA, is Knox Park[11], at the end of Knox Avenue. The riparian vegetation closely mimics the historical "willow sloughs" that once dotted the basin[12]. The relatively lush environment in this reach attracts people who enjoy many forms of recreation including walking, jogging, horseback riding, bicycling, bird watching, photography and crayfishing. There are several access points in this reach, including the pedestrian bridge over the Golden State Freeway from Griffith Park near Los Feliz Boulevard (Sunnynook Bridge). This whole section is lined with a maintained bike path, and many bicyclists use the path, which is cooled in places by the riparian trees. In addition, cut fences provide easy access for the many people who use this section of the river, including the homeless who have set up camp under some of the bridges within this reach or on the vacant land between Highway 5 and the fence to the river.

Figure C. Fletcher Drive: Great Egret, October 26, 1999.

[9] Camm Swift, Emeritus Natural History Museum of Los Angeles County, California Academy of Sciences, May 20, 2000.
[10] Nishith Dhandha, North East Trees, August 24, 2000.
[11] Ibid.
[12] Dan Cooper, Audubon Society, California Academy of Sciences, May 20, 2000.

From Figueroa Street to Washington Boulevard, the river supports several beneficial uses, including the Downtown Channel, which is used by many for recreation and bathing, in particular by homeless people who seek shelter there.

The mid-cities reach (11½ miles from Washington Boulevard to Atlantic Avenue), has several beneficial uses. The western levee is available for trail use from Atlantic Boulevard in Vernon to Firestone Boulevard in South Gate. There is a county bike path on the eastern levee (the Lario Trail) and a county equestrian and hiking trail adjacent to the levee. Continuous access to the Lario Trail is provided below each street bridge crossing. Several parks have been developed adjacent to the river on the east side, some of which provide access to the river trail (Cudahy Park). In Vernon, the channel invert is used for lunchtime soccer games, and people walk or jog on the river maintenance roads mostly during the week at lunchtime. The utility easement in Bell is used partly for small, informal vegetable gardening.[13] South of the confluence of the Los Angeles River and the Rio Hondo Channel in South Gate, increasing numbers of birds can be seen using the channel and adjacent lands.[14]

The nine-mile reach from Atlantic Avenue to the ocean supports some of the most abundant bird life found on the Los Angeles River. The parks, spreading grounds, utility easements and vacant land adjacent to the river provide roosting and feeding habitat. Many species of birds also feed in the concrete channel, where algae grow in the warm, shallow water, and in the estuary South of Willow Street, including fish-eaters like waders (herons, egrets, occidental bitterns and rails), terns, osprey (a fish-eating hawk), pelicans and cormorants. California Brown Pelican and California Least Tern are Federally Endangered Species.[15]

The water in the estuary pools is deep and slow enough to support an abundant fish community as well. In addition to gobies and tilapia (mostly *Tilapia mozambica*)[16], which are very abundant in the Los Angeles River, especially South of Willow Street, many species of fish are found in the estuary of the Los Angeles River. As an example, the following species have been found between the Ocean boulevard bridge and Queensway Bay bridge: California tonguefish, California halibut, specklefin midshipman, California lizardfish, diamond turbot, barcheek pipefish, and Pacific staghorn sculpin (bottom feeders), as well as white croaker, queenfish, deepbody anchovy, white seaperch, slough anchovy, barred sand bass, shiner perch, California grunion, and striped mullet (midwater feeders, often associated with bottom environment). This area also has harbored some pelagic fish, some of which will venture up an undetermined portion of the estuary: northern anchovy, Pacific sardine, Pacific pompano, Pacific barracuda, topsmelt, jacksmelt, white seabass, barred pipefish, giant kelpfish, and bay pipefish.[17]

[13] Los Angeles River Master Plan, p. 99.
[14] At the confluence there is a ten-acre site (approx.) owned by the City of South Gate that contains an abandoned landfill which is vegetated with grasses, shrubs and trees (Los Angeles River Master Plan).
[15] Dan Cooper, California Audubon Society, December 17, 1999.
[16] Charles Mitchell, MBC Applied Environmental Sciences, December 19, 1999.
[17] Marine Biological Baseline Study of Queensway Bay, Long Beach Harbor, MBC Applied Environmental Sciences, 1994.

Beneficial uses of the Los Angeles River watershed are summarized in Table 1, excerpted from the 1994 Basin Plan. These are the designated beneficial uses that must be protected.[18]

Table 1. Beneficial Uses of Surface Waters of the Los Angeles River.

Surface Waters	Hydro Unit	MUN	IND	PROC	GWR	NAV	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	RARE	MIGR	SPWN	SHELL	WET
Los Angeles River Estuary	405.12		E			E	E	E	E			E	E	E	E	E	E	P	E
Los Angeles River to Estuary	405.12	P*	P	P	E		E	E		E			E	E	E	P	P	P	
Los Angeles River	405.15	P*	P		E		E	E		E				P					
Los Angeles River	405.21	P*	P		E		E	E		E				E					E
Compton Creek	405.15	P*			E		E	E		E				E					E
Rio Hondo downstream Spreading Grounds	405.15	P*			I		P	E		P				I					
Rio Hondo	405.41	P*			I		I	E		P				I	E				E
Alhambra Wash	405.41	P*			I		P	I		P				P	E				
Rubio Wash	405.41	P*			I		I	I		I				E	P				
Rubio Canyon	405.31	P*			E		I	I		I				E	E				E
Eaton Wash	405.41	P*			I		I	I		I				E					
Eaton Wash (downstream dam)	405.31	P*			I		I	I		I				E					
Eaton Wash (upstream dam)	405.31	P*			I		I	I		I				E					
Eaton Dam and Reservoir	405.31	P*			I		P	I		I				E					
Eaton Canyon Creek	405.31	P*			E		E	E		E				E	E		E		E
Arcadia Wash (lower)	405.41	P*			I		P	I		P				P					
Arcadia Wash (upper)	405.33	P*			I		P	I		P				P					
Santa Anita Wash (lower)	405.41	P*			I		P	E		P				P	E				
Santa Anita Wash (upper)	405.33	P*			E		E	E		E				E	E				
Little Santa Anita Canyon Creek	405.33	P*			I		I	I		I				E					
Big Santa Anita Reservoir	405.33	P*			E		P	E		E	E			E					

[18] Water Quality Control Plan, Los Angeles Region, California Regional Water Quality Control Board, Los Angeles Region, 1994, p. 2-10.

Table 1. Beneficial Uses of Surface Waters of the Los Angeles River, continued.

Surface Waters	Hydro Unit	MUN	IND	PROC	GWR	NAV	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	RARE	MIGR	SPWN	SHELL	WET
Santa Anita Canyon Creek	405.33	E*			E		E	E		E	E			E	E		E		E
Winter Creek	405.33	P*			I		I	E		I				E					E
East Fork Santa Anita Canyon	405.33	P*			E		E	E		E	E			E			E		E
Sawpit Wash	405.41	I			I		I	I		I				E					
Sawpit Canyon Creek	405.41	P*			I		I	I		I				E	E				
Sawpit Dam and Reservoir	405.41	P*			I		P	I		I				E					
Monrovia Canyon Creek	405.41	I			I		I	I		I				E					E
Arroyo Seco downstream Devil's Gate R. (L)	405.15	P*					I	I		P				P					
Arroyo Seco downstream Devil's Gate R. (U)	405.31	P*					I	I		P				P	E				
Devil's Gate Reservoir (L)	405.31	P*			I		I	I		I				E					
Devil's Gate Reservoir (U)	405.32	I*			I		I	I		I				E					
Arroyo Seco upstream Devil's Gate R.	405.32	E	E	E	E		E	E		E	E			E					E
Millard Canyon Creek	405.32	E*	E	E	E		E	E		E				E	E				E
El Prieto Canyon Creek	405.32	I	I	I	I		I	I		I				E					
Little Bear Canyon Creek	405.32	P*			I		I	I		I	I			E					E
Verdugo Wash	405.24	P*			I		P	I		P				P					
Halls Canyon Channel	405.24	P*	I	I	I		I	I		I				E					
Snover Canyon	405.32	I	I	I	I		I	I		I				E					
Pickens Canyon	405.24	I*			I		I	I		I				E					
Shields Canyon	405.24	I	I	I	I		I	I		I				E					
Dunsmore Canyon Creek	405.24	I	I	I	I		I	I		I				E					

Table 1. Beneficial Uses of Surface Waters of the Los Angeles River, continued.

Surface Waters	Hydro Unit	MUN	IND	PROC	GWR	NAV	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	RARE	MIGR	SPWN	SHELL	WET
Burbank Western Channel	405.21	P*					P	I		P				P					
La Tuna Canyon Creek	405.21	P*			I		I	I		I				E					
Tujunga Wash	405.21	P*			I		P	I		P	P			P					
Hansen Flood Control Basin & Lakes	405.23	P*			E		E	E		E	E			E	E				
Lopez Canyon Creek	405.21	P*			I		I	I		I				E					
Little Tujunga Canyon Creek	405.23	P*			I		I	E		I	I			E	E				
Kagel Canyon Creek	405.23	P*			I		I	I		I				E					
Big Tujunga Canyon Creek	405.23	P*			E		E	E		E	E			E	E		E		E
Upper Big Tujunga Canyon Creek	405.23	P*			E		E	E		I	P			E					E
Haines Canyon Creek	405.23	P*			I		I	I		I				E	E				
Vasquez Creek	405.23	P*			E		E	E		P	P			E					E
Clear Creek	405.23	P*			E		E	E		E	E			E					E
Big Tujunga Reservoir	405.23	P*			E		P	E		E	P			E			E		
Mill Creek	405.23	P*			E		E	E		E	E			E					E
Pacoima Wash	405.21	P*			E		P	E		E				E	E				
Pacoima Reservoir	405.22	P*			E		E	E		E				E					
Pacoima Canyon Creek	405.22	P*			E		E	E		E	E			E	E		E		E
Stetson Canyon Creek	405.22	P*			I		P	E		P				P					
Wilson Canyon Creek	405.22	P*			I		E	E		I				E					
May Canyon Creek	405.22	P*			I		I	E		I				E					
Sepulveda Flood Control Basin	405.21	P*			E		E	E		E				E					E
Bull Creek	405.21	P*			I		I	I		I				E					
Los Angeles Reservoir	405.21	E	E	E	P		P	E		E				E	E				
Lower Van Norman Reservoir	405.21	E*	E	E	E		E	E		E				E	E				
Solano Reservoir	405.21	E*					P			P				E					
Caballero Creek	405.21	P*			I		I	I		I				E					
Aliso Canyon Wash and Creek	405.21	P*			I		I	I		I				E					
Limeklin Canyon Wash	405.21	P*			I		I	I		I				E					

Table 1. Beneficial Uses of Surface Waters of the Los Angeles River, concluded.

Surface Waters	Hydro Unit	MUN	IND	PROC	GWR	NAV	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	RARE	MIGR	SPWN	SHELL	WET
Browns Canyon Wash and Creek	405.21	P*			I		I	I		I				E					
Arroyo Calabasas	405.21	P*					P	I		P				P					
McCoy Canyon Creek	405.21	P*			I		I	I		I				E					
Dry Canyon Creek	405.21	P*			I		I	I		I				E					
Bell Creek	405.21	P*			I		I	I		I				E					
Chatsworth Reservoir	405.21	E	E	E			P	E		E				E					
Dayton Canyon Creek	405.21	P*			I		I	I		I				E					
Echo Lake	405.15	P*					P	E		P				E					
Lincoln Park Lake	405.15	P*					P	E		P				E					

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use

BENEFICIAL USE CODES (see Basin Plan for more details):
MUN - Municipal and Domestic Water Supply
IND - Industrial Service Supply
PROC - Industrial Process Supply
GWR - Ground Water Recharge
REC1 - Water Contact Recreation
REC2 - Non-Contact Water Recreation
COMM - Commercial and Sport Fishing

: Conditional designation: the waters designated with an "" in the table do not have MUN as a designated use until such time as the Basin Plan is modified based on additional study. In the interim, no new effluent limitations will be placed in Waste Discharge Requirements as a result of these designations until the Regional Board adopts an amendment that identifies those waters in the Region that should be excepted from the MUN designation.

WARM - Warm Freshwater Habitat
COLD - Cold Freshwater Habitat
EST - Estuarine Habitat
MAR - Marine Habitat
WILD - Wildlife Habitat

RARE - Rare, Threatened or Endangered Species
SPWN - Spawning, Reproduction, and/or Early Development
SHELL - Shellfish Harvesting
WET - Wetland Habitat

C. Water Quality Objectives

Water quality standards consist of a combination of beneficial uses, water quality objectives and the State's Antidegradation Policy. The Regional Board has determined that the narrative water quality objectives applicable to this TMDL are **floating materials***: "Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses*"[19] and **solid, suspended, or settleable materials:** "*Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses*."[20] The States' Antidegradation Policy is formally referred to as the *Statement of Policy with Respect to Maintaining High Quality Waters in California* (State Board Resolution No. 68-16).

D. Impairment of Beneficial Uses

Existing beneficial uses impaired by trash in the Los Angeles River are contact recreation (REC 1) (contact sports: swimmers are spotted regularly in the Los Angeles River at Glendale Narrows and also at Willow Street in Long Beach) and non-contact recreation such as fishing (REC 2) (trash is aesthetically displeasing and deters recreational use and tourism); warm fresh water habitat (WARM); wildlife habitat (WILD); estuarine habitat (EST) and marine habitat (MAR); rare, threatened or endangered species (RARE); migration of aquatic organisms (MIGR) and spawning, reproduction and early development of fish (SPWN); Commercial and sport fishing (COMM); Wetland Habitat (WET), and Cold freshwater habitat (COLD). These beneficial uses in the Los Angeles River are impaired by large accumulations of suspended and settled debris throughout the river system. The problem is even more acute in Long Beach where debris flushed down from the upper reaches of the river collects. Common items that have been observed by Regional Board staff include Styrofoam cups, Styrofoam food containers, glass and plastic bottles, toys, balls, motor oil containers, antifreeze containers, construction materials, plastic bags, and cans. Heavier debris can be transported during storms as well.

Reaches of the Los Angeles River that are impaired by trash, and listed on the 303(d) list for such, are Tujunga Wash (downstream Hansen Dam to Los Angeles River), Los Angeles River Reach 5 (within Sepulveda Basin), Los Angeles River Reach 4 (Sepulveda Dam to Riverside Dr.), Los Angeles River Reach 3 (Riverside Dr. to Figueroa St.), Los Angeles River Reach 2 (Figueroa St. to upstream Carson St.), Los Angeles River Reach 1 (upstream Carson St. to estuary), Burbank Western Channel, Verdugo Wash (Reaches 1 & 2), Arroyo Seco Reach 1 (downstream Devil's Gate Dam) & Reach 2 (W. Holly Ave. to Devil's Gate), and Rio Hondo Reach 1 (Santa Ana Fwy to Los Angeles River). In addition, Peck Road Lake, Echo Park Lake and Lincoln Park Lake are listed as impaired for trash.

Trash in waterways causes significant water quality problems. Small and large floatables can inhibit the growth of aquatic vegetation, decreasing spawning areas and habitats for fish and other living organisms. Wildlife living in rivers and in riparian areas can be harmed by ingesting or becoming entangled in floating trash. Except for large items such as shopping carts, settleables are not always obvious to the eye. They include glass, cigarette butts, rubber,

[19] Water Quality Control Plan ("Basin Plan"), p. 3-9.
[20] Ibid., pp. 3-16.

construction debris and more. Settleables can be a problem for bottom feeders and can contribute to sediment contamination. Some debris (e.g. diapers, medical and household waste, and chemicals) are a source of bacteria and toxic substances. Floating debris that is not trapped and removed will eventually end up on the beaches or in the open ocean, repelling visitors away from our beaches and degrading coastal waters.

A major trash problem experienced in the Los Angeles River Watershed contributes to a broader phenomena that affects ocean waters, as small pieces of plastic called "nurdles" (defined as pre-production virgin material from plastic parts manufacturers, as well as post-production discards that are occasionally recycled) float at various depths in the ocean and affect organisms at all levels of the food chain. As sunlight and UV radiation render plastic brittle, wave energy pulverizes the brittle material, with a subsequent chain of nefarious effects on the various filter feeding organisms found near the ocean's surface. Studies in the North Pacific indicate that both large floating plastic and smaller fragments are increasing. As a result of increased reports of resin pellet ingestion by aquatic wildlife and evidence that the ingested pellets are harming wildlife, the Interagency Task Force on Persistent Marine Debris (ITF) identified resin pellets, also know as plastic pellets, as a debris of special concern.[21] When released into the environment, these pellets either may float on or near the water surface, may become suspended at mid-depths, or may sink to the bottom of a water body. Whether a specific pellet floats or sinks depends on the type of polymer used to create the pellet, on additives used to modify the characteristics of the resin, and on the density of the receiving water.

A 1999 study of Marine Debris in the Mid-Pacific Gyre in an attempt to assess the potential effects of ocean particles on filter feeding marine organisms, collected plankton samples at various locations throughout the gyre. The results were stunning: the mass of plastic particles collected was six times higher than the mass of plankton (841 g/km^2), although the number of planktonic organisms (1,837,342/km^2) was five times the number of plastic pieces. The distribution of the sampling points allows one to assume that this number can be safely extrapolated to the breadth of the Mid-Pacific Gyre. A remarkable finding was that the number of particles did not increase in successively smaller size classes as expected, indicating there may be non-selective removal by mucus web-feeding jellies and salp. In this study, the most common type of identifiable particle, thin plastic film, accounted for 29% of the total. Many birds will die from ingesting this non-nutritive plastic.[22]

The prevention and removal of trash in the Los Angeles River ultimately will lead to improved water quality and protection of aquatic life and habitat, expansion of opportunities for public recreational access, enhancement of public interest in the rivers and public participation in restoration activities, and propagation of the vision of the river as a whole and enhancement of the quality of life of riparian residents.

[21] US Environmental Protection Agency (US EPA) (1992) **Plastic Pellets in the Aquatic Environment: Sources and Recommendations.**

[22] Moore, C.J. et al. **Marine Debris in the North Pacific Gyre, 1999, with a Biomass Comparison of Neustonic Plastic and Plankton**. (in preparation)

E. Extent of the Trash Problem in the Los Angeles River

Trash is a water quality problem throughout the Los Angeles River. The Regional Board has determined that current levels of trash exceed the existing Water Quality Objectives necessary to protect the beneficial uses of the river.

For many years, Los Angeles County and other cities have recognized that trash is a problem.[23] The Los Angeles County Department of Public Works is reporting a "30% decrease in roadway trash on unincorporated County roads and a 50% decrease in trash entering catchbasins since adoption of the current National Pollutant Discharge Elimination System (NPDES) Permit".[24] However, trash in the Los Angeles River continues to be a serious problem.

Every city in the watershed agrees that the amount of trash found in the waterways is excessive, and that trash is found in all reaches of the river from Calabasas to Long Beach, and in all tributaries. Although the Regional Board has not yet received the data that the Los Angeles County Department of Public Works used for its findings, Regional Board staff regularly observe trash in the waterways of this watershed. Non-profit organizations such as Heal the Bay, Friends of the Los Angeles River (FoLAR) and others, organize volunteer clean-ups periodically, and document the amount of trash that was removed on such days, but these data do not indicate how long the trash had been accumulating at that particular site, only the amount that was picked up by the volunteers on a given day.

For example, at Coastal Clean-up Day in 1996, 26,300 lbs of trash were collected in Los Angeles County. During the September 18, 1999, California Coastal Clean up organized by Heal the Bay, a total of 60,711 lbs of trash were collected.[25]

At a clean-up organized during the Sacred Music Festival on Saturday, October 16, 1999, between Los Feliz Boulevard and Fletcher Drive over a distance of slightly under 1.5 miles, eleven shopping carts and six 40-gallon bags of trash were removed (see Figure D). However, this was not the total amount of trash on site, as Regional Board staff noticed more shopping carts and more trash on the same site the very next afternoon.[26] Meanwhile, the purpose of volunteer clean-ups is to visibly clean the river and its banks, not to quantify debris. As a result, it is likely that some of the debris collected during those events are not recorded. In

[23]See comments from Los Angeles County, Agoura Hills, Artesia, Beverly Hills, Hermosa Beach, Hidden Hills, Carson, Diamond Bar, La Habra Heights, La Mirada, La Puente, Monrovia, Norwalk, Rancho Palos Verdes, Rolling Hills, San Fernando, San Marino, West Hollywood, Westlake Village, and the Executive Advisory Committee (Stormwater Program - Los Angeles County) on behalf of all the Los Angeles County cities, submitted in response to the first draft of this Trash TMDL for the Los Angeles River Watershed.

[24]Comment letter from County of Los Angeles, Department of Public Works, May 15, 2000, p. 1.

[25] Alix Gerosa, Heal the Bay, November 22, 1999.

[26] Trash observed by Regional Board staff on October 17, 1999, included mixed polystyrene waste (cups, plates and others), plastic bags, cement, sound boards, large clusters of cigarette butts, disposable plastic glass lids, aluminum wrappers, balloons, medications, plastic bottles, clothing, books, and aerosol paint cans.

addition, volunteers traditionally focus on larger, more visible debris to the exclusion of smaller debris which are commonly encountered, such as cigarette butts.

Figure D. Trash waiting for pick-up at Los Feliz Boulevard after the Sunday, October 16, 1999 river clean-up.

Several studies which attempted to quantify trash generated from discreet areas have been completed, but they concern relatively small areas, or relatively short periods, or both. The findings of some of these studies are discussed below.

The City of Calabasas cleaned out the Continuous Deflective Separation (CDS) Unit they had installed in December of 1998, on September 28, 1999. This CDS unit, located in Calabasas at the intersection of Las Virgenes Road and Agoura Road, collects trash from the runoff of a small storm drain, as well as part of the runoff from Calabasas Park Hills (Santa Monica Mountains), and eventually empties to Las Virgenes Creek. It is assumed that this CDS unit prevented all trash from passing through. The calculated area drained by this CDS Unit, as provided to the Regional Board by Los Angeles County Department of Public Works staff, amounts to 12.8 square miles. The urbanized area was estimated by Regional Board staff to amount to 0.10 square miles of the total area. The result of this clean-out, which represents approximately half of the 1998-1999 rainy season, was 2,000 gallons of sludgy water and a 64-gallon bag about two-third full of plastic food wrappers. It is assumed that part of the trash that accumulated in the CDS unit over roughly half of the rainy season had decomposed in the unit, hence the absence of paper products. Given the CDS unit was cleaned out after slightly more than nine months of use, it was assumed that this 0.10 square mile urbanized area produced a volume of 64 gallons of trash over one year. This datum will be used as the default value for the implementation plan. Although other studies are informative, studies currently available to the Regional Board provide insufficient data and could not be applied directly to establishing trash generation rates.

The City of Los Angeles conducted an Enhanced Catch Basin Cleaning Pilot Project in compliance with a consent decree between the United States Environmental Protection Agency, the State of California, and the City of Los Angeles. The project goals were to

determine debris loading rates, characterize the debris, and find an optimal cleaning schedule through enhancing catch basin cleaning. The project evaluated trash loading at two drainage basins:

-The Hollywood Basin (1,366 acres and 793 catch basins) includes much of Hancock Park and is mostly residential with some commercial and open space, and no industrial land;

-The Sawtelle Basin (2,267 acres and 502 catch basins) includes residential areas with some commercial, industrial and transportation-related uses, and some open space.

The catch basins are inlet structures without a sump below the level of the outlet pipe to capture solids and trash washed down by the stormwater.[27] These inlets also collect trash, grass clippings and animal wastes during dry weather. Catch basins were cleaned 3-4 times from March 1992 to December 1994 and yielded approximately 0.79 yd^3 (160 Gal) of debris per cleaning (Sawtelle – 1.04 yd^3 (210 Gal) and Hollywood – 0.61 yd^3 (123 Gal)), characterized as paper (26%), plastic wastes (10%), soil (33%), and yard trimmings (31%).

The study also observed that the amount of plastic waste was less in residential areas and greater in non-residential areas, that paper waste was greater in commercial areas, and that soil and yard waste was greater in residential areas and open spaces.[28]

Long Beach collects large amounts of trash at the mouth of the Los Angeles River, as much of the trash carried down the Los Angeles River ends up at the river's mouth in Long Beach. Debris tonnage at the mouth of the Los Angeles River is listed in Table 2.

Table 2. Storm Debris Collection Summary for Long Beach: Debris is measured in Tonnage.[29]

Storm Year	First Quarter (July-Sept.)	Second Quarter (Oct.-Dec.)	Third Quarter (Jan.-March)	Fourth Quarter (April-June)	Total
1994-95	436	509	3,576	702	5,224
1995-96	504	344	3,100	645	4,593
1996-97	350	2,361	601	681	3,993
1997-98	647	3,650	4,016	977	9,290
1998-99	565	720	532	1,274	3,091
1999-00	781	176	1,664	1,223	3,844
2000-01	757	581	2,625	474	4,437
2001-02	424	739	288	407	1,858
2002-03	430	752	2,564	884	4,630
2003-04	299	779	607	951	2,636

[27] Such structures are usually termed *catchments*, but the term *catch basin* is used throughout Southern California. The absence of flow during dry weather allows trash to collect at the inlet. (Phone conversation with Wing Tam, City of Los Angeles, November 10, 1999.)

[28] This information and all of the above concerning the City of Los Angeles Enhanced Catch Basin Cleaning was found in: City of Los Angeles Department of Public Works, Bureau of Sanitation: Consent Decree Report, Enhanced Catch Basin Cleaning, April 1999. (Unpublished report.)

[29] City of Long Beach *L.A. River Debris Summary* (as of June 2006).

Storm Year	First Quarter (July-Sept.)	Second Quarter (Oct.-Dec.)	Third Quarter (Jan.-March)	Fourth Quarter (April-June)	Total
2004-05	273	4,390	6,176	1,416	12,255
2005-06	561	495	862	670	2,591

IV. Numeric Target

The numeric target for this TMDL is 0 (zero) trash in the water. The numeric target is derived from the narrative water quality objectives, including an implicit margin of safety. Although a substantial number of comments were received in response to the March 17, 2000 Draft TMDL, no information was provided to justify any other number for the final TMDL target that would fully support the designated beneficial uses. The numeric target was used to calculate the Waste Load Allocations as described in the Implementation Plan (see Section VIII.)

V. Source Analysis

The major source of trash in the river results from litter, which is intentionally or accidentally discarded in watershed drainage areas. Transport mechanisms include the following:

1. Storm drains: trash is deposited throughout the watershed and is carried to the various reaches of the river and its tributaries during and after significant rainstorms through storm drains.

2. Wind action: trash can also blow into the waterways directly.

3. Direct disposal: direct dumping also occurs.

Extensive research has not been done on trash generation or the precise relationship between rainfall and its deposition in waterways. However, it has been found that the amount of gross pollutants entering the stormwater system is rainfall dependent but does not necessarily depend on the source (Walker and Wong, December 1999). The amount of trash which enters the stormwater system depends on the energy available to re-mobilize and transport deposited gross pollutants on street surfaces rather than on the amount of available gross pollutants deposited on street surfaces. The exception to this finding of course would be in the event that there is zero gross pollutants deposited on the street surfaces or other drainages tributary to the storm drain. Where gross pollutants exist, a clear relationship between the gross pollutant load in the stormwater system and the magnitude of the storm event has been established. The limiting mechanism affecting the transport of gross pollutants, in the majority of cases, appears to be re-mobilization and transport processes (i.e., stormwater rates and velocities).

Several studies conclude that urban runoff is the dominant source of trash. The large amounts of trash conveyed by urban storm water to the Los Angeles River is evidenced by the amount of as trash that accumulates at the base of storm drains. The amount and type of trash that is washed into the storm drain system appears to be a function of the surrounding land use.

A number of studies (Walker and Wong, 1999, Allison, 1995), have shown that commercial land-use catchments generate more pollutants than residential land use catchments, and as much as three times the amount generated from light industrial land use catchment. It is generally accepted that commercial land uses tend to contribute larger loads of gross pollutants per area compared to residential and mixed land-use areas. This is in spite of daily street sweeping in the commercial sub-catchment compared to once every two weeks in residential and mixed land use areas.

VI. Waste Load Allocations

Storm drains have been identified as a major source of trash in the Los Angeles River. The strategy for meeting the water quality objective will focus on reducing the trash discharged via municipal storm drains.

Waste Load Allocations are assigned to the Permittees and Co-permittees of the Los Angeles County Municipal Stormwater Permit (hereinafter referred to as Permittees) and Caltrans. In addition, Waste Load Allocations may be issued to additional facilities in the future under Phase II of the US EPA Stormwater Permitting Program. Waste Load Allocations assigned under the MS4 permit and the Caltrans permit will be based on a phased reduction from the estimated current discharge (i.e., baseline) over a 9-year period until the final Waste Load Allocation (currently set at zero) is met. Permittees under the Phase II Stormwater Permitting Program will also be assigned a final WLSA of zero trash discharge. The baseline allocation for the MS4 Permittees and Co-permittees (referred to hereinafter as the "Permittees") is derived from data collected during the Baseline Monitoring Program.

A. Reconsideration and Refinement Provision

The baseline Waste Load Allocations for the MS4 Permittees and Co-permittees have been modified from that assigned in the earlier trash TMDL. The Regional Board will review and reconsider the final Waste Load Allocations once a reduction of 50% of the Baseline Waste Load Allocation has been achieved. This means that the final Waste Load Allocation will be reviewed only after substantial reductions are achieved. This reconsideration of the Waste Load Allocation will be based on the findings of future studies regarding the threshold levels needed for protecting beneficial uses.

B. Default Baseline Waste Load Allocation

The Default Baseline Waste Load Allocation for the municipal stormwater permittees, in the earlier version of the trash TMDL was equal to 640 gallons of uncompressed trash per square mile per year. No differentiation was applied for different land uses in the Default Baseline Waste Load Allocation.

C. Refined Baseline Waste Load Allocations

The municipal stormwater permittees opted to seek refinement of the Default Baseline Waste Load Allocation by implementing a "Baseline Monitoring Plan." The goal of the Baseline Monitoring program was to derive a representative trash generation rate for various land uses from across the Los Angeles River watershed. The Baseline Waste Load Allocation for any single city is the sum of the products of each land use area multiplied by the Waste Load Allocation for the land use area, as shown below:

$$LA = \sum for\ each\ city \left(area\ by\ land\ uses \bullet allocations\ for\ this\ land\ use \right)$$

The urban portion of the Los Angeles River watershed was divided into twelve types of land uses for every city and unincorporated area in the watershed. Similar land use classifications already exist on the land use maps used by L.A. County Department of Public Works to assess the generation of certain pollutants by land use.[30] The land use categories are: (1) high density residential[31], (2) low density residential[32], (3) commercial and services, (4) industrial, (5) public facilities[33], (6) educational institutions[34], (7) military installations, (8) transportation[35], (9) mixed urban[36], (10) open space and recreation[37], (11) agriculture[38], and (12) water[39]. Given that the minimum mapping resolution is 2.5 acres, a non-critical land use unit may not be mapped if it is less than 2.5 acres in size[40].

The appendix contains a table which shows the square mileage for each land use for each city and unincorporated areas in the watershed, and a list of maps showing land uses for each city. Unincorporated areas include areas such as Altadena, East Compton, East Los

[30] The land use classification was developed by Aerial Information Systems as a modified Anderson Land Use Classification and originally included 104 categories. The land use coverages were donated for GIS library use by Southern California Association of Governments (SCAG), and show land use for 1990 and for 1993. The coverages were map-joined into a single coverage by Teale Data Center. The Regional Board layers were aggregated from the TDC coverage into the land uses shown above.

[31] High Density Residential includes High Density Single Family Residential and all Multi Family Residential, Mobile Homes, Trailer Parks and Rural Residential High Density.

[32] Under 2 units per acre.

[33] These include government centers, police and sheriff stations, fire stations, medical health care facilities, religious facilities large enough to be distinguished on an aerial photograph, libraries, museums, community centers, public auditoriums, observatories, live indoor and outdoor theaters, convention centers which were built prior to 1990, communication facilities, and utility facilities (electrical, solid waste, liquid waste, water storage and water transfer, natural gas and petroleum).

[34] Preschools and daycare centers, elementary schools, high schools, colleges and universities, and trade schools, including police academies and fire fighting training schools.

[35] Airports, railroads, freeways and major roads (that meet the minimum mapping resolution of 2.5 acres), park and ride lots, bus terminals and yards, truck terminals, harbor facilities, mixed transportation and mixed transportation and utility.

[36] Mixed commercial, industrial and/or residential, and areas under construction or vacant in 1990.

[37] Golf courses, local and regional parks and recreation, cemeteries, wildlife preserves and sanctuaries, botanical gardens, beach parks.

[38] Orchards and vineyards, nurseries, animal intensive operations, horse ranches.

[39] Open water bodies, open reservoirs larger than 5 acres, golf course ponds, lakes, estuaries, channels, detention ponds, percolation basins, flood control and debris dams.

[40] Critical land uses were mapped regardless of resolution limits. Critical land use units below 1 acre in size were mapped as 1-acre units.

Angeles, East Pasadena, East San Gabriel, Florence, La Crescenta, Mayflower Village, North El Monte, South San Gabriel, Walnut Park, Westmount and Willowbrook. For cities that are only partially located in the watershed, the square mileage indicated is for the part of this city that is in the watershed only.

Land uses that are not under municipal jurisdiction, such as military installations, will be dealt with through separate permits, and were thus not included in the calculation of the baseline Waste Load Allocations.

Each permittee will be allowed 60% of their baseline Waste Load Allocation during the first year of implementation, and subsequent annual reductions of 10% of from the baseline will be required through every year of implementation.

D. Baseline Waste Load Allocations for Caltrans

A Litter Management Pilot Study (LMPS)[41] was conducted to evaluate the effectiveness of several litter management practices in reducing litter that is discharged from Caltrans storm water conveyance systems. The LMPS employed four field study sites, each of which was used to test a separate BMP. Each site included three replicate testing pairs, consisting of one site designed to measure the amount of trash produced when treatment was applied, and one control with no treatment site. The LMPS averages the data collected at the control outfalls in order to obtain the annual litter loads. The average combined total loads for the three control outfalls at each site normalized by the total area of control catchments is presented in the following table, adapted from the LMPS report[42]:

Table 3. Average Combined Total Loads for Control Outfalls at 3 Litter Management Pilot Study (LMPS) Sites.

Site	Weight lbs/sq mi	Volume cu ft/sq mi
1E	10584.00	1312.97
1W	7479.36	971.73
6	7479.36	881.34
8	4374.72	404.51

The baseline Waste Load Allocation for weight and volume load generation for freeways is arrived at by averaging weight and volume columns. (see Table 4.) It is to be noted that control site 1E already had one BMP in place before testing of the other BMPs, as it was cleaned monthly through an "Adopt a Highway" program.

[41] California Department of Transportation District 7 Litter Management Pilot Study, June 2000. This study defined litter in stormwater as "manufactured items that can be retained by ¼-inch mesh made from paper, plastic, cardboard, etc.", and "that are not of natural origin (i.e. does not include sand, soil, gravel, vegetation, etc.)" (p. 1-2).

[42] Ibid., Table 6-8.

Table 4. A Preliminary Baseline Waste Load Allocation for Weight and Volume for Freeways.

Weight lbs/sq mi	Volume cu ft/sq mi
7479.36	892.64

Average Annual Daily Traffic (AADT) for all control sites in the study ranged from 216,000 to 238,000.[43] Considering AADT on Los Angeles County freeways may be close to 300,000 on some sections[44], the chosen sites, although typical freeway outfalls, are not distributed throughout the whole AADT range. As the purpose of the study was to assess the effectiveness of specific BMPs, not to assess a trash generation factor, sites were chosen with similar characteristics.

E. Baseline Waste Load Allocations for Municipal Permittees

Baseline Monitoring was conducted by the Los Angeles County Department of Public Works, as prescribed in the September 19, 2001 Los Angeles River Trash TMDL. The goal of the Baseline Monitoring Program was to collect representative data from across the watershed to refine the default Waste Load Allocations presented in the 2001 Los Angeles River Trash TMDL. Monitoring data was used to establish specific trash generation rates per land use. The land use categories that were monitored by the LACDPW baseline monitoring group (to determine land use based generation rates) were:

- High density residential,
- Low density residential,
- Commercial and services,
- Industrial, and
- Open space and recreation.

Public facilities-, Educational Institutions-, Mixed urban-, Agricultural-, and Water- land uses were exempt from monitoring.

In the analysis of the monitoring results provided by LACDPW, staff assumed the litter generation rate from public facilities and mixed urban landuse to be equivalent to that from the industrial land use. The transportation land use was equated with industrial land use, and agricultural land use was equated to open space. Water was assigned a litter generation rate of zero since it is not considered a generator of trash. The portion of the transportation land use that is under Caltrans' jurisdiction will be covered under Caltrans' permit. Major boulevards that are currently under Caltrans' jurisdiction, but are affected by trash generated on municipal sites, such as Santa Monica Boulevard, will be addressed by the cities concerned.

Military Installations were not included in the Waste Load Allocations of the cities that had this land use. Under EPA Phase II of the Storm Water Regulations, separate permits will be written for these facilities. While public educational institutions will also be covered under separate permits under Phase II, the analysis did not differentiate between public and private

[43] Ibid., Table 6-8.
[44] Information on AADT on select freeways can be found on Caltrans' website: http://www.caltrans.ca.gov/.

educational facilities under this landuse. Therefore, the cities have the option of providing information on the acreage of such land uses within their jurisdiction in order that contributions from these facilities be removed from their assigned baseline waste load allocations.

The baseline Waste Load Allocations for the municipal permittees is presented on a city by city basis in Table 5. A more detailed breakdown along land uses is provided in Appendix II. The Waste Load allocations for the first year of compliance will be a 40% reduction in the baseline Waste Load Allocation. The subsequent annual Waste Load Allocations will be a progressive 10% reduction in the baseline Waste Load Allocations over a period of 6 years, and apply except in areas serviced by Full Capture Systems. The values shown, in gallons, are in uncompressed volumes.

Table 5. Los Angeles River Trash TMDL Baseline Waste Load Allocations (gallons and lbs of trash) *Military Installations were not included in calculation of Baseline WLA

City	WLA (gals)	WLA (lbs)
Alhambra	39903	68761
Arcadia	50108	93036
Bell*	16026	25337
Bell Gardens	13500	23371
Bradbury	4277	12160
Burbank*	92590	170389
Calabasas	22505	52230
Carson	6832	10208
Commerce	58733	85481
Compton*	53191	86356
Cudahy	5935	10061
Downey	39063	68507
Duarte	12210	23687
El Monte	42208	68267
Glendale*	140314	293498
Hidden Hills	3663	10821
Huntington Park	19159	30929
Irwindale	12352	17911
La Cañada Flintridge	33496	73747
Long Beach*	87135	149759
Los Angeles*	1374845	2572500
Los Angeles County*	310223	651806
Lynwood	28201	46467
Maywood	6129	10549
Monrovia	46687	100988
Montebello	50369	83707
Monterey Park	38899	70456
Paramount	27452	44490
Pasadena*	111998	207514
Pico Rivera	13953	22549
Rosemead	27305	47378
San Fernando	13947	23077
San Gabriel	20343	36437
San Marino	14391	29147
Santa Clarita	901	2326
Sierra Madre	11611	25192
Signal Hill	9434	14220
Simi Valley	137	344
South El Monte	15999	24319
South Gate	43904	72333
South Pasadena	14907	28357
Temple City	17572	31819
Vernon	47203	66814
Caltrans	59421	66566

VII. Implementation and Compliance

As required by the Clean Water Act, discharges of pollutants to surface waters from storm water are prohibited, unless the discharges are in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit. Discharge of trash to the Los Angeles River will be regulated via the Municipal NPDES Storm Water Permits and the Caltrans stormwater permit. In addition, USEPA Phase II stormwater permits, general permits, and industrial permits may also be used to regulate discharges of trash to the river.

In June 1990, the first Municipal NPDES Storm Water Permit was issued jointly to Los Angeles County and 84 cities as co-permittees. A separate NPDES Storm Water Permit was issued to the City of Long Beach on June 30, 1999. Storm water municipal permits will be one of the implementation tools of this Trash TMDL, and will include the allocations as effluent limits or other permit requirements. Thus, future storm water permits will be modified to incorporate the Waste Load Allocations and to address monitoring and implementation of this TMDL.

The implementation and compliance schedule is designed to accommodate trash reduction efforts that have been conducted by several cities and the county throughout the Los Angeles River Watershed, in response to the previously adopted trash TMDL. The calculated baseline waste load allocations are derived from data collected during the 2002/03 and 2003/04 storm years. The initial compliance requirement of a 40% reduction from baseline trash levels assumes a 10% reduction per year in trash discharges from the end of the baseline monitoring period. Flexibility is provided by determining compliance based on a 2-year average in the second year and 3-year rolling averages in subsequent years until the numeric target of a zero discharge is attained. The purpose of the rolling averages is to account for fluctuations in trash discharge rates that may occur as a result of variations in annual rainfall patterns and/or littering and trash removal. This approach ensures that measurable reductions to the trash impairment will be achieved in a timely manner, while flexibility in implementation is provided for the responsible agencies

A. Compliance Determination

For those areas not covered by Full Capture Systems, compliance with the Waste Load Allocations will be calculated as follows:

The first compliance date during the Implementation Phase will be September 30, 2007. Compliance will be evaluated based on the total load discharged to the river during the period October 1, 2007 through September 30, 2008. The second compliance date will be based on the average annual load discharged to the river from October1 2007 through September 30, 2009. Compliance thereafter will be evaluated at the end of each successive storm season and will be based on a rolling three-year average (see Table 6). This method will provide allowances for variability due to rainfall. Exceedance of the allowable discharges will subject the permittee to

enforcement action. A summary of the schedule for determining compliance with the Waste Load Allocations is presented in Table 6.

The final waste load allocation will be considered complied with when the Executive Officer finds that devices or systems and/or institutional controls have removed effectively 100% of the trash from the storm drain system discharge to Los Angeles River or its listed tributaries.

Table 6. Los Angeles River Trash TMDL: Implementation Schedule.[45]

(Required percent reductions based on initial baseline wasteload allocation of each city)

Year	Implementation	Waste Load Allocation	Compliance Point
1 Sept 2008	Implementation: Year 1	60% of Baseline Waste Load Allocations for the Municipal permittees; and Caltrans	Compliance is 60% of the baseline load
2 Sept 2009	Implementation: Year 2	50% of Baseline Waste Load Allocations for the Municipal permittees; and Caltrans	Compliance is 55% of the baseline load calculated as a 2-year annual average
3 Sept 2010	***Implementation: Year 3***[46]	40% of Baseline Waste Load Allocations for the Municipal permittees; and Caltrans	Compliance is 50% of the baseline load calculated as a rolling 3-year annual average
4 Sept 2011	***Implementation: Year 4***	30% of Baseline Waste Load Allocations for the Municipal permittees; and Caltrans	Compliance is 40% of the baseline load calculated as a rolling 3-year annual average
5 Sept 2012	***Implementation: Year 5***	20% of Baseline Waste Load Allocations for the Municipal permittees; and Caltrans	Compliance is 30% of the baseline load calculated as a rolling 3-year annual average
6 Sept 2013	Implementation: Year 6	10% of Baseline Waste Load Allocations for the Municipal permittees; and Caltrans	Compliance is 20% of the baseline load calculated as a rolling 3-year annual average
7 Sept 2014	Implementation: Year 7	0% of Baseline Waste Load Allocations for the Municipal permittees; and Caltrans	Compliance is 10% of the baseline load calculated as a rolling 3-year annual average
8 Sept 2015	Implementation: Year 8	0% of Baseline Waste Load Allocations for the Municipal permittees; and Caltrans	Compliance is 3.3% of the baseline load calculated as a rolling 3-year annual average
9 Sept 2016	Implementation: Year 9	0% of Baseline Waste Load Allocations for the Municipal permittees; and Caltrans	Compliance is 0% of the baseline load calculated as a rolling 3-year annual average

[45] "Notwithstanding the zero trash target and the baseline waste load allocations shown in Table 5, a Permittee will be deemed in compliance with the Trash TMDL in areas served by a Full Capture System within the Los Angeles River Watershed."

[46] As specified in Section VI.A., the Regional Board will review and reconsider the final Waste Load Allocations once a reduction of 50% has been achieved and sustained in the watershed.

B. Compliance Strategies

Permittees may employ a variety of strategies to meet the progressive reductions in their Waste Load Allocations. These strategies may be broadly classified as either:

- Full capture systems or
- Partial capture control systems and/or
- Institutional controls.

A permittee could comply with the successive reduction in Waste Load Allocations by installing Full Capture Systems progressively throughout the watershed until all of the outlets to the Los Angeles River system are covered. This approach may be best suited for open space areas, where low levels of trash may accumulate over large vegetated drainage areas. However, in more urban settings, institutional controls including enforcement of litter laws and more frequent street sweeping may be preferred.

It is to be noted that ordinances that prohibit litter are already in place in most cities. For example, the Los Angeles City Code of Regulations recognizes that trash becomes a pollutant in the storm drain system when exposed to storm water or any runoff and prohibits the disposal of trash on public land:

> No person shall throw, deposit, leave, cause or permit to be thrown, deposited, placed, or left, any refuse, rubbish, garbage, or other discarded or abandoned objects, articles, and accumulations, in or upon any street, gutter, alley, sidewalk, storm drain, inlet, catch basin, conduit or other drainage structures, business place, or upon any public or private lot of land in the City so that such materials, when exposed to storm water or any runoff, become a pollutant in the storm drain system. (City Code of Regulations, §64.70.02.C.1(a).)

Institutional controls provide several advantages over structural full capture systems. Foremost, institutional controls offer other societal benefits associated with reducing litter in our city streets, parks and other public areas. The capital investment required to implement institutional controls is generally less than for full capture systems. However, the labor costs associated with institutional controls may be higher, and institutional controls may be more costly in the long-term.

There have been a number of discussions as to how permittees may best implement the gradual reductions required by this Trash TMDL, and as to the types of devices or best management practices they should elect. The permittees will be free to implement trash reduction in any manner that they choose.

A discussion of the means for determining compliance for various implementation strategies is presented in the following subsections.

1. Full Capture Treatment Systems

The amount of trash discharged to the river by an area serviced by a full-capture system will be considered to be in compliance with the final Waste Load Allocation for the drainage area, provided that the Full Capture Systems are adequately sized, maintained and maintenance records are available for inspection by the Regional Board. Compliance with the final Waste Load Allocation will be assumed wherever Full Capture Systems are installed in the Los Angeles River Watershed. The installation of a Full Capture System by a discharger does not establish any presumption that the system is adequately sized, and the Regional Board reserves the right to review sizing and other data in the future to validate that a system satisfies the criteria established in this TMDL for a Full Capture System.

2. Partial Capture Treatment Systems and Institutional Controls

Measuring the effectiveness of partial-capture systems and institutional controls is more complicated. The discharge resulting from an area addressed by partial capture and/or institutional controls will be estimated using a mass balance approach, based on the daily generation rate (DGR) for the specific area. [Note: The DGR should not be confused with the trash generation rates obtained during baseline monitoring. The baseline monitoring program is designed to obtain "typical" trash generation rates for a given land use. Those values are then used to calculate a Permittee's baseline load allocation. The DGR is the average amount of trash deposited within a specified drainage area over a 24-hour period. The DGR will be used in a mass balance equation to estimate the amount of trash discharged during a rain event.] (See Example 1.)

Annual re-calculation of the DGR will serve as a measure of the effectiveness of source reduction measures including public education, enforcement of litter laws, etc. Source reduction measures will be accredited based on an annual recalculation of the DGR to allow for progressive improvement and/or to account for backsliding.

The DGR will be determined from direct measurement of trash deposited in the drainage area during any 30-day period from June 22nd to September 22nd of a given year[47], and re-calculated every year thereafter. This three-month period was assumed to be a time characterized by high outdoor activity when trash is most likely to be deposited on the ground. The recommended method for measuring trash during this time period is to close the catch basins in a manner that prevents trash from being swept into the catch basins and then to collect trash on the ground via street sweeping, manual pickup, or other comparable means. The DGR will be calculated as the total amount of trash collected divided by 30 (the required duration of trash collection).

[47] Provided no special events are schedule that may affect the representative nature of this period.

Accounting of DGR and trash removal via street sweeping, catch basin clean outs, etc. will be tracked in a central spreadsheet or database to facilitate the calculation of discharge for each rain event. The spreadsheet and/or database will be available to the Regional Board for inspection during normal working hours. The database/spreadsheet system will allow for the computation of calculated discharges and can be coordinated with enforcement. This database will be developed by cities or groups of cities.

The Executive Officer may approve alternative compliance monitoring programs other than those described above, upon finding that the program will provide a scientifically-based estimate of the amount of trash discharged from the storm drain system.

3. Examples of Implementation Strategies

Two example control strategies for municipal stormwater discharges are described in this section.

Example 1.

A permittee installs catch basin inserts and "dry weather trash door" devices of the type that maintains the catch basin shut during dry weather, and implements regular street sweeping. After each storm of 0.25 inch or greater, the catch basin inserts are emptied. In this case, the DGR was calculated during the month of July as follows:[48]

DGR = (Volume of trash collected via street sweeping during the month of July / 31 days.)

The stormwater discharge for a given rain event then would be calculated by multiplying the number of days since the last street sweeping by the DGR and subtracting the volume of trash recovered in the catch basin inserts.

Stormwater Discharge = [(Days since last street sweeping) (DGR)] –
[Volume of trash recovered from catch basin inserts]

Example 2.

City X is comprised of three land use areas (Land Uses A, B, and C). The city has adopted an implementation strategy using a combination of full capture structural and institutional controls. As of year five, the city has installed full capture systems in Area A and institutional controls in Area B. City X has not yet taken any action to control trash in Area C. The watershed-wide baseline Waste Load Allocation have been established at 100 lbs per square mile for Land Uses A and B, and at 200 lbs per square mile for landuse C. The full capture system is assumed to meet the final Waste Load Allocation. The city's mass balance calculations show that 100 lbs of trash was discharged from Land Use Area B. The discharge from Land Use Area C is assumed to be the base load allocation since no controls were

[48] In the event that trash generation rates differ between weekday and weekends, a distinction in the DGRs may be warranted.

implemented and the daily generation rate has not been established. As shown in Figure E City X's discharge for the year was 1,100 lbs, and the 3-year rolling average discharge was less than the 5-Year Waste Load Allocation. Therefore the city was found to be in compliance with its discharge loading unit.

4. Potential Environmental Impact of Implementation Strategies

An accompanying CEQA Checklist document analyses the potential negative environmental impacts of compliance with the trash TMDL based on the implementation strategies discussed above. The previous Los Angeles River Trash TMDL became effective in 2002 and several municipalities have completed projects in which storm sewer catchment basins were retrofitted with inserts and vortex separation devices were installed within storm drain systems. The most significant environmental impacts have proved to be construction activities associated with the installation of these devices, and maintenance activities. Construction impacts from structural measures are similar to those of small scale public works projects that are sited in previously developed areas. The major construction activities appear to be concrete and electrical work, and in some areas, earth work associated with structural improvements. The environmental impacts and mitigation methods for these types of activities are well known. The environmental impacts from maintenance of the structural measures are associated with removing and disposing trash collected from the structural devices.

Regarding cumulative impacts, it is noted that both the construction and maintenance activities are in small, discrete, discontinuous areas over a short duration. Consequently, cumulative impacts are not significantly exacerbated from the sum of individual project impacts. Project level environmental analysis, by municipalities and responsible agencies for implementation of structural methods, were conducted under notices of exemption. Categorical exemptions were based on the nature of the projects including:

-Minor alteration of existing public structures involving negligible expansion of an existing facility.
-Modifications of existing storm drain system and addition of environmental protection devices in existing structures with negligible or no expansion of use.
-Modifications to sewers constructed to alleviate a high potential or existing public health hazard.

The analysis concludes that the implementation of this TMDL will result in improved water quality in the Los Angeles River Watershed, but may result in temporary or permanent localized significant adverse impacts to the environment. While specific projects employed to implement the TMDL may have significant impacts, these impacts are expected to be limited, short-term or may be mitigated through careful design and scheduling. Furthermore, to the extent the alternatives, mitigation measures, or both, are not deemed feasible by those agencies, the necessity of implementing the federally required TMDL and removing the trash impairment from the Los Angeles River the Watershed (an action required to achieve the express, national policy of the Clean Water Act) outweigh the unavoidable adverse environmental effects, as they will be minimal because project level planning, construction, and operation methods are available to

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Technical Report:
Assessment of Catch Basin Opening Screen Covers

JUNE 2006

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Technical Report:
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JUNE 2006

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Executive Summary

Introduction

The intent of this report is to present the results gathered by the City of Los Angeles through a pilot study on the effectiveness of catch basin opening screen covers in complying with the Trash TMDL.

In compliance with the Federal Clean Water Act (CWA) and existing consent decree between the U.S. EPA and the environmental groups, the Los Angeles Regional Water Quality Control Board (RWQCB) approved the Trash Total Maximum Daily Loads (TMDLs) for the Los Angeles River and Ballona Creek and Wetlands on September 19, 2001. The Trash TMDL requires a reduction of 10% of trash per year for a ten-year period ending in year 2013. The RWQCB has based compliance on a three-year rolling average, with the milestone in September 2006 when the City must achieve a 20% trash reduction.

Pilot Study

The sole purpose of the pilot study was to determine the CB opening screen cover deflection effectiveness during the wet season for trash greater than 0.75 inches. A typical year experiences approximately twenty-five (25) wet days and three hundred forty (340) dry days. The pilot study location is located in the Westlake area of the City, just west of downtown Los Angeles and has a drainage area approximately 55 acres. Stormwater runoff from this area is captured by a total of 24 catch basins and a CDS unit located at the base of this drainage area. All 24 catch basins were retrofitted with

opening screen covers having diamond shape openings measuring 1 inch in the longitudinal direction by ¾ inch in the vertical direction. This means all trash greater than 1 inch would remain out in the street. These covers remain in the closed position by means of two magnetic anchors at each end that release when runoff from a storm builds up to approximately 60% of the curb height. Once the flow diminishes, the screen swings into the closed position and locks itself by means of the magnet anchors. Field measurements from the catch basins and the CDS unit were obtained for this past wet season, FY 2005/06, by crews from the Wastewater Collection Systems Division following storms greater than 0.25 inches.

Conclusion

At the conclusion of the study, the effectiveness of the covers in deflecting trash during a storm greater than 0.25 inches was determined to be 58% to 79% percent. It should be noted that dry days account for approximately ninety-three percent (93%) of the total calendar days in the City. For dry days the trash deflection effectiveness of the opening screen cover will be considered 85 percent, given that the screen will remain closed position and only trash smaller than one (1) inch will enter the catch basin. Therefore, using a 1:9.3 weighted average over an entire year, the opening screen cover will have an **86 percent effectiveness rate.**

CHAPTER 1

PILOT STUDY

Background

The intent of this report is to present the results gathered by the City of Los Angeles through a pilot study on trash capture effectiveness of catch basin opening screen covers.

In compliance with the CWA and existing consent decree between the U.S. EPA and the environmental groups, RWQCB approved the TMDLs for the Los Angeles River and Ballona Creek and Wetlands on September 19, 2001. This Trash TMDL requires a reduction of 10% of trash per year for a ten-year period. The RWQCB has based compliance on a three-year rolling average, with the first milestone in September 2006 when the City must achieve a 20% trash reduction.

The RWQCB further identified trash in urban runoff that is conveyed through the storm drain as a primary source of pollution reaching the Los Angeles River and Ballona Creek. Trash that gets into the water bodies can cause water quality problems. Settables, such as glass, cigarette butts, rubber, and construction debris, can be a problem for bottom feeders and can contribute to sediment contamination. Some debris, such as diapers, medical and household waste, is a source of bacteria and toxic substances. The Trash TMDL identified the following beneficial uses as being impaired due to trash in these water bodies: 1) contact recreation like bathing and swimming; 2) non-contact recreation such as fishing, hiking, jogging, and bicycling; and 3) habitat for aquatic life and bird life.

Throughout this pilot study the word "trash" is used to represent sediment, debris, vegetation and litter and should not be misconstrued to represent only anthropogenic trash.

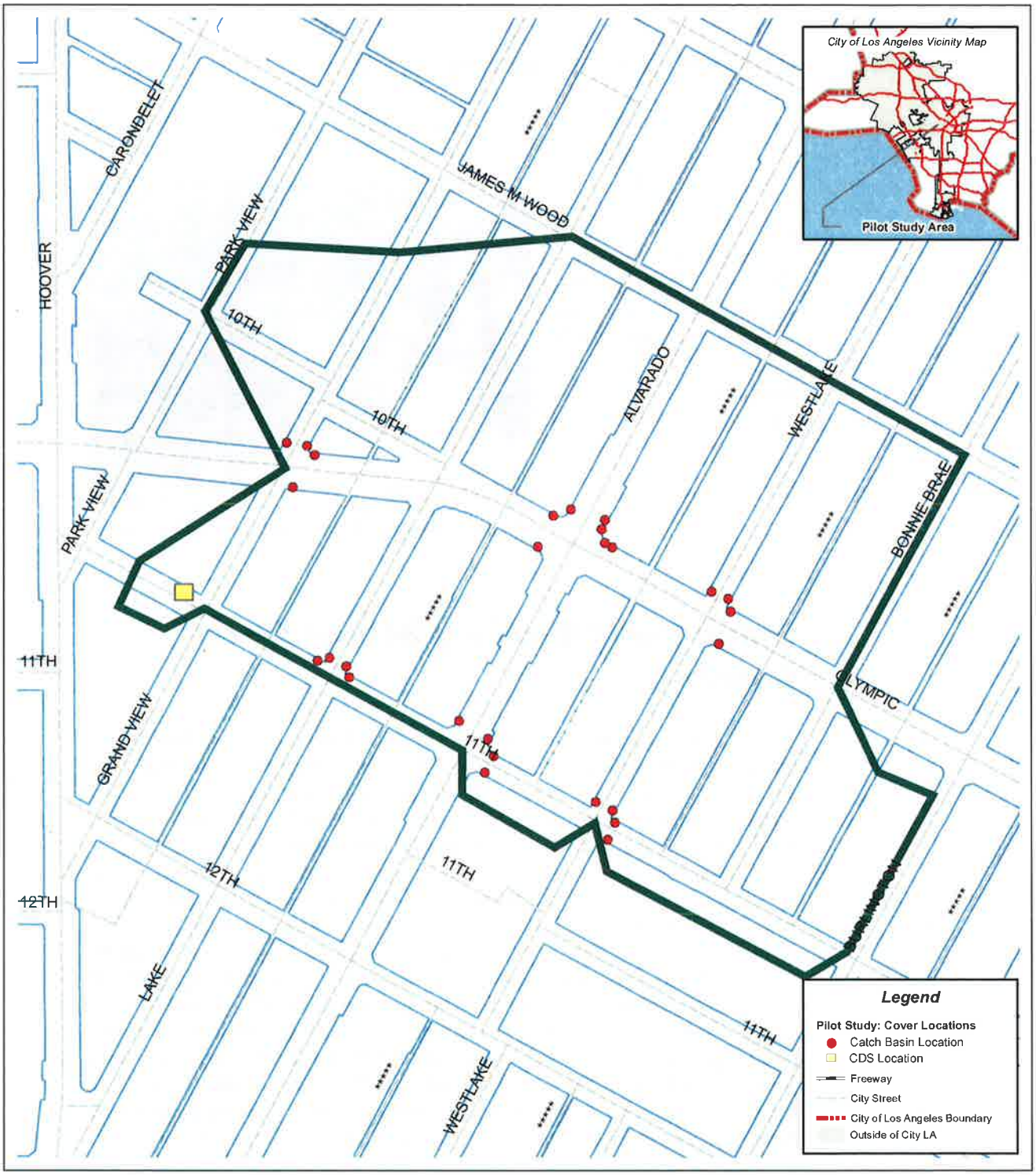
Description of Study Area

The catch basins retrofitted with opening screen covers were located west of the downtown Los Angeles Civic Center in the Westlake area of the City in close proximity to Koreatown (See Figure 1.1). The drainage area is approximately 55 acres, with three-quarters commercial and the remaining multi-family residential landuses (see Figure 1.2). This area is regarded as a high trash generation area within the City.

Figure 1. Westlake Area (Grand View / Olympic Blvd)

Catch Basin Opening Screen Cover Details

All the opening screen covers being evaluated have been purchased and installed by Practical Technology, Inc. They have been manufactured from ASTM A36 steel, hot dipped galvanized expanded metal with diamond shape openings (1 inch longitudinal by ¾ inch vertical). The screen covers have a smooth edge around the perimeter with no prongs or jagged edges. The opening screen covers encompass the entire curb opening. The opening screen covers were designed to block trash while allowing surface runoff to enter the catch basin. In the event that material obstructs the screen and results in localized ponding, the screen will open due to hydraulic force. The cover is maintained in the closed position by magnets of predetermined force that will release at approximately 60% curb face flow height generated by a moderate to severe storm. At this point the cover will swing open inwards to relieve this condition. Up to this point all trash greater than 1 inch mobilized by this flow will remain outside of the catch basin. See Figures 1.3 through 1.5 for actual pictures of the opening screen cover and Figure 1.6 for the opening screen cover operational sequence.



0 0.010.02 0.04 0.06 Miles

Figure 1.1 Study Area: Catch Basin Locations

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PROGRAM MANAGER

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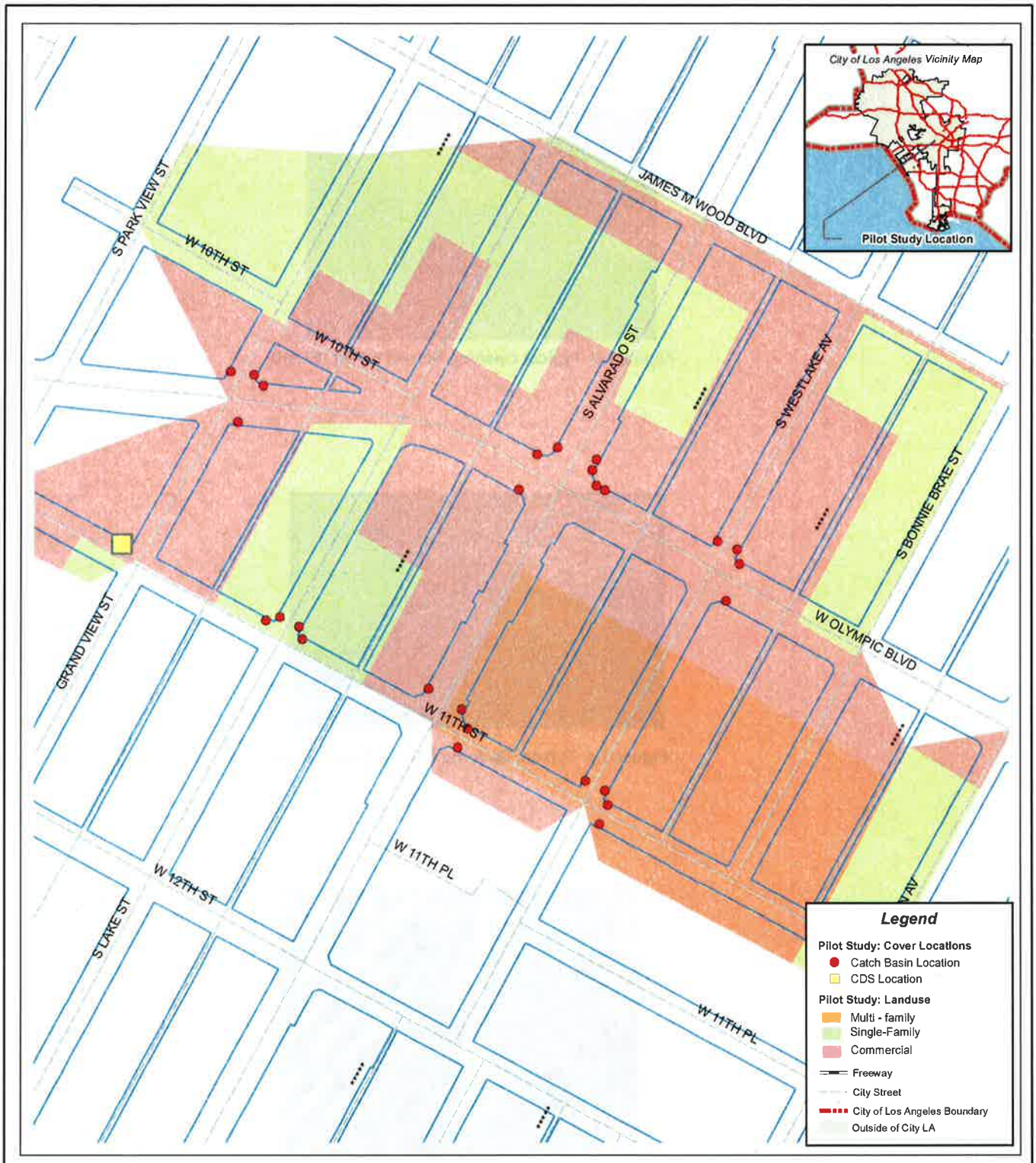

Figure 1.2 Study Area: Landuse

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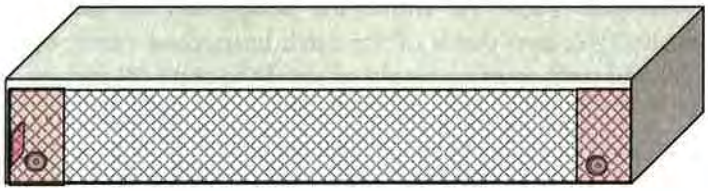
WATERSHED PROTECTION

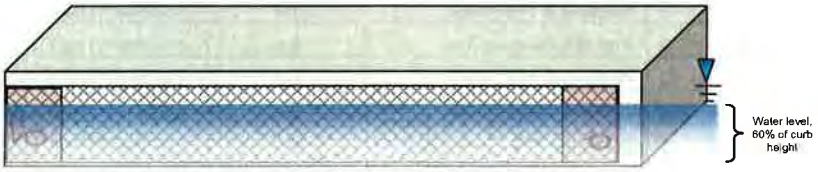
Figure 1.3 Typical Opening Screen Cover (Front)

Figure 1.4 Typical Opening Screen Cover (Back)

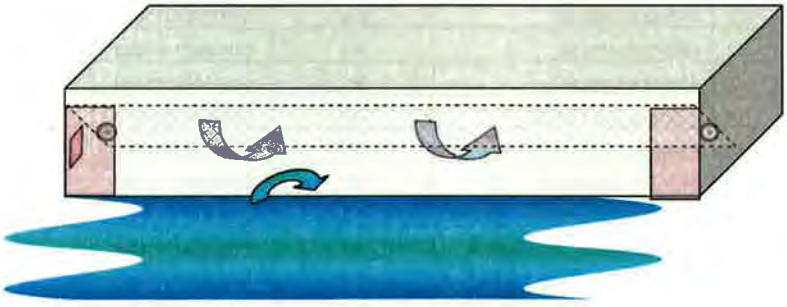
Figure 1.5 Typical Opening Screen Cover Magnet Locking Mechanism



a. Closed position



b. Prior to opened position



c. Open position (flow recedes, cover returns to closed position)

Figure 1.6 Catch Basin Opening Cover operation sequence

Catch Basin and Hydrodynamic Device Details

Catch Basins

The physical parameters of the catch basins included in the study were consistent. Table 1.1 shows the parameters for each CB. As the Table shows, over two-thirds of the catch basins had a curb opening length of 3.5 feet and curb opening height of six (6) to eight (8) inches.

Table 1.1 Pilot Study Catch Basin Parameters

No.	Address	Location	Clamms	Catch Basin Curb Opening	
				Length	Height
				Feet	Inches
1	Westlake & 11th Street	NW	51605461111089	2	8
2	11th St & Westlake Ave	ES	51605461111097	2	8
3	Westlake & 11th Street	NE	51605461111093	3	6
4	11th St & Westlake Ave	EN	51605461111095	3	8
5	Grandview St & Olympic Blvd	NW	51605461111027	3.5	7
6	2222 Olympic Blvd	ES	51605461111037	3.5	8
7	Olympic Blvd & Avarado St	WS	51605461111048	3.5	8
8	Olympic Blvd & Westlake Ave	EN	51605461111054	3.5	8
9	Olympic Blvd & Westlake Ave	ES	51605461111055	3.5	8
10	Lake St & 11th St	NW	51605461111063	3.5	8
11	11th St & Lake St	WN	51605461111064	3.5	8
12	Lake St & 11th St	NE	51605461111068	3.5	8
13	11th St & Lake St	EN	51605461111069	3.5	8
14	Alvarado St &11th St	NW	51605461111078	3.5	8
15	Alvarado St &11th St	NE	51605461111082	3.5	7
16	11th St & Avarado St	EN	51605461111084	3.5	8
17	11th St & Avarado St	ES	51605461111086	3.5	7
18	Grandview St & Olympic Blvd	NE	51605461111032	3.5	6
19	Alvarado St & Olympic Blvd	NW	51605461111040	7	8
20	Olympic Blvd & Avarado St	WN	51605461111041	7	8
21	Westlake & Olympic Blvd	NW	51605461111056	7	8
22	Westlake & Olympic Blvd	NE	51605461111066	7	8
23	Alvarado St & Olympic Blvd	NE	51605461111044	7	7
24	Alvarado St & Olympic Blvd	EN	51605461111050	7	8

Hydrodynamic Device – CDS

The drainage area in which these catch basins are located is serviced by a hydrodynamic unit installed on the downstream end of the mainline storm drain. The unit being used is a CDS Technologies Continuous Deflective Separation (CDS) unit Model PSW 70-70 with treatment design flow rate of 26.5 cubic feet per second (CFS). The CDS unit is located on Parkview St. and Grandview St. Figure 1.7 shows a typical CDS installation.

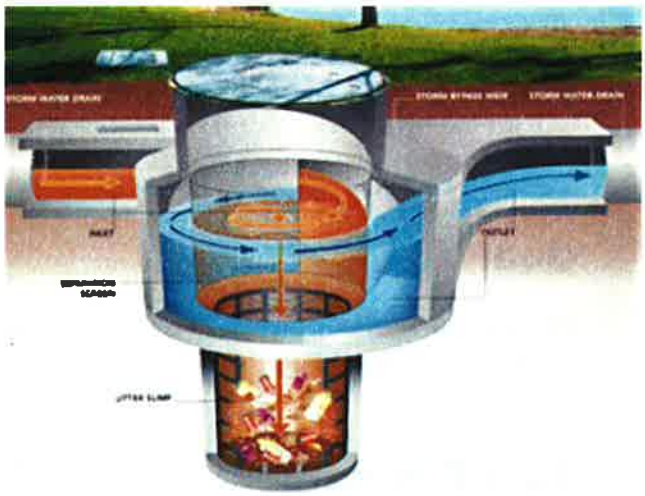


Figure 1.7. Typical CDS installation and operation

CHAPTER 2

PILOT STUDY – TEST PROTOCOL

Goal

The goal of this test protocol is: to determine the CB opening screen covers' effectiveness during rainy days with 0.25 inch or greater of rainfall.

Test Protocol

A. General

1. The covers evaluated for the pilot study were purchased from Practical Technology, Inc. They are constructed from hot dipped galvanized expanded metal with a diamond shape opening. The longer dimension of the opening is approximately 1 inch. Covers span the entire length of the curb opening and height.

2. Wastewater Collection Systems Division (WCSD) crews performed data collection and measurements following a storm event having an accumulation greater than 0.25 inches as measured at the civic center of the City of Los Angeles.

3. Existing data collection procedures were employed and amended, as necessary. Data from individual events were recorded in tabular form, using existing WCSD data collection forms or amended forms provided by Watershed Protection Division (WPD).

4. Existing historical CB and CDS cleaning data gathered for comparison with that of the data collection from this study.

5. Data collection and measurements were only performed if the storm events occurred ten or more days apart.

6. Precipitation data of every storm event were obtained from the County of Los Angeles, Department of Public Works real time rain gauge identified as the Los Angeles-Ducommun (#377, Lat. 34-03-09; Long. 118-14-13; Elev. 306). Data was be analyzed for total rainfall, one-hour maximum rainfall, and 30-minute maximum rainfall (rainfall intensity).

7. The following field conditions were recorded by WPD staff at the start of the study at each retrofitted CB:
   a. Location;
   b. Visual observations of street surroundings;
   c. Visual observations of inside of catch basin; and
   d. Street cleaning frequency at CB location.

8. The following field conditions were recorded by WCSD crews during data collection at each retrofitted catch basin :
   a. Existing weather condition;
   b. Visual observations for fullness of CB (i.e., none, minimal, ¼ full, ½ full, ¾ full, full);
   c. Visual observations for signs of ponding immediately adjacent to CB opening; and
   d. Other parameters, as the study proceeds.

9. Following each cleaning WCSD sent results to WPD for data assessment.

B. Evaluation of CB opening covers Effectiveness

Determination of an overall CB opening cover effectiveness relied on field measurements and visual observations.

1. WCSD crews visually monitored the CDS unit for floating trash after every storm event described. If no floating trash was visible, such results were recorded, otherwise crews removed the floating trash.

2. WCSD crews removed all accumulated trash after every storm from all retrofitted CBs. Removal of trash was performed using the described procedure.

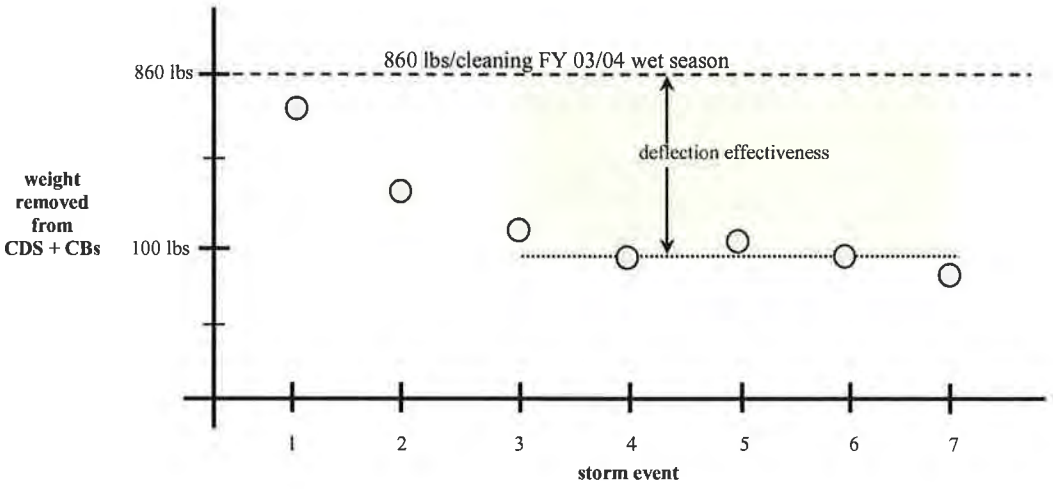
3. Effectiveness of screen covers (SC) was determined as follows:

$$SC_{effectiveness}\ \% = (TH_{tCDS + CBs} - TC_{tCDS + CBst} / TH_{tCDS + CBs}) \times 100$$

$TH_{CDS + CBs}$ = $Trash\ Historical_{tCDS + CBs}$
= *860 lbs (based on average 2003/2004 wet season cleaning)*

$TC_{CDS + CBs}$ = $Trash\ Current_{CDS + CBs}$

Below is an example of the methodology used:



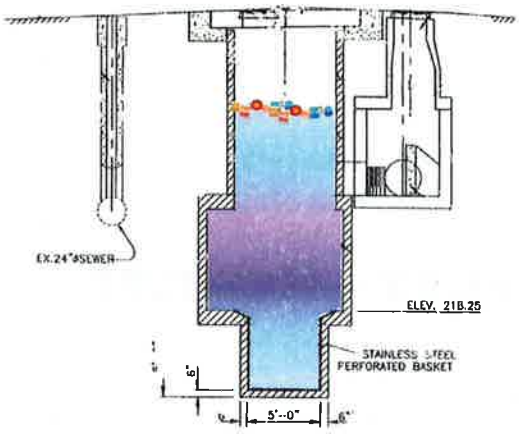
The data from the initial storm events may be discarded in that it is anticipated that the CDS unit will have trash that has already enter the storm drain system and catch basins prior to placement of the covers.

CHAPTER 3

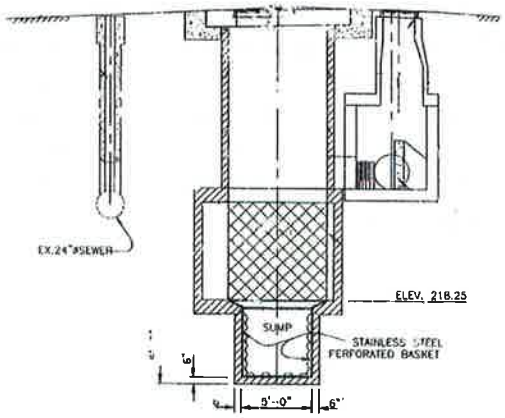
PILOT STUDY – RESULTS

The intent of this section is to present the results obtained by the Wastewater Collection System Division (WCSD) crews during the cleaning of the catch basins and CDS unit after every storm greater than 0.25 inch. There were a total of 4 rain events of a magnitude that triggered a cleaning event during the 2005/2006 wet season.

Data collection consistency was maintained by employing the same practice/protocol throughout the study. To ensure less variability in data gathered, at the start of the pilot study the CDS unit was thoroughly cleaned (emptied). Figure 3.1a shows the condition of the CDS unit prior to cleaning whereas Figure 3.1b shows condition after cleaning. During the study, only floatable material within the CDS were gathered as shown in Figure 3.2. Vactor trucks were used to remove all floatables from the surface and then proceeded to the Hyperion Treatment Plant to obtain the weight of the floatables. Every effort was made to decant the truck thoroughly prior to obtaining the wet weight of the floatables collected.

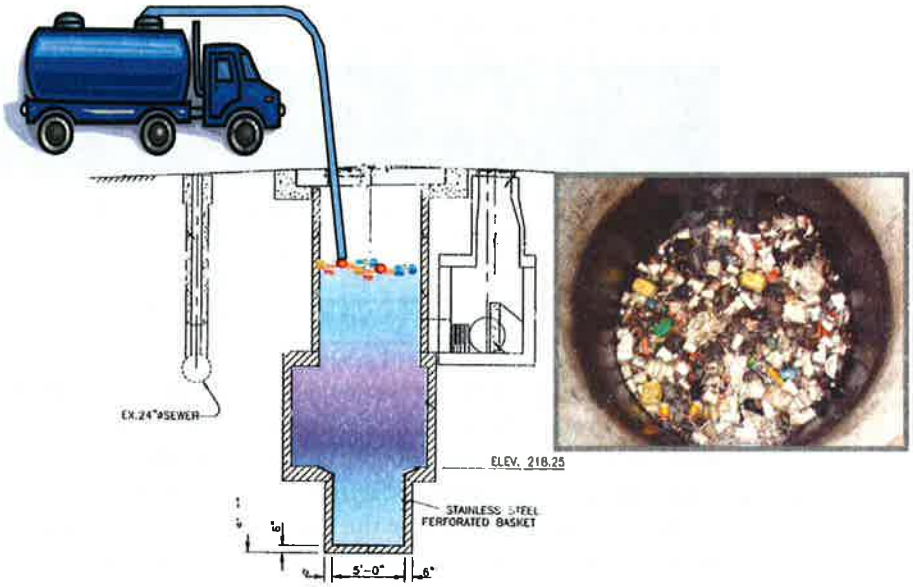


a. CDS unit prior to cleaning.

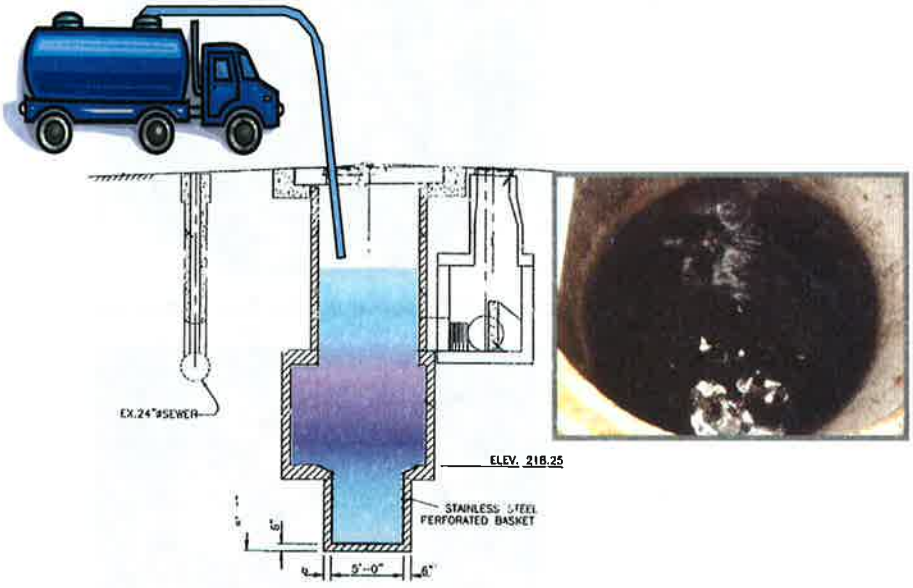


b. CDS unit after cleaning.

Figure 3.1 Preparation of CDS unit for pilot study



a. Contents of CDS unit after storm event



b. CDS unit after cleaning

Figure 3.2 Method of cleaning of CDS unit during pilot study duration.

Table 3.1 illustrates the rain event and the corresponding deflection effectiveness based on the Test Protocol procedure.

Table 3.1 CB Opening Screen Cover Deflection Effectiveness
(During storm event only)

Event	Date	Collected Trash (lbs)		Screen Cover % Deflection Effectiveness (c)
		CBs (a)	CDS (b)	
1	10/17-18/05	91	170	70
2	12/31/05- 1/2/06	69	110	79
3	2/17-18/06	155	200	59
4	3/20-21/06	112	250	58

Figures 3.3 and 3.4 below show typical contents found in the CDS unit after a storm event. Note that the predominate material is floatable materials such as styrofoam cups and containers, light film plastics used in packaging, and some paper products. Figures 3.5 through 3.10 show typical conditions of the opening covers after the rain events. Note that Figure 3.9 and 3.10 depict condition of the opening covers for rain events (late March and early April) less than 0.25 inches and staff only documented these through photos.

Figure 3.3 CDS contents after first storm event

Figure 3.4 CDS contents after last storm event

Figure 3.5 Typical opening cover after Rain Event No. 1 (10/17-18/05)

Figure 3.6 Typical opening cover after Rain Event No. 2 (12/31/05 – 01/02/06)

Figure 3.7 Typical opening cover after Rain Event No. 3 (2/17-18/06)

Figure 3.8 Typical opening cover after Rain Event No. 4 (3/19-20/06)

Figure 3.9 Typical opening cover after rain event less than 0.25in (3/29/06)

Figure 3.10 Typical opening cover after rain event less than 0.25in (4/4-5/06)

CHAPTER 4

PILOT STUDY
ANALYSIS AND RECOMMENDATIONS

Data Analysis

The study objective was to determine the CB opening screen cover effectiveness during the wet season. Chapter 3 shows that this type of opening cover demonstrated preliminary percentage effectiveness in the range of 58% to 79% during the rain events greater than 0.25 inches. As stated beforehand, the only time trash would enter a retrofitted catch basin with an opening screen cover would be when sufficient flow is generated by a medium to large storm to mobilize floatable trash in the area and push the cover open. It should be noted however that the City of Los Angeles during a typical year experiences twenty five (25) wet days and three hundred forty (340) dry days (93% of the calendar year). For dry days the trash deflection effectiveness of the opening screen cover will be considered 85 percent, given that the screen will remain in the closed position and only trash smaller than one (1) inch will enter the catch basin. The 85 percent was arrived at by data collected from a waste characterization conducted from 30 catch basins in June 2004. The waste characterization resulted in 85 percent of the collected waste being plastic material (i.e., plastic bags, plastic film, moldable plastic), and paper greater than 1 inch. Therefore, using a 1:9.3 weighted average over an entire year, the opening screen cover will have an **86 percent effectiveness rate.**

Observations

Throughout the study many observations, other than deflection effectiveness trash rate, were recorded and below are some aspects that need to be considered with the use of this type of opening screen cover:

- This type of opening screen cover tended to snare bottles, beverage cups, and other large material as the cover receded to the closed position. Thus, resulting in the CB opening screen cover remaining in the unlocked position.
- This type of opening screen cover relies on static pressure from the accumulation of flow outside the catch basin resulting in some occasions in localized ponding.
- This type of opening screen cover was installed flush with the curb face and was prone to damage by vehicles that have large wheel lug nuts, such as buses and heavy duty trucks.
- The placement of this type of opening screen cover flush with the curb face allowed for it to sometimes open when street sweepers swept the streets, resulting in trash being pushed into the catch basin.

Recommendations

The City should continue the use of catch basin opening screen covers in high trash generation areas based on its preliminary high trash deflection capability. However, the city should continue to evaluate different configurations of covers based on the following criteria:

- Maximize the amount of trash kept on the streets;
- Minimize flooding potential;
- Prevent large trash from entering the catch basin; and
- Ease of maintenance

EPA United States Environmental Protection Agency

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Keeping Trash Out of Waterways: LA Water Board Leads the Way

Southern California Quick Finder

Asbestos	Disaster Preparedness	Leaking Fuel Tanks	Ports	TMDLs
Brownfields	Grants	Mold	RCRA ID Numbers	Water Infrastructure
Children's Health	Indoor Air		Vehicle Imports	Wildfires

During every heavy rainstorm in urban areas, trash from streets and parking lots gets washed into storm drains that empty into creeks, bays and shorelines. Photo: Rick Loomis, LA Times

The TMDL process provides an assessment and planning framework for pollutant load reductions or other actions needed to attain water quality standards that protect aquatic life, drinking water, and other designated uses. TMDLs address all significant pollutants in a water body identified by the state as impaired.

In urban areas of the Pacific Southwest, millions of pounds of litter accumulate in streets and parking lots during the long dry season, then are flushed into storm drains by the first major rainstorm. Storm drains empty into streams, bays and harbors, and onto beaches, depositing loads of trash that are not just unsightly, but a serious health hazard to people, wildlife and fish.

Trash harms birds and marine life who consume small pieces, mistaking them for food. Some of the waste contains pathogens that sicken swimmers and surfers.

Last year, the Los Angeles Regional Water Quality Control Board adopted a Total Maximum Daily Load (TMDL) for trash in the LA River Watershed. This landmark TMDL was originally adopted by the Regional Board in 2001 and EPA-approved in 2002, but litigation required the TMDL to be set aside until it was re-adopted in 2007. Following its full adoption through the water quality standards approval process, the wasteload allocations will be brought into the Los Angeles County stormwater permit.

In its support of the Los Angeles Regional Board, EPA made it clear that preparation of this TMDL, the nation's first to regulate trash as a pollutant, was a key action to address this serious problem. Under the TMDL, cities, Los Angeles County and CalTrans prevent trash from reaching storm drains and fouling waterways and beaches. They are reducing trash discharges incrementally over nine years, with a goal of zero by 2016. The Regional Board documented the huge amounts of trash involved—more than 4.5 million pounds per year, which costs downstream cities hundreds of thousands of dollars each year to remove from their harbors and beaches.

Some cities in the Los Angeles area have already implemented the necessary measures, including what are known as 'full capture systems'—devices that trap all particles retained by a 5 mm mesh screen and have a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour storm in the subdrainage area. The Regional Board has certified various full-capture devices proposed by five cities, the County of Los Angeles, and Caltrans that local governments can use to achieve compliance.

These devices are most effective when not overwhelmed with trash and debris. We all do our part by keeping trash and other waste off the streets as cities continue public outreach, provide receptacles for trash, and routinely sweep streets and clean catch basins.

Meanwhile, the San Francisco Bay Regional Water Quality Control Board has held hearings on a proposal to include similar limits in its region-wide discharge permit for cities that discharge storm water (and trash) into the bay. Local environmental groups have documented the problem of trash-covered creeks that drain to the bay.

The regional water boards in Los Angeles and San Francisco Bay Area have recognized that voluntary measures aren't enough to keep trash out of the waterways. It's a serious water pollution problem, and EPA supports the Regional Boards' regulatory actions to make sure that every local jurisdiction participates in solving it.

Tracking Bacterial Pollution Sources in Stormwater Pipes

A final report to the
New Hampshire Estuaries Project/Office of State Planning

Submitted by

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April 2003

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Introduction

The New Hampshire Department of Environmental Services (DES) conducted two rounds of wet weather sampling in the Hampton Harbor watershed during 2002. Samples were collected from stormdrains, tributaries, and harbor stations for bacteria and flow in order to calculate bacteria loads. This information was needed to prioritize pollution sources as part of a Total Maximum Daily Load (TMDL) study of bacteria in Hampton Harbor (Trowbridge, 2003).

Two of the 16 monitored stormdrain pipes were selected for microbial source determination using ribotype profiling. Stormdrain pipe selection was based on the bacteria loading data from the first wet weather sampling that occurred on 7/23/02. The two sampling sites identified as HHPS069 and HHPS182 contributed 12% and 60%, respectively, of the bacteria load from the 16 monitored stormdrains during the first storm event. It was determined that these two pipes would be targeted for more intensive investigations based on the high relative loading of bacteria. Thus, samples were collected during a second storm on October 16, 2002 from these two pipes and analyzed for source species identification using ribotype profiling.

Project Goals and Objectives

The goal of this project was to determine the bacteria source species from two of the highest priority stormdrain pipes that discharge to Hampton Harbor. Specific objectives were to:

1. Collect water samples at the two selected sites during a storm of >0.25 inch total precipitation.
2. Analyze the water samples for bacteria concentrations and determine source species using ribotype profiling.
3. Issue a report for incorporation into the Hampton Harbor Wet Weather Study for the Bacteria TMDL.

Methods

Storm Selection

For this study, one storm was needed with the following characteristics: (1) onset at or around low tide; (2) >0.25 inches total precipitation; (3) occurrence during daylight hours on Monday-Thursday; and (4) very little rainfall for the prior three days. These criteria were met for the storm that DES used for this study.

The storm occurred on October 16, 2002 and was a classic "Nor'easter" with soaking rain and high winds lasting over 12 hours. A total of 1.39 inches of rain fell during the storm (Trowbridge, 2003).

Field Methods

The sampling sites were identified as HHPS182 which is located in Seabrook, west of Rt. 1A and south of Cross Beach Road and HHPS069 which is located in Hampton, west of the municipal parking lot on Ashworth Avenue. Samples were collected from the stormdrain pipe outfalls throughout the duration of the storm in accordance with the Quality Assurance Project Plan (QAPP). The samples were collected at periodic intervals to represent the entire storm. The samples were placed on ice packs in a cooler and delivered to the UNH Jackson Estuarine Laboratory.

The sampling site descriptions, photos and field collection methods for this study are described in detail in the approved QAPP, which is on file at DES.

Lab and Analytical Methods

Detection of Fecal Coliforms and E. coli

Appropriate volumes of water samples were filtered to give at least 20 colonies on agar plates, where possible. The membrane filters were rolled onto **mTEC** agar in petri dishes. Plates were inverted and incubated at 44.5±0.2 °C for 24 hours (USEPA, 1986). Fecal coliforms were enumerated by counting the yellow colonies after the incubation period, and *E. coli* was enumerated by counting the yellow colonies on the plate following incubation of the filter on urea substrate (Jones and Bryant, 2002).

For each sample/site, yellow colonies from the best dilution (10-30 readable colonies) were counted and recorded as fecal coliforms (Rippey et al., 1987). The yellow/yellow brown colonies remaining on the membrane filter after incubation on urea substrate were recorded as confirmed *E. coli* colonies.

Sample Processing

The procedures used for ribotyping *E. coli* isolates for this study have been used previously (Jones and Landry, 2003 and Jones, 2002) and are based to a large extent on those of Parveen et al. (1999). *E. coli* isolates were stored in cryovials at -80°C and re-cultured onto trypticase soya agar (TSA). Some of the stored isolates could not be re-cultured. Cultures on TSA were incubated overnight at room temperature (~20°C). Some of the resulting culture was transferred to duplicate cryovials containing fresh glycerol/DMSO cryo-protectant media for long-term storage at -80°C.

A RiboPrinter was used to process *E. coli* culture for ribotype determinations. After preparation of the samples, the automated process involved lysing cells and cutting

the released DNA into fragments via the restriction enzyme EcoR1. These fragments were separated by size through gel electrophoresis and then transferred to a membrane, where they were hybridized with a DNA probe and mixed with a chemiluminescent agent. The DNA probe targeted 5S, 16S and 23S ribosomal RNA genes. A digitizing camera captured the light emission as image data, from which the system extracted a RiboPrint® pattern. This pattern could be compared to others in the RiboPrinter database for characterization and identification based on densiometry data, although our approach has conformed to other ribotyping studies in using banding patterns instead as the basis for comparing patterns.

Band Identification

The images were transferred from the RiboPrinter into GelComparII (Applied-Maths) analytical software. The bands in lanes containing the standard were labeled and entered into the memory for optimization of gel pattern images. The densiometry data were processed for band identification. The ribopattern data for each separate water sample isolate were then selected for identification of source species.

Source Species Databases

The analysis of water sample isolates for identification of source species was based on two distinct databases. The first source species database used was composed of the *E. coli* strains isolated from source species sampled in the Hampton Harbor watershed. This database contained ribotypes for 11 non-human source species and wastewater, and included 120 total ribotypes (Table 1). All water ribotypes that matched the Hampton Harbor database at <90% similarity were reanalyzed using a full New Hampshire source species database. This state database was composed of 676 ribotypes from 26 different non-human source species, humans, septage and wastewater (Table 1). The state database contained ribotypes for more species and more for each shared species except for otters, cormorants and chickens, which were all from the Hampton Harbor watershed.

Table 1 Source species databases for New Hampshire and Hampton Harbor watershed.

Source species category	Source species	Number of Isolates	
		New Hampshire	Hampton Harbor
HUMANS/SEPTAGE			
	septage	16	0
	wastewater	107	25
	humans	68	0
PETS			
	cat	11	4
	dog	54	19

Source species category	Source species	Number of Isolates	
		New Hampshire	Hampton Harbor
LIVESTOCK			
	alpaca	3	0
	buffalo	10	0
	chicken	3	3
	cow	54	0
	goat	4	0
	horse	27	0
	sheep	2	0
WILDLIFE			
	coyote	19	4
	deer	59	7
	mouse	3	0
	muskrat	12	0
	otter	4	4
	raccoon	32	0
	rabbit	30	0
	red fox	25	4
	skunk	6	0
AVIAN SPECIES			
	cormorant	14	14
	duck	10	1
	geese	44	31
	gull	36	4
	pigeon	6	0
	robin	3	0
	sparrow	4	0
	starling	3	0
	wild turkey	7	0
	Total	676	120

Data Analysis

All data were analyzed with GelComparII software on a Dell computer, where the source species database was also stored. Hard copies of ribotype patterns and similarity coefficients for the unknown and its most closely related source species were printed for interpretation. Interpretation and accompanying graphical representations of the data were done using MS Excel on Macintosh computers.

Optimization was set at 1.56% and band position tolerance was set at 1.00%. Both of these parameters were used to adjust the ability to differentiate between bands for the degree of accuracy desired, and also to compensate for possible misalignment of homologous bands caused by technical problems.

Similarity indices were determined using Dice's coincidence index (Dice, 1945) and the distance among clusters calculated using cluster analysis. The source species profile with the best similarity coefficient at a given set of optimization and tolerance settings was accepted as an indication of the possible source species for the water sample isolate. For this study, the predetermined threshold similarity index that was considered to be a minimum value for identifying source species was 90% for comparisons to the source species databases. The identification of the source species was considered successful if the value calculated for a given water isolate was equal to or greater than the threshold value; if the calculated value was below the threshold similarity index, the water sample isolate was considered to be of unknown origin. Thus, the results of the identifications reported are less than completely accurate (0% tolerance and 100% similarity). Nonetheless, useful information has hopefully been gained to help guide management decisions and resource allocation for pollution source identification and elimination in the Hampton Harbor area.

Results and Discussion

Bacteria Concentrations throughout the Storm Event

Fecal coliform and *E. coli* concentrations were measured as part of this study. The concentrations in the pipes at the time of ribotype sample collection are summarized in Table 2. The *E. coli*:fecal coliform ratio was high (94%) for all samples. *E. coli* concentrations decreased steadily with time in HHPS069, from 304,000/100 ml to 72,000/100 ml (Figure 1). In HHPS182, concentrations increased through the first four sample times, from 14,400/100 ml to 1,1120,000/100 ml, before decreasing sharply thereafter to 172,000/100 ml. The gradual rise and sharp decline in *E. coli* concentrations at HHPS182 could be a result of the stormdrain pump stations (River Street and Ocean Boulevard stations) associated with the effluent from the northern pipe of this drainage system.

Table 2 Fecal coliform and *E. coli* concentrations in stormdrain pipes and number of isolates yielding useable ribotypes.

	HHPS069		Ribotype	**HHPS182**		Ribotype
Sample time	FC/100 ml	*Ec*/100 ml	isolates	FC/100 ml	*Ec*/100 ml	isolates
10:30				15,600	14,400	8
11:30	304,000	304,000	1			
11:47				20,400	18,800	9
12:30	236,000	212,000	6			

Sample time	HHPS069 FC/100 ml	*Ec*/100 ml	Ribotype isolates	HHPS182 FC/100 ml	*Ec*/100 ml	Ribotype isolates
13:16				136,000	120,000	5
14:00	180,000	172,000	6			
14:43				1,120,000	1,120,000	8
15:45	140,000	120,000	3			
16:09				180,000	172,000	5
16:50	72,000	72,000	8			

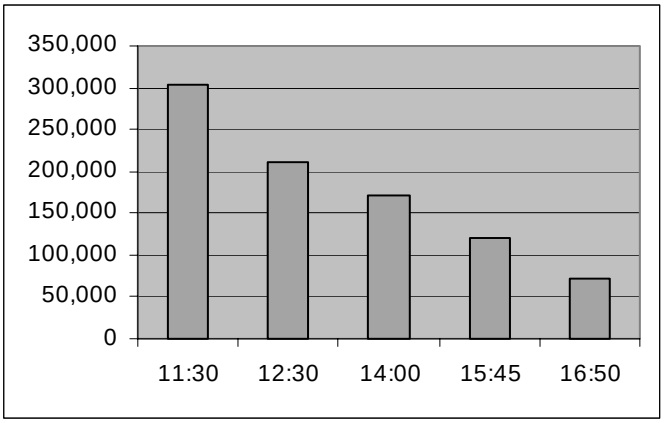

Figure 1 Site HHPS069 *E. coli* concentrations throughout the storm event.

Source Species Identification

The Hampton Harbor and New Hampshire source species databases were used to identify sources for 24 and 35 isolates from water samples taken from HHPS069 and HHPS182, respectively. Banding patterns for water sample and source species isolates were considered to be the same if there was 90% or greater similarity with reference isolates. Overall, sources for 78% of the 59 isolates were identified (Table 3).

Table 3 Identified source species (90% similarity) for 59 *E. coli* strains isolated in effluent from two stormdrain pipes.

Source	HHPS069	HHPS182	Both sites	%
human/wastewater	3	9	12	0.20
cormorant	3	8	11	0.19
goose	6	1	7	0.12
fox	3	2	5	0.08
raccoon	0	2	2	0.03
coyote	0	2	2	0.03
cat	0	2	2	0.03
seagull	1	1	2	0.03

Source	HHPS069	HHPS182	Both sites	%
dog	1	1	2	0.03
pigeon	1	0	1	0.02
Total	18	28	46	
%	0.75	0.80	0.78	
Unknowns	6	7	13	
%	0.25	0.20	0.22	

Source Species for Pollution Source HHPS069

Source species identification was successful for 18 of the 24 *E. coli* isolates (75%) from HHPS069 (Table 3). The most common source species was goose (6 isolates), followed by cormorant, fox and wastewater (3 isolates each). One isolate was identified for each of the following species: dog, pigeon and seagull. The timing of the appearance of the source species showed no clear trends, except that the goose isolates did not appear until the third sample (Table 4). Table 5 summarizes the identified source species by type. Birds were the most commonly identified source type (46%), followed by humans and wildlife (each at 13%) and pets (4%).

Table 4 Temporal identification of source species for *E. coli* in effluent from two stormdrain pipes.

Site HHPS	Time	cat	cormorant	coyote	dog	fox	goose	pigeon	raccoon	seagull	wastewater
069A	11:30										
069B	12:30		2			1		1			1
069C	14:00				1	1	2				
069D	15:45						3				
069E	16:50		1			1	1			1	2
	Total	**0**	**3**	**0**	**1**	**3**	**6**	**1**	**0**	**1**	**3**
182A	10:30	1	2			1	1			1	2
182B	11:47		1	2							3
182C	13:16	1									2
182D	14:43		4			1			2		1
182E	16:09		1		1						1
	Total	**2**	**8**	**2**	**1**	**2**	**1**	**0**	**2**	**1**	**9**
	Overall	***2***	***11***	***2***	***2***	***5***	***7***	***1***	***2***	***2***	***12***

Table 5 Identified source species types at two storm pipes in Hampton Harbor during a storm event on October 16, 2002.

Source species type	HHPS069 # of isolates	%	HHPS182 # of isolates	%	Both pipes # of isolates	%
Human (wastewater)	3	13%	9	26%	12	20%
Pets	1	4%	3	9%	4	7%
Birds	11	46%	10	29%	21	36%
Livestock	0	0%	0	0%	0	0%
Wildlife	3	13%	6	17%	9	15%
Unidentified	6	25%	7	20%	13	22%
Total isolates	**24**		**35**		**59**	

Source Species for Pollution Source HHPS182

Source species identification was successful for 28 of the 35 *E. coli* isolates (80%) from HHPS182 (Table 3). The most common source was wastewater with 9 isolates, followed by cormorant with 8 isolates, and cat, coyote, fox and raccoon with 2 isolates each. One isolate was identified for each of three other species: dog, goose and seagull. The timing of the appearance of the source species showed wastewater and cormorant sources appeared consistently through the sampling period (Table 4). The *E. coli* concentration was much higher for the fourth sample (Table 2), and cormorants were the most commonly identified source. Fox, raccoon and wastewater were also identified in the fourth sample.

Table 5 summarizes the identified source species by type. Birds (29%) and humans (26%) were the most commonly identified source types, followed by wildlife (14%) and pets (9%).

Source Species for Both Pipes

The source species identified for both pipes showed wastewater to be the most common source (12 isolates), followed by cormorant (11), goose (7) and fox (5) (Table 5). Two isolates were identified for each of the following: cat, coyote, dog, raccoon and seagull. One pigeon isolate was identified. Table 5 shows the overall most common type of source was birds (36%), followed by humans (20%), wildlife (15%) and pets (7%).

Conclusions

The present study represents the third published report on use of ribotyping to identify source species on New Hampshire estuarine waters. As such, the procedures and interpretations used have benefited from lessons learned in past studies (Jones and

Landry, 2003; Jones, 2002), and changes were made. Previous ribotyping studies in New Hampshire involved use of non-automated ribotyping procedures. The recent purchase of a fully automated RiboPrinter at UNH/JEL has provided the capacity to conduct ribotyping more rapidly, with more consistency and at a lower cost. The most striking difference resulting from use of a RiboPrinter in this study is the higher level of similarity (90%) used to provide for a reasonable percentage of identified isolates (78%). This means that the identified isolates were more accurately matched to source species than in previous reports where 80% similarity was used.

Another difference in approach used for this study compared to previous studies in New Hampshire was use of two source species databases. A local database was used first to identify sources, and then the larger state database was used to identify sources of isolates that did not meet the threshold similarity index in matching to known source ribotypes in the local database. This approach was used to see how well a small, local database works compared to a larger database. Both databases were still quite closely related from a geographic standpoint, as all ribotypes in the state database were collected from species in communities adjacent to the Great Bay Estuary, the Atlantic coast or Hampton Harbor.

There were distinct differences in identified source species for the two pipes. These differences probably reflect differences in species that are present and depositing fecal material to the drainage area. There are numerous factors that could affect the appearance of the different source species in the effluent from the two pipes. Some species may inhabit or have some presence in the pipe/drainage system prior to the storm. In the case of wastewater/human sources, these could include leaky sewer pipes underground that may cross the storm drainage pipes. The timing of the appearance of source species probably reflects time required for transport of the fecal material with runoff to the end of the pipe. The feces from birds on rooftops may take longer to reach the end of the pipes than pet waste deposited on sidewalks.

The types of source species identified were of interest. Many storm water/runoff studies have attributed fecal contamination to pet wastes. Of the four types of sources identified, pets were the least common, behind birds, humans and wildlife. It may be that pets are not common in the drainage area during October, while birds may be much more prevalent.

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PUBLIC EDUCATION PROGRAM

The Problem With Marine Debris

Millions of Californians enjoy the state's coastline and waterways everyday. However, many of those people are unaware how their daily activities, from driving a car, to not properly disposing of their garbage, or even throwing a cigarette butt on the ground, can impact the plants and animals off our shores. This debris can harm or kill beach organisms. Pollution also makes using the beach less enjoyable for humans. Solving our water pollution problems requires everyone's involvement.

HOW DOES TRASH BECOME MARINE DEBRIS?

Look around the next time you walk down the street. When it rains, trash on sidewalks and streets accumulates in the gutter and is swept into your city's storm drain system. Most storm drain systems discharge directly into the nearest waterway, which eventually flows to the ocean. Trash may also be dumped directly into the ocean by recreational and commercial boaters, and it is often left on the beach by beach-goers.

TRASHING CALIFORNIA'S BEACHES

Californian's love their coast and ocean — nine out of ten will visit the beach at least once this year. When they arrive at the beach, they are finding a lot more than sand and surf. During a recent summer, Orange County collected enough garbage from six miles of beach to fill ten garbage trucks full of trash every week, at a cost to taxpayers of $350,000. Other California counties spend even more.

In 1975, the National Academy of Sciences estimated that ocean-based sources, such as cargo ships and cruise liners, dumped 14 billion pounds of garbage into the ocean. In 1988, the U.S. signed onto MARPOL Annex V, joining 64 other countries that signed the international protocol that regulates ocean dumping and made it illegal to dump plastic into the ocean. Laws like MARPOL have reduced the amount of trash on our beaches and in our ocean. Even so, plastic pollution is still a major problem. A recent study found an average of 334,271 pieces of plastic per square mile in the North Pacific Central Gyre, which serves as a natural eddy system to concentrate material.[1] Results of more than 10 years of volunteer beach cleanup data indicate that 60 to 80 percent of beach debris comes from land-based sources. And debris in the marine environment means hazards for animals and humans. Plastic marine debris affects at least 267 species worldwide, including 86 percent of all sea turtle species, 44 percent of all sea bird species, and 43 percent of marine mammal species.[2]

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HOW MARINE DEBRIS HARMS WILDLIFE

Entanglement

Common items like fishing line, strapping bands and six-pack rings can hamper the mobility of marine animals. Once entangled, animals have trouble eating, breathing or swimming, all of which can have fatal results. Plastics take hundreds of years to breakdown and may continue to trap and kill animals year after year.

Plastic

Almost 90 percent of floating marine debris is plastic. Due to its durability, buoyancy, and ability to accumulate and concentrate toxins present in the ocean, plastic is especially harmful to

marine life

marine life.

Ingestion

Birds, fish and mammals often mistake plastic for food. Some birds even feed it to their young. With plastic filling their stomachs, animals have a false feeling of being full, and may die of starvation. Sea turtles mistake plastic bags for jellyfish, one of their favorite foods. Even gray whales have been found dead with plastic bags and sheeting in their stomachs.

One type of plastic debris found all over the world are plastic pellets, or "nurdles," which are the raw material transported to plastics manufacturing facilities to be melted into products such as disposable forks and bottles, computer monitors, toys, etc. To learn about (and perhaps participate in) a study of these pellets' accumulation of organic pollutants from sea water, visit International Pellet Watch.

Glass

Glass can be recycled to make new glass, insulation, and asphalt. In 1993, we recycled more than 600 tons of glass, sustaining 4,320 jobs.

HOW MARINE DEBRIS HARMS PEOPLE

Beachgoers can cut themselves on glass and metal left on the beach. Marine debris also endangers the safety and livelihood of fishermen and recreational boaters. Nets and monofilament fishing line can obstruct propellers and plastic sheeting and bags can block cooling intakes. Such damage is hazardous and costly in terms of repair and lost fishing time. In one Oregon port, a survey revealed that 58 percent of fishermen had experienced equipment damage due to marine debris. Their average repair cost was $2,725.

HOW DOES REDUCING, REUSING, AND RECYCLING HELP?

Use Less Stuff

Many of our pollution problems are really problems of misplaced resources. For every item we recycle or reuse, that's one less piece of trash that can become a part of the marine debris cycle threatening people and wildlife.

Everything we use in our daily lives is made from natural resources such as trees, petroleum, sand, water, soil, and metals, many of which are non-renewable.

By throwing these materials into our landfills, we drastically reduce the remaining supply of non-renewable natural resources.

Metal

Nearly 75% of all metal is used just once. Recycling steel reduces air and water pollution and requires 70% less energy than producing it from raw materials.

BE PART OF THE SOLUTION

The debris that we collect from our beaches is a symptom of a much larger water pollution problem that is caused by everyday people doing every day things. Rain scours oil from parking lots, fertilizer from lawns, pet droppings from sidewalks and other contaminants from "nonpoint" sources and transports this toxic stew down storm drains and over land into the ocean. These toxins are poisoning marine life and our water sources. We can all be part of the solution by recycling used motor oil and repairing car leaks, picking up after our pets and switching to non-toxic products and improve other everyday practices to help keep our waterways clear and clean.

HOW CAN I HELP?

- Reduce, reuse and recycle at home, work and school.
- Buy products made from recycled materials with little or no packaging.
- Keep storm drains clean - they drain to beaches.
- Keep cigarette butts off streets and beaches.
- Properly dispose of fishing lines, nets and hooks.

Paper

Waste paper can be turned into raw material for new paper and paper products. Every 2,000 pounds of paper recycled saves 17 trees.

- Participate in the Coastal Commission's programs, call (800) COAST-4U:
  - Volunteer for Coastal Cleanup Day, the third Saturday in September.
  - Volunteer for the year 'round Adopt-A-Beach® program.
  - Buy a "WHALE TAIL® " license plate.
  - Become a "California Coastal Steward".

Have you heard of the "Pacific Garbage Patch" and want to learn more? Here are a few links with information on the growing problem of plastic pollution in the Pacific Ocean:

- Algalita Marine Research Foundation
- Project Kaisei
- NOAA Marine Debris Program

To view the Algalita Marine Research Foundation video on the subject, Synthetic Sea, borrow it from our Lending Library or view it streaming on their website at www.algalita.org/pelagic_plastic_mov.html.

Photographer Chris Jordan has created a blog, www.midwayjourney.com, documenting the experience of visiting Midway Island with other artists and journalists. The site includes powerful videos depicting the impact of plastic debris on the Laysan albatross population that nests there.

CENTER FOR WATERSHED PROTECTION

Deriving Reliable Pollutant Removal Rates for Municipal Street Sweeping and Storm Drain Cleanout Programs in the Chesapeake Bay Basin

A report prepared by the Center for Watershed Protection as fulfillment of the U.S. EPA Chesapeake Bay Program grant CB-973222-01

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as part of the Baltimore Ecosystem Study

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September 2008

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Project Team

The Center for Watershed Protection (CWP) coordinated the research project team, which included the City of Baltimore Department of Public Works (DPW), Baltimore County Department of Environmental Protection and Resource Management (DEPRM), and the Department of Civil and Environmental Engineering at the University of Maryland-Baltimore County (UMBC). Other partners on the project team include the Center for Urban Environmental Research and Education (CUERE) at UMBC and the U.S. Forest Service Northern Research Station (FS-NRS) as part of the Baltimore Ecosystem Study (BES).

Executive Summary

The research project report provides information to support pollutant removal efficiencies for street sweeping and storm drain cleanout practices for Phase I and II communities in the Chesapeake Bay watershed. Information and data was gathered for this project through a comprehensive literature review, a basin-wide municipal survey of existing street sweeping and storm drain cleanout practices, and an intensive field monitoring program within two study catchments located in Watershed 263 in Baltimore, MD and additional sites in Baltimore County.

Street sweeping and storm drain cleanout practices rank among the oldest practices used by communities for a variety of purposes to provide a clean and healthy environment, and more recently to comply with National Pollutant Discharge Elimination System stormwater permits. The ability for these practices to achieve pollutant reductions is uncertain given current research findings. Only a few street sweeping studies provide sufficient data to statistically determine the impact of street sweeping and storm drain cleanouts on water quality and to quantify their improvements. The ability to quantify pollutant loading reductions from street sweeping is challenging given the range and variability of factors that impact its performance, such as the street sweeping technology, frequency and conditions of operation in addition to catchment characteristics. Fewer studies are available to evaluate the pollutant reduction capabilities due to storm drain inlet or catch basin cleanouts.

A multi-faceted monitoring study was completed to provide locally-derived pollutant removal reductions for street sweeping and storm drain cleanout practices. The monitoring program including water quality and flow, bedload, first flush, precipitation, source area street particulate matter, and storm drain inlet accumulation and chemical characterization. A 'before-and after' study design was used based on the inability to find a suitable control catchment to implement a paired watershed study design. An insufficient number of samples were collected given the conditions experienced during the study period to statistically detect differences in the street sweeping treatment on water quality. Monitoring efforts, however, did reveal key findings to determine factors contributing to the effectiveness of street sweeping and storm drain cleanout practices such as the particle size distribution of the street particulate matter picked-up by sweeping and its chemical composition, along with the significance of leaf litter and other organic material in storm drains and its contributions to pollutant loadings.

To synthesize the diverse research findings from this and other studies, a conceptual model was developed to provide pollutant removal efficiencies for TS, TN and TP for street sweeping and storm drain cleanout practices. The conceptual model is defined by a set of bounding conditions and assumptions that were made based on the literature, survey findings and monitoring data collected as part of the project.

For a given set of assumptions and sweeping frequencies, it is expected that the range in pollutant removal rates from street sweeping for total solids (TS), total phosphorus (TP) and total nitrogen (TN) are: 9 – 31%, 3-8% and 3-7%, respectively. The lower end represents monthly street sweeping by a mechanical street sweeper, while the upper end characterizes the pollutant removal efficiencies using regenerative air/vacuum street sweeper at weekly frequencies.

Pollutant removal efficiencies (%) from street sweeping for TS, TP and TN.				
Frequency	**Technology**	**TS**	**TP**	**TN**
Monthly	Mechanical	9	3	3
	Regenerative Air/Vacuum	22	4	4
Weekly	Mechanical	13	5	6
	Regenerative Air/Vacuum	31	8	7

The conceptual model is also applied to estimate the efficiency with which storm drain inlets trap, or store material to reduce the total pollutant loading at the receiving waters. Data generated from this study and others find that the particle size distribution in storm drains is similar to the street particulate matter and organic material comprised a large fraction of the accumulated material. For a given set of assumptions and cleanout frequencies, it is expected that the range in pollutant removal efficiencies for TS, TP and TN estimated to range from 18-35%, less than 1-2% and 3-6%, respectively.

Pollutant removal rates (%) from catch basin cleanouts for TS, TP and TN.			
Frequency	**TS**	**TP**	**TN**
Annual	18	<1	3
Semi-annual	35	2	6

The compilation and analysis of the data collection from this and other research studies provided valuable information to evaluate the effectiveness of these municipal practices. As a result, the following recommendations are made with respect to street sweeping and storm drain cleanout practices to reduce pollutant loadings to the Chesapeake Bay watershed:

Programmatic

- Adopt the pollutant removal efficiencies presented herein for mechanical and regenerative air or vacuum assist street sweepers used at weekly and monthly frequencies. Based on the municipal practices survey, few communities with the Chesapeake Bay use the more efficient street sweeping technologies or sweep at frequencies to achieve the pollutant removal efficiencies presented in this report.
- Develop street sweeping and storm drain maintenance program efforts to target areas and times during the year in communities that may receive the greatest impact from street sweeping or storm drain cleanouts.
- Implement a downspout disconnection program and/or an urban stormwater retrofit program that redirects and treats stormwater before it reaches the storm drainage system (via parking lots, roads, sidewalks, alleyways) in ultra-urban catchments, such as those in this study.

- Expand MS4 stormwater programs to include a curb-side leaf litter pick-up program that is able to maximize the reduction of leaf litter and prevent it from entering the storm drain. This is important for two reasons, 1) street sweepers avoid leaf piles and this reduces the effectiveness of this practice (sweepers may also emulsify leafy debris and make it more easily entrained by runoff, and 2) the decomposition of leaves and other organic debris in storm drain inlets or catch basins can create an environment suitable for the release of inorganic nitrogen and transport to receiving waters.

Research

- Conduct additional research on the implications of storm drain cleanout practices to include catch basins and chemical analysis of particle size distributions to estimate the pollutant load reductions from the different particle size classes
- Further evaluate stormwater monitoring techniques that can be used to account for the 'missing load' that occurs when using current sampling techniques to reduce potential bias in reported pollutant removal efficiencies.
- Research and develop alternative sampling techniques that can be used to collect more representative stormflow throughout the depth of flow and storm event.
- Adopt whole water sampling as a method to measure sediment in stormwater as an initial step to reduce the bias.
- Quantify bedload contributions to the total stormwater pollutant load. Although it may comprise a small portion of total stormwater load it can have a much larger impact due to the chemical characteristics of the material.

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MEMORANDUM

SAVE THE BAY

TO: **SF Regional Water Quality Control Board**

FROM: **Felicia Madsen and Athena Honore**

DATE: **March 6, 2007**

SUBJECT: **Trash Pollution in San Francisco Bay**

Summary

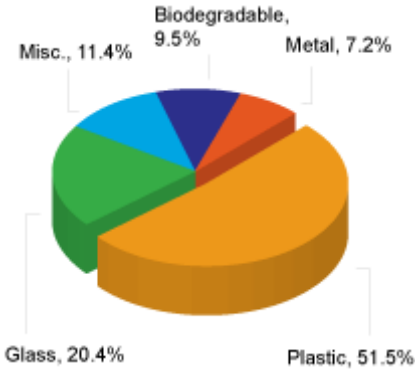
- Trash is a pollutant of concern significantly affecting San Francisco Bay beneficial uses, such as recreation and habitat.
- Trash accumulates in the Bay faster than it can break down. Trash impacts on Bay wildlife and water quality are growing and may soon reach the catastrophic levels already experienced around the world.
- Management actions can reduce trash impacts: trash separators, screens, and booms in storm drains and waterways are successful at diverting trash from waterways.

How much trash is in waterways and San Francisco Bay?

- Initial assessments by the San Francisco Bay Regional Water Quality Control Board (Regional Board) staff and other groups indicate that trash and marine debris are impairing water quality. However, more studies are needed to fully quantify how much trash is in the region's waterways.
- Local efforts show the magnitude of the problem
    - Municipal and volunteer group shoreline/creek cleanups
        - 686,000 pieces of trash on Bay Area shorelines and creeks, Coastal Cleanup Day 2006
        - 200,000 pounds of trash, Coastal Cleanup Day 2005
        - 408,000 pounds of trash since 1998, Santa Clara Valley Urban Runoff Pollution Prevention Program
    - The Regional Board's Surface Water Ambient Monitoring Program (SWAMP) program piloted an assessment study of trash in Bay Area streams.
        - 3 pieces of trash along foot of stream: average trash level
        - 2 pieces of trash per 100 feet per day: mean wet season accumulation rate
        - The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) uses this method to assess 19 creekside trash hot spots in the South Bay.
    - Photo-documentation from creek groups: dramatic images show trash dominating water flows (see below)

What happens to trash in the Bay?

- 90% of trash in waterways takes years or decades to decompose: glass, metal, and especially plastic will accumulate on the Bay floor, shoreline, and floating drifts
    - Cold saltwater preserves plastic items, slowing the degradation process
- The Regional Board SWAMP study of Bay Area creek trash found that only 10% of trash is readily biodegradable.



Trash Item	Time to Biodegrade
Banana	3-4 weeks
Cigarette butt	1-5 years
Rubber shoe sole	50-80 years
Aluminum can	80-100 years
Plastic bottle	Thousands of years, if ever

Source: National Park Service

Source: A Rapid Trash Assessment Method Applied to Bay Area Creeks, SWAMP, SFRWQCB

Trends: Exponential rise in marine debris

- San Francisco Bay is accumulating trash at unprecedented levels
  - 60% more trash generated now than in 1960 in the U.S. (more disposable items)
  - Plastic waste is growing
    - 300 pounds per person per year in the U.S., 50% more than ten years ago
    - Plastic industry projects a steady increase
- Growth in trash exceeds the environment's ability to absorb it
  - Plastic does not biodegrade
  - Worldwide, marine debris is growing exponentially
    - A 2000 study in Japan found marine debris increasing tenfold every 2-3 years
    - "Every little piece of plastic …that made it into the ocean is still out there:" Anthony Andrady, polymer chemist and trash researcher
    - North Pacific Gyre: an accumulation of mostly plastic trash the size of Texas

Trash and marine debris threatens wildlife and impairs water quality

- Trash impacts wildlife
  - Trash items such as six-pack rings can entangle and kill organisms
  - Wildlife ingest trash ("junk" food)
    - Larger animals can die from starvation/intestinal blockage by plastic
      - 90-100% of seabirds studied in Pacific, Atlantic Oceans ingested plastic
      - 40% mortality rate from plastic ingestion in albatross chicks
    - Plastic absorbs other chemical contaminants such as PCBs and DDT from surrounding waters, delivering high levels to wildlife
    - Smaller filter feeders take up plastic particles along with plankton
      - North Pacific Gyre: plastic bits outnumber plankton 6 to 1
  - Floatables inhibit growth of aquatic vegetation, decrease spawning areas and habitat.
    - Plastic film from bags and wrappers can block oxygen exchange, smothering Bay floor vegetation and bottom-dwelling organisms

- San Francisco Bay beneficial uses impaired by trash:
  - Water contact recreation (REC1), non-water contact recreation (REC2), wildlife habitat (WILD), estuarine habitat (EST), marine habitat (MAR), rare threatened or endangered species (RARE), migration of aquatic organisms (MIGR), reproduction and early development of fish (SPWN), commercial & sport fishing (COMM), shellfish harvesting (SHELL), wetland habitat (WET), cold freshwater habitat (COLD)
  - Trashed beaches deter tourists, affecting the economy
  - High trash levels in Bay, shoreline, and creeks send the message that natural resource areas have no value.

Where does trash come from?

- Marine debris is trash that escapes solid waste collection systems
    - Overfull or inadequate trash cans or dumpsters (i.e. in shopping malls, ballparks, recreation areas, or schools)
    - Littering (from pedestrians or cars)
    - Dumping (household garbage or large items)
- Only 10% of waterborne trash is from marine activities (i.e. boating, shipping); 90% is from land

How does trash reach San Francisco Bay?

- Urban runoff carries trash down the watershed to San Francisco Bay. Wind blows lighter items over land to streams or directly to Bay.
- The Bay Area's hundreds of creeks are a major conveyor of trash to the Bay.
- High flows during storm events can move large items (shopping carts, tires).
- The storm drain system conveys trash from city streets to thousands of outfalls at creeks or the Bay.

What items make up waterborne trash?

- Unlike other water pollutants, trash is macroscopic and composed of many different items.
    - Common finds in waterways: cigarette butts, plastic bags, fast food wrappers and containers, plastic and glass bottles, cans, balls, motor oil containers, packing materials, diapers, batteries

Current regulatory measures on trash

- Basin Plan prohibits trash discharge
    - Explicit prohibition on discharges of "rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters"
- Current municipal efforts, such as street sweeping and anti-litter ordinances, provide a baseline but are not sufficient
- Current stormwater permits do not address trash as a pollutant of concern

Upcoming regulatory decision points

June 2007 — CCMP update may add trash reduction objectives to document. Advisory only.

June 2007 — MRP provisions for municipalities to reduce Bay trash discharge will be finalized. Could require measurable reductions in trash discharge.

2008 — Next opportunity to 303d list waterbodies impaired by trash. 303d listing qualifies areas for TMDL to remediate pollution problem. Data submitted by 2/28/07.

- In the San Francisco Bay region, only Lake Merritt is currently 303d listed for trash.
- The listing has triggered funds for cleanup and installation of vortex separators at 5 locations.

2010-11 — Earliest implementation of potential San Francisco Bay TMDL for trash

LA TMDL: The strongest approach to trash reduction

- Trash TMDL covers Los Angeles River and Ballona Creek
    - TMDL was challenged by several municipal lawsuits; none were upheld except to add CEQA analysis. Order will be finalized 2007.
- TMDL requires permittees to reduce trash discharge to watershed over ten years to zero trash
    - Trash is defined as manufactured items that can be retained by a 5mm screen
- The zero trash requirement was subsequently modified to installation of full-capture end-of-pipe structural controls, partial capture systems, and/or institutional controls
    - Full-capture devices: vortex separators and mesh bags at outfalls
    - Partial capture devices: catch basin screens or inserts
    - Institutional controls refer to public education, business outreach, enhanced street sweeping, and installation of additional trash receptacles
- Los Angeles passed Prop. O, a funding measure for clean water, with 76% voting Yes

- 3 further trash TMDLs are in development for unrelated areas that had been 303d listed for trash: Machado Lake, Santa Clara River, and Ventura County

Toolbox of trash management actions

- Unlike mercury, PCBs, and copper, proven methods can remove trash from urban runoff

- *Current measures (status quo)*
    - Several baseline measures are already standard practice in cities
        - Sweep streets to pick up loose trash (varying frequency)
        - Provide creek cleanups once or twice a year
        - Encourage volunteer Adopt-a-Creek groups to clean creeks
        - Clean storm drain catch basin inlets once a year to prevent leaf blockages and flooding
        - Educational/advertising campaigns directed at students or the general public
    - These methods have not solved the problem of trash in waterways

- *Additional measures*
    - Numerous methods can make significant reductions in trash discharge
        - Retrofit catch basin inlets with screens in high-trash-generating areas
        - Install vortex separators ("trash traps") inside storm drain pipes. Pump stations, where storm drain outfalls are below sea level and must be pumped up to discharge to the Bay, are ideal locations.
            - Vortex separators pull out almost 100% of trash for removal to landfill
        - Install mesh bags at storm drain outfalls to capture trash
        - Install floating trash booms ("necklaces") that catch floating trash, for removal to landfill
        - Increase number of trash receptacles and pickup frequency
        - Divert storm drain flows to sewage treatment plant during dry season (when plant has capacity)
        - Outreach to individual businesses to reduce trash
        - Require measurable reductions in trash discharge
        - Increase enforcement for littering and dumping
        - Increase storm drain inlet cleanout frequency
    - Measures have been successfully piloted in LA, Australia
    - Many structural control methods will trap sediments as well, reducing sediment-associated pollutants such as PCBs and mercury.
    - Structural control methods incur costs for installation and ongoing maintenance

- *Funding*
- Creative measures to fund trash management have been successfully adopted
    - Special district to assess stormwater treatment fees and bypass Prop 218 hurdles (Santa Cruz)
    - Local bond measures such as Oakland's Measure DD or LA's Prop. O
    - State resource bonds already passed, such as Prop. 1E
        - Current efforts to designate a portion of 1E funds for trash abatement devices

Photographs (see following pages)

- Trash in Bay Area creeks
    - Coyote Creek
    - Guadalupe River
    - Suisun Marsh
- Trash control devices
    - Mesh bags at storm drain outfalls
    - Trash booms
    - Vortex separators

Trash in Bay Area creeks

Coyote Creek 2004

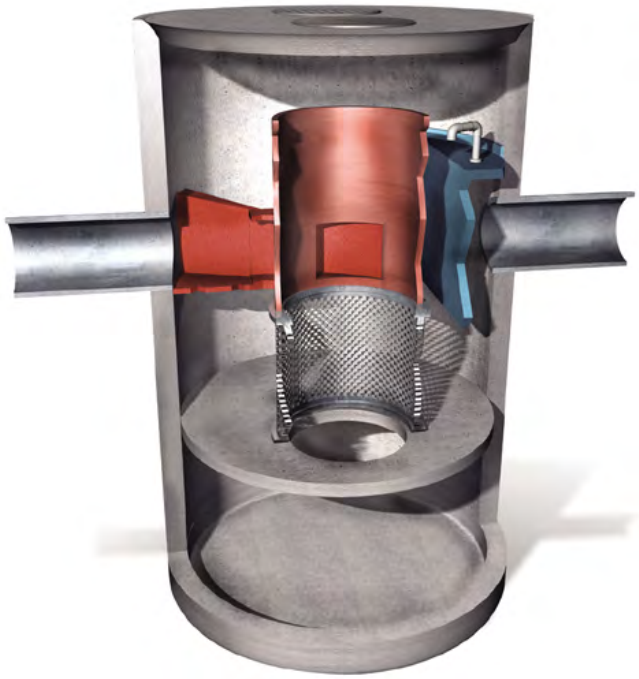
Guadalupe River, 2006

Suisun Marsh, 2006

Trash control devices
End of pipe capture nets

Trash boom at Oakland Coliseum

Vortex separator unit
Photos from Lake Merritt, Oakland



Addendum:
Images from Save The Bay members responding to call for data for 303d Impaired Waterways list.

- Images show current conditions: taken January and February, 2007.
- 100 photos were taken by concerned citizens, of trash problems in their neighborhoods.
- Images document a range of trash issues in 15 locations around the Bay Area.
- Selected items are presented here, and the full set can be viewed at http://www.flickr.com/photos/savethebay/sets/72157594532049775/
    - Hundreds of other photographs of waterborne trash were also submitted to Regional Board.

Berkeley Marina
Trash from storm drains and littering

San Rafael Marina, Pickleweed Park
Trash from storm drains and littering

San Rafael Marina, Pickleweed Park
Trash from storm drains and littering

Wildcat Creek, Richmond
Homeless encampment

Wildcat Creek, Richmond
Dumping site

Wildcat Creek, Richmond
Litter

Guadalupe River, San Jose
Dumping site

Guadalupe River, North San Jose
Litter deposited by river on banks

Guadalupe River, North San Jose
Trash buildup behind obstacles in river

Guadalupe River, San Jose
Waterborne trash deposit

Guadalupe River, North San Jose
Waterborne trash deposit

Richmond Marsh, Richmond
Trash washed up at high tide

Richmond Marsh, Richmond
Trash washed up at high tide – closeup

Los Gatos Creek, Los Gatos
Waterborne trash deposit

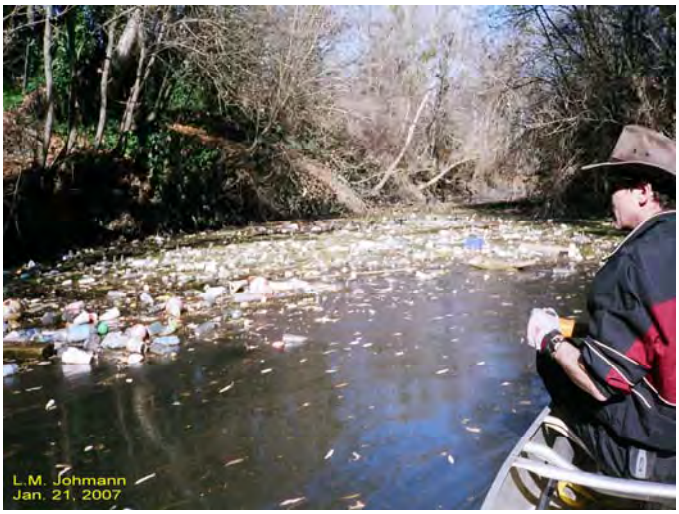
Coyote Creek, San Jose
Wrecked car in creek

Schoolhouse Creek, Berkeley
Egret feeding among plastic bags
discharged from storm drain

Strawberry Creek, Berkeley
Trash intersection between tidal wash
and storm drain discharge

Stevens Creek, Mountain View
Waterborne trash deposit

Stevens Creek, Mountain View
Waterborne trash deposit – closeup



Coyote Creek, San Jose
Trash builds up regularly in many spots

Coyote Creek, San Jose
Close-up of trash raft

Guadalupe River, San Jose
Accumulation of waterborne trash

Guadalupe River, San Jose
Trash from runoff and littering

Coyote Creek, San Jose
Bend in creek accumulates trash

Guadalupe River, San Jose

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

LOS ANGELES REGION

320 W. 4th Street, Suite 200, Los Angeles, California 90013

Phone (213) 576 - 6600 • Fax (213) 576 - 6640

http://www.waterboards.ca.gov/losangeles

ORDER NO. R4-2012-0175
NPDES PERMIT NO. CAS004001

WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) DISCHARGES WITHIN THE COASTAL WATERSHEDS OF LOS ANGELES COUNTY, EXCEPT THOSE DISCHARGES ORIGINATING FROM THE CITY OF LONG BEACH MS4

The municipal discharges of storm water and non-storm water by the Los Angeles County Flood Control District, the County of Los Angeles, and 84 incorporated cities within the coastal watersheds of Los Angeles County with the exception of the City of Long Beach (hereinafter referred to separately as Permittees and jointly as the Dischargers) from the discharge points identified below are subject to waste discharge requirements as set forth in this Order.

I. FACILITY INFORMATION

Table 1. Discharger Information

Dischargers	The Los Angeles County Flood Control District, the County of Los Angeles, and 84 incorporated cities within the coastal watersheds of Los Angeles County with the exception of the City of Long Beach (See Table 4)
Name of Facility	Municipal Separate Storm Sewer Systems (MS4s) within the coastal watersheds of Los Angeles County with the exception of the City of Long Beach MS4
Facility Address	Various (see Table 2)
The U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, Los Angeles Region (Regional Water Board) have classified the Greater Los Angeles County MS4 as a large municipal separate storm sewer system (MS4) pursuant to 40 CFR section 122.26(b)(4) and a major facility pursuant to 40 CFR section 122.2.	

Table 2. Facility Information

Permittee (WDID)	**Contact Information**	
Agoura Hills (*4B190147001*)	**Mailing Address**	30001 Ladyface Court
		Agoura Hills, CA 91301
	Facility Contact, Title, and E-mail	Ken Berkman, City Engineer kberkman@agoura-hills.ca.us

Permittee (WDID)	Contact Information	
Alhambra (*4B190148001*)	**Mailing Address**	111 South First Street
		Alhambra, CA 91801-3796
	Facility Contact and E-mail	David Dolphin ddolphin@cityofalhambra.org
Arcadia (*4B190149001*)	**Mailing Address**	11800 Goldring Road
		Arcadia, CA 91006-5879
	Facility Contact, Title, Phone, and E-mail	Vanessa Hevener, Environmental Services Officer (626) 305-5327 vhevener@ci.arcadia.ca.us
Artesia (*4B190150001*)	**Mailing Address**	18747 Clarkdale Avenue
		Artesia, CA 90701-5899
	Facility Contact, Title, and E-mail	Maria Dadian, Director of Public Works mdadian@cityofartesia.ci.us
Azusa (*4B190151001*)	**Mailing Address**	213 East Foothill Boulevard
		Azusa, CA 91702
	Facility Contact, Title, and E-mail	Carl Hassel, City Engineer chassel@ci.azusa.ca.us
Baldwin Park (*4B190152001*)	**Mailing Address**	14403 East Pacific Avenue
		Baldwin Park, CA 91706-4297
	Facility Contact, Title, and E-mail	David Lopez, Associate Engineer dlopez@baldwinpark.com
Bell (*4B190153001*)	**Mailing Address**	6330 Pine Avenue
		Bell, CA 90201-1291
	Facility Contact, Title, and E-mail	Terri Rodrigue, City Engineer trodrigue@cityofbell.org
Bell Gardens (*4B190139002*)	**Mailing Address**	7100 South Garfield Avenue
		Bell Gardens, CA 90201-3293
	Facility Contact, Title, and Phone	John Oropeza, Director of Public Works (562) 806-7700
Bellflower (*4B190154001*)	**Mailing Address**	16600 Civic Center Drive
		Bellflower, CA 90706-5494
	Facility Contact, Title, and E-mail	Bernie Iniguez, Environmental Services Manager biniguez@bellflower.org
Beverly Hills (*4B190132002*)	**Mailing Address**	455 North Rexford Drive
		Beverly Hills, CA 90210
	Facility Contact, Title, and E-mail	Vincent Chee, Project Civil Engineer kgettler@beverlyhills.org
Bradbury (*4B190155001*)	**Mailing Address**	600 Winston Avenue
		Bradbury, CA 91010-1199
	Facility Contact, Title, and E-mail	Elroy Kiepke, City Engineer mkeith@cityofbradbury.org
Burbank (*4B190101002*)	**Mailing Address**	P.O. Box 6459
		Burbank, CA 91510
	Facility Contact, Title, and E-mail	Bonnie Teaford, Public Works Director bteaford@ci.burbank.ca.us
Calabasas (*4B190157001*)	**Mailing Address**	100 Civic Center Way
		Calabasas, CA 91302-3172
	Facility Contact, Title, and E-mail	Alex Farassati, ESM afarassati@cityofcalabasas.com
Carson (*4B190158001*)	**Mailing Address**	P.O. Box 6234
		Carson, CA 90745
	Facility Contact, Title,	Patricia Elkins, Building Construction Manager

Permittee (WDID)	Contact Information	
	and E-mail	pelkins@carson.ca.us
Cerritos (*4B190159001*)	**Mailing Address**	P.O. Box 3130
		Cerritos, CA 90703-3130
	Facility Contact, Title, and E-mail	Mike O'Grady, Environmental Services mo'grady@cerritos.us
Claremont (*4B190160001*)	**Mailing Address**	207 Harvard Avenue
		Claremont, CA 91711-4719
	Facility Contact, Title, and E-mail	Craig Bradshaw, City Engineer cbradshaw@ci.claremont.ca.us
Commerce (*4B190161001*)	**Mailing Address**	2535 Commerce Way
		Commerce, CA 90040-1487
	Facility Contact and E-mail	Gina Nila gnila@ci.commerce.ca.us
Compton (*4B190162001*)	**Mailing Address**	205 South Willowbrook Avenue
		Compton, CA 90220-3190
	Facility Contact, Title, and Phone	Hien Nguyen, Assistant City Engineer (310) 761-1476
Covina (*4B190163001*)	**Mailing Address**	125 East College Street
		Covina, CA 91723-2199
	Facility Contact, Title, and E-mail	Vivian Castro, Environmental Services Manager vcastro@covinaca.gov
Cudahy (*4B190164001*)	**Mailing Address**	P.O. Box 1007
		Cudahy, CA 90201-6097
	Facility Contact, Title, and E-mail	Hector Rodriguez, City Manager hrodriguez@cityofcudahy.ca.us
Culver City (*4B190165001*)	**Mailing Address**	9770 Culver Boulevard
		Culver City, CA 90232-0507
	Facility Contact, Title, and Phone	Damian Skinner, Manager (310) 253-6421
Diamond Bar (*4B190166001*)	**Mailing Address**	21825 East Copley Drive
		Diamond Bar, CA 91765-4177
	Facility Contact, Title, and E-mail	David Liu, Director of Public Works dliu@diamondbarca.gov
Downey (*4B190167001*)	**Mailing Address**	P.O. Box 7016
		Downey, CA 90241-7016
	Facility Contact , Title, and E-mail	Yvonne Blumberg yblumberg@downeyca.org
Duarte (*4B190168001*)	**Mailing Address**	1600 Huntington Drive
		Duarte, CA 91010-2592
	Facility Contact, Title, and Phone	Steve Esbenshades, Engineering Division Manager (626) 357-7931 ext. 233
El Monte (*4B190169001*)	**Mailing Address**	P.O. Box 6008
		El Monte, CA 91731
	Facility Contact, Title, and Phone	James A Enriquez, Director of Public Works (626) 580-2058
El Segundo (*4B190170001*)	**Mailing Address**	350 Main Street
		El Segundo, CA 90245-3895
	Facility Contact, Title, Phone, and E-mail	Stephanie Katsouleas, Public Works Director (310) 524-2356 skatsouleas@elsegundo.org
Gardena (*4B190118002*)	**Mailing Address**	P.O. Box 47003
		Gardena, CA 90247-3778

Permittee (WDID)	Contact Information	
	Facility Contact, Title, and E-mail	Ron Jackson, Building Maintenance Supervisor jfelix@ci.gardena.ci.us
Glendale (*4B190171001*)	**Mailing Address**	Engineering Section, 633 East Broadway, Room 209
		Glendale, CA 91206-4308
	Facility Contact, Title, and E-mail	Maurice Oillataguerre, Senior Environmental Program Scientist moillataguerre@ci.glendale.ca.us
Glendora (*4B190172001*)	**Mailing Address**	116 East Foothill Boulevard
		Glendora, CA 91741
	Facility Contact, Title, and E-mail	Dave Davies, Deputy Director of Public Works ddavies@ci.glendora.ca.us
Hawaiian Gardens (*4B190173001*)	**Mailing Address**	21815 Pioneer Boulevard
		Hawaiian Gardens, CA 90716
	Facility Contact, Title, and E-mail	Joseph Colombo, Director of Community Development jcolombo@ghcity.org
Hawthorne (*4B190174001*)	**Mailing Address**	4455 West 126th Street
		Hawthorne, CA 90250-4482
	Facility Contact, Title, and E-mail	Arnold Shadbehr, Chief General Service and Public Works ashadbehr@cityofhawthorne.org
Hermosa Beach (*4B190175001*)	**Mailing Address**	1315 Valley Drive
		Hermosa Beach, CA 90254-3884
	Facility Contact, Title, and E-mail	Homayoun Behboodi, Associate Engineer hbehboodi@hermosabch.org
Hidden Hills (*4B190176001*)	**Mailing Address**	6165 Spring Valley Road
		Hidden Hills, CA 91302
	Facility Contact, Title, and Phone	Kimberly Colberts, Environmental Coordinator (310) 257-2004
Huntington Park (*4B190177001*)	**Mailing Address**	6550 Miles Avenue
		Huntington Park, CA 90255
	Facility Contact, Title, and Phone	Craig Melich, City Engineer and City Official (323) 584-6253
Industry (*4B190178001*)	**Mailing Address**	P.O. Box 3366
		Industry, CA 91744-3995
	Facility Contact and Title	Mike Nagaoka, Director of Public Safety
Inglewood (*4B190179001*)	**Mailing Address**	1 W. Manchester Blvd, 3rd Floor
		Inglewood, CA 90301-1750
	Facility Contact, Title, and E-mail	Lauren Amimoto, Senior Administrative Analyst lamimoto@cityofinglewood.org
Irwindale (*4B190180001*)	**Mailing Address**	5050 North Irwindale Avenue
		Irwindale, CA 91706
	Facility Contact, Title, and E-mail	Kwok Tam, Director of Public Works ktam@ci.irwindale.ca.us
La Canada Flintridge (*4B190181001*)	**Mailing Address**	1327 Foothill Boulevard
		La Canada Flintridge, CA 91011-2137
	Facility Contact, Title, and E-mail	Edward G. Hitti, Director of Public Works ehitti@lcf.ca.gov
La Habra Heights (*4B190182001*)	**Mailing Address**	1245 North Hacienda Boulevard
		La Habra Heights, CA 90631-2570
	Facility Contact, Title, and E-mail	Shauna Clark, City Manager shaunac@lhhcity.org
La Mirada	**Mailing Address**	13700 La Mirada Boulevard

Permittee (WDID)	**Contact Information**	
(*4B190183001*)		La Mirada, CA 90638-0828
	Facility Contact, Title, and E-mail	Steve Forster, Public Works Director sforster@cityoflamirada.org
La Puente (*4B190184001*)	**Mailing Address**	15900 East Marin Street
		La Puente, CA 91744-4788
	Facility Contact, Title, and E-mail	John DiMario, Director of Development Services jdimario@lapuente.org
La Verne (*4B190185001*)	**Mailing Address**	3660 "D" Street
		La Verne, CA 91750-3599
	Facility Contact, Title, and E-mail	Daniel Keesey, Director of Public Works dkeesey@ci.la-verne.ca.us
Lakewood (*4B190186001*)	**Mailing Address**	P.O. Box 158
		Lakewood, CA 90714-0158
	Facility Contact and E-mail	Konya Vivanti kvivanti@lakewoodcity.org
Lawndale (*4B190127002*)	**Mailing Address**	14717 Burin Avenue
		Lawndale, CA 90260
	Facility Contact and Title	Marlene Miyoshi, Senior Administrative Analyst
Lomita (*4B190187001*)	**Mailing Address**	P.O. Box 339
		Lomita, CA 90717-0098
	Facility Contact, Title, and E-mail	Tom A. Odom, City Administrator d.tomita@lomitacity.com
Los Angeles (*4B190188001*)	**Mailing Address**	1149 S. Broadway, 10th Floor
		Los Angeles, CA 90015
	Facility Contact, Title, and Phone	Shahram Kharaghani, Program Manager (213) 485-0587
Lynwood (*4B190189001*)	**Mailing Address**	11330 Bullis Road
		Lynwood, CA 90262-3693
	Facility Contact and Phone	Josef Kekula (310) 603-0220 ext. 287
Malibu (*4B190190001*)	**Mailing Address**	23825 Stuart Ranch Road
		Malibu, CA 90265-4861
	Facility Contact, Title, and E-mail	Jennifer Brown, Environmental Program Analyst jbrown@malibucity.org
Manhattan Beach (*4B190191001*)	**Mailing Address**	1400 Highland Avenue
		Manhattan Beach, CA 90266-4795
	Facility Contact, Title, and Email	Brian Wright, Water Supervisor bwright@citymb.info
Maywood (*4B190192001*)	**Mailing Address**	4319 East Slauson Avenue
		Maywood, CA 90270-2897
	Facility Contact, Title, and Phone	Andre Dupret, Project Manager (323) 562-5721
Monrovia (*4B190193001*)	**Mailing Address**	415 South Ivy Avenue
		Monrovia, CA 91016-2888
	Facility Contact and E-mail	Heather Maloney hmaloney@ci.monrovia.ca.gov
Montebello (*4B190194001*)	**Mailing Address**	1600 West Beverly Boulevard
		Montebello, CA 90640-3970
	Facility Contact and E-mail	Cory Roberts croberts@aaeinc.com
Monterey Park	**Mailing Address**	320 West Newmark Avenue

Permittee (WDID)	Contact Information	
(*4B190195001*)		Monterey Park, CA 91754-2896
	Facility Contact, Phone, and E-mail	Amy Ho (626) 307-1383 amho@montereypark.ca.gov John Hunter (Consultant) at jhunter@jhla.net
Norwalk (*4B190196001*)	**Mailing Address**	P.O. Box 1030
		Norwalk, CA 90651-1030
	Facility Contact and Title	Chino Consunji, City Engineer
Palos Verdes Estates (*4B190197001*)	**Mailing Address**	340 Palos Verdes Drive West
		Palos Verdes Estates, CA 90274
	Facility Contact, Title, and E-mail	Allan Rigg, Director of Public Works arigg@pvestates.org
Paramount (*4B190198001*)	**Mailing Address**	16400 Colorado Avenue
		Paramount, CA 90723-5091
	Facility Contact, Title, and E-mail	Chris Cash, Utility and Infrastructure Assistant Director ccash@paramountcity,org
Pasadena (*4B190199001*)	**Mailing Address**	P.O. Box 7115
		Pasadena, CA 91109-7215
	Facility Contact and E-mail	Stephen Walker swalker@cityofpasadena.net
Pico Rivera (*4B190200001*)	**Mailing Address**	P.O. Box 1016
		Pico Rivera, CA 90660-1016
	Facility Contact, Title, and E-mail	Art Cervantes, Director of Public Works acervantes@pico-rivera.org
Pomona (*4B190145003*)	**Mailing Address**	P.O. Box 660
		Pomona, CA 91769-0660
	Facility Contact, Title, and E-mail	Julie Carver, Environmental Programs Coordinator Julie_Carver@ci.pomona.ca.us
Rancho Palos Verdes (*4B190201001*)	**Mailing Address**	30940 Hawthorne Boulevard
		Rancho Palos Verdes, CA 90275
	Facility Contact, Title, and E-mail	Ray Holland, Interim Public Works Director clehr@rpv.com
Redondo Beach (*4B190143002*)	**Mailing Address**	P.O. Box 270
		Redondo Beach, CA 90277-0270
	Facility Contact, Title, and E-mail	Mike Shay, Principal Civil Engineer mshay@redondo.org
Rolling Hills (*4B190202001*)	**Mailing Address**	2 Portuguese Bend Road
		Rolling Hills, CA 90274-5199
	Facility Contact, Title, and E-mail	Greg Grammer, Assistant to the City Manager ggrammer@rollinghillsestatesca.gov
Rolling Hills Estates (*4B190203001*)	**Mailing Address**	4045 Palos Verdes Drive North
		Rolling Hills Estates, CA 90274
	Facility Contact, Title, and E-mail	Greg Grammer, Assistant to the City Manager ggrammer@rollinghillsestatesca.gov
Rosemead (*4B190204001*)	**Mailing Address**	8838 East Valley Boulevard
		Rosemead, CA 91770-1787
	Facility Contact, Title, and Phone	Chris Marcarello, Director of PW (626) 569-2118
San Dimas (*4B190205001*)	**Mailing Address**	245 East Bonita Avenue
		San Dimas, CA 91773-3002
	Facility Contact, Title,	Latoya Cyrus, Environmental Services Coordinator

Permittee (WDID)	Contact Information	
	and E-mail	lcyrus@ci.san-dimas.ca.us
San Fernando (*4B190206001*)	**Mailing Address**	117 Macneil Street
		San Fernando, CA 91340
	Facility Contact, Title, and E-mail	Ron Ruiz, Director of Public Works rruiz@sfcity.org
San Gabriel (*4B190207001*)	**Mailing Address**	425 South Mission Drive
		San Gabriel, CA 91775
	Facility Contact, Title, and Phone	Daren T. Grilley, City Engineer (626) 308-2806 ext. 4631
San Marino (*4B190208001*)	**Mailing Address**	2200 Huntington Drive
		San Marino, CA 91108-2691
	Facility Contact, Title, and E-mail	Chuck Richie, Director of Parks and Public Works crichie@cityofsanmarino.org
Santa Clarita (*4B190117001*)	**Mailing Address**	23920 West Valencia Boulevard, Suite 300
		Santa Clarita, CA 91355
	Facility Contact, Title, and Phone	Travis Lange, Environmental Services Manager (661) 255-4337
Santa Fe Springs (*4B190108003*)	**Mailing Address**	P.O. Box 2120
		Santa Fe Springs, CA 90670-2120
	Facility Contact, Title, and E-mail	Sarina Morales-Choate, Civil Engineer Assistant smorales-choate@santafesprings.org
Santa Monica (*4B190122002*)	**Mailing Address**	1685 Main Street
		Santa Monica, CA 90401-3295
	Facility Contact, Title, and E-mail	Neal Shapiro, Urban Runoff Coordinator nshapiro@smgov.net
Sierra Madre (*4B190209001*)	**Mailing Address**	232 West Sierra Madre Boulevard
		Sierra Madre, CA 91024-2312
	Facility Contact, Title, and Phone	James Carlson, Management Analyst (626) 355-7135 ext. 803
Signal Hill (*4B190210001*)	**Mailing Address**	2175 Cherry Avenue
		Signal Hill, CA 90755
	Facility Contact, Phone, and E-mail	John Hunter (562) 802-7880 jhunter@jlha.net
South El Monte (*4B190211001*)	**Mailing Address**	1415 North Santa Anita Avenue
		South El Monte, CA 91733-3389
	Facility Contact and Phone	Anthony Ybarra, City Manager (626) 579-6540
South Gate (*4B190212001*)	**Mailing Address**	8650 California Avenue
		South Gate, CA 90280
	Facility Contact, Phone, and E-mail	John Hunter (562) 802-7880 jhunter@jlha.net
South Pasadena (*4B190213001*)	**Mailing Address**	1414 Mission Street
		South Pasadena, CA 91030-3298
	Facility Contact, Phone, and E-mail	John Hunter (562) 802-7880 jhunter@jlha.net
Temple City (*4B190214001*)	**Mailing Address**	9701 Las Tunas Drive
		Temple City, CA 91780-2249
	Facility Contact,	Joe Lambert at (626) 285-2171 or

Permittee (WDID)	**Contact Information**	
	Phone, and E-mail	John Hunter at (562) 802-7880/jhunter@jlha.net
Torrance (*4B190215001*)	**Mailing Address**	3031 Torrance Boulevard
		Torrance, CA 90503-5059
	Facility Contact and Title	Leslie Cortez, Senior Administrative Assistant
Vernon (*4B190216001*)	**Mailing Address**	4305 Santa Fe Avenue
		Vernon, CA 90058-1786
	Facility Contact and Phone	Claudia Arellano (323) 583-8811
Walnut (*4B190217001*)	**Mailing Address**	P.O. Box 682
		Walnut, CA 91788
	Facility Contact and Title	Jack Yoshino, Senior Management Assistant
West Covina (*4B190218001*)	**Mailing Address**	P.O. Box 1440
		West Covina, CA 91793-1440
	Facility Contact, Title, and E-mail	Samuel Gutierrez, Engineering Technician sam.gutierrez@westcovina.org
West Hollywood (*4B190219001*)	**Mailing Address**	8300 Santa Monica Boulevard
		West Hollywood, CA 90069-4314
	Facility Contact, Title, and E-mail	Sharon Perlstein, City Engineer sperlstein@weho.org
Westlake Village (*4B190220001*)	**Mailing Address**	31200 Oak Crest Drive
		Westlake Village, CA 91361
	Facility Contact, Title, Phone, and E-mail	Joe Bellomo, Stormwater Program Manager (805) 279-6856 jbellomo@willdan.com
Whittier (*4B190221001*)	**Mailing Address**	13230 Penn Street
		Whittier, CA 90602-1772
	Facility Contact, Title, and E-mail	David Mochizuki, Director of Public Works dmochizuki@cityofwhittier.org
County of Los Angeles (*4B190107099*)	**Mailing Address**	900 South Fremont Avenue
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	Facility Contact, Title, Phone, and E-mail	Gary Hildebrand, Assistant Deputy Director, Division Engineer (626) 458-4300 ghildeb@dpw.lacounty.gov
Los Angeles County Flood Control District (*4B190107101*)	**Mailing Address**	900 South Fremont Avenue
		Alhambra, CA 91803
	Facility Contact, Title, Phone, and E-mail	Gary Hildebrand, Assistant Deputy Director, Division Engineer (626) 458-4300 ghildeb@dpw.lacounty.gov

Table 3. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
All Municipal Separate Storm Sewer System discharge points within Los Angeles County with the exception of the City of Long Beach	Storm Water and Non-Storm Water	Numerous	Numerous	Surface waters identified in Tables 2-1, 2-1a, 2-3, and 2-4, and Appendix 1, Table 1 of the ***Water Quality Control Plan - Los Angeles Region*** (***Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties***), and other unidentified tributaries to these surface waters within the following Watershed Management Areas: (1) Santa Clara River Watershed; (2) Santa Monica Bay Watershed Management Area, including Malibu Creek Watershed and Ballona Creek Watershed; (3) Los Angeles River Watershed; (4) Dominguez Channel and Greater Los Angeles/Long Beach Harbors Watershed Management Area; (5) Los Cerritos Channel and Alamitos Bay Watershed Management Area; (6) San Gabriel River Watershed; and (7) Santa Ana River Watershed.[1]

Table 4. Administrative Information

This Order was adopted by the California Regional Water Quality Control Board, Los Angeles Region on:	**November 8, 2012**
This Order becomes effective on:	**December 28, 2012**
This Order expires on:	**December 28, 2017**
In accordance with Title 23, Division 3, Chapter 9 of the California Code of Regulations and Title 40, Part 122 of the Code of Federal Regulations, each Discharger shall file a Report of Waste Discharge as application for issuance of new waste discharge requirements no later than:	**180 days prior to the Order expiration date above**

[1] Note that the Santa Ana River Watershed lies primarily within the boundaries of the Santa Ana Regional Water Quality Control Board. However, a portion of the Chino Basin subwatershed lies within the jurisdictions of Pomona and Claremont in Los Angeles County. The primary receiving waters within the Los Angeles County portion of the Chino Basin subwatershed are San Antonio Creek and Chino Creek.

In accordance with section 2235.4 of Title 23 of the California Code of Regulations, the terms and conditions of an expired permit are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on continuation of expired permits are complied with. Accordingly, if a new order is not adopted by the expiration date above, then the Permittees shall continue to implement the requirements of this Order until a new one is adopted.

I, Samuel Unger, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on November 8, 2012.

Samuel Unger

Samuel Unger, Executive Officer

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II. FINDINGS

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter Regional Water Board) finds:

A. Nature of Discharges and Sources of Pollutants

Storm water and non-storm water discharges consist of surface runoff generated from various land uses, which are conveyed via the municipal separate storm sewer system and ultimately discharged into surface waters throughout the region. Discharges of storm water and non-storm water from the Municipal Separate Storm Sewer Systems (MS4s) within the Coastal Watersheds of Los Angeles County convey pollutants to surface waters throughout the Los Angeles Region. In general, the primary pollutants of concern in these discharges identified by the Los Angeles County Flood Control District Integrated Receiving Water Impacts Report (1994-2005) are indicator bacteria, total aluminum, copper, lead, zinc, diazinon, and cyanide. Aquatic toxicity, particularly during wet weather, is also a concern based on a review of Annual Monitoring Reports from 2005-10. Storm water and non-storm water discharges of debris and trash are also a pervasive water quality problem in the Los Angeles Region though significant strides have been made by a number of Permittees in addressing this problem through the implementation of control measures to achieve wasteload allocations established in trash TMDLs.

Pollutants in storm water and non-storm water have damaging effects on both human health and aquatic ecosystems. Water quality assessments conducted by the Regional Water Board have identified impairment of beneficial uses of water bodies in the Los Angeles Region caused or contributed to by pollutant loading from municipal storm water and non-storm water discharges. As a result of these impairments, there are beach postings and closures, fish consumption advisories, local and global ecosystem and aesthetic impacts from trash and debris, reduced habitat for threatened and endangered species, among others. The Regional Water Board and USEPA have established 33 total maximum daily loads (TMDLs) that identify Los Angeles County MS4 discharges as one of the pollutant sources causing or contributing to these water quality impairments.

B. Permit History

Prior to the issuance of this Order, Regional Water Board Order No. 01-182 served as the NPDES Permit for MS4 storm water and non-storm water discharges within the Coastal Watersheds of the County of Los Angeles. The requirements of Order No. 01-182 applied to the Los Angeles County Flood Control District, the unincorporated areas of Los Angeles County under County jurisdiction, and 84 Cities within the Los Angeles County Flood Control District with the exception of the City of Long Beach. The first county-wide MS4 permit for the County of Los Angeles and the incorporated areas therein was Order No. 90-079, adopted by the Regional Water Board on June 18, 1990.

Under Order No. 01-182, the Los Angeles County Flood Control District was designated the Principal Permittee, and the County of Los Angeles and 84 incorporated Cities were each designated Permittees. The Principal Permittee coordinated and facilitated activities necessary to comply with the requirements of Order No. 01-182, but was not responsible for ensuring compliance of any of the other Permittees. The designation of a Principal Permittee has not been carried over from Order No. 01-182.

Order No. 01-182 was subsequently amended by the Regional Water Board on September 14, 2006 by Order No. R4-2006-0074 to incorporate provisions consistent with the assumptions and requirements of the Santa Monica Bay Beaches Dry Weather Bacteria TMDL (SMB Dry Weather Bacteria TMDL) waste load allocations (WLAs). As a result of a legal challenge to Order No. R4-2006-0074, the Los Angeles County Superior Court issued a peremptory writ of mandate on July 23, 2010 requiring the Regional Water Board to void and set aside the amendments adopted through Order No. R4-2006-0074 in Order No. 01-182. The Court concluded that the permit proceeding at which Order No. R4-2006-0074 was adopted was procedurally deficient. The Court did not address the substantive merits of the amendments themselves, and thus made no determination about the substantive validity of Order No. R4-2006-0074. In compliance with the writ of mandate, the Regional Water Board voided and set aside the amendments adopted through Order No. R4-2006-0074 on April 14, 2011. This Order reincorporates requirements equivalent to the 2006 provisions to implement the SMB Dry Weather Bacteria TMDL.

In addition, Order No. 01-182 was amended on August 9, 2007 by Order No. R4-2007-0042 to incorporate provisions consistent with the assumptions and requirements of the Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL, and was again amended on December 10, 2009 by Order No. R4-2009-0130 to incorporate provisions consistent with the assumptions and requirements of the Los Angeles River Watershed Trash TMDL.

C. Permit Application

On June 12, 2006, prior to the expiration date of Order No. 01-182, all of the Permittees filed Reports of Waste Discharge (ROWD) applying for renewal of their waste discharge requirements that serve as an NPDES permit to discharge storm water and authorized and conditionally exempt non-storm water through their MS4 to surface waters. Specifically, the Los Angeles County Flood Control District (LACFCD) submitted an ROWD application on behalf of itself, the County of Los Angeles, and 78 other Permittees. Several Permittees under Order No. 01-182 elected to not be included as part of the Los Angeles County Flood Control District's ROWD. On June 12, 2006, the Cities of Downey and Signal Hill each submitted an individual ROWD application requesting a separate MS4 Permit; and the Upper San Gabriel River Watershed Coalition, comprised of the cities of Azusa, Claremont, Glendora, Irwindale, and Whittier also submitted an individual ROWD application requesting a separate MS4 Permit for these cities. In 2010, the LACFCD withdrew from its participation in the 2006 ROWD submitted in conjunction with the County and 78 other co-permittees, and submitted a new ROWD also requesting an individual MS4 permit. The LACFCD also requested that, if an individual MS4 permit was not issued to it, it no longer be designated as the

Principal Permittee and it be relieved of Principal Permittee responsibilities. The Regional Water Board evaluated each of the 2006 ROWDs and notified all of the Permittees that their ROWDs did not satisfy federal storm water regulations contained in the USEPA Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems; Final Rule, August 9, 1996 (61 ***Fed Reg.*** 41697). Because each ROWD did not satisfy federal requirements, the Regional Water Board deemed all four 2006 ROWDs incomplete. The Regional Water Board also evaluated the LACFCD's 2010 ROWD and found that it too did not satisfy federal requirements for MS4s.

Though five separate ROWDs were submitted, the Regional Water Board retains discretion as the permitting authority to determine whether to issue permits for discharges from MS4s on a system-wide or jurisdiction-wide basis (Clean Water Act (CWA) § 402(p)(3)(B)(i); 40 CFR section 122.26, subdivisions (a)(1)(v) and (a)(3)(ii)). Because of the complexity and networking of the MS4 within Los Angeles County, which often results in commingled discharges, the Regional Water Board has previously adopted a system-wide approach to permitting MS4 discharges within Los Angeles County.

In evaluating the five separate ROWDs, the Regional Water Board considered the appropriateness of permitting discharges from MS4s within Los Angeles County on a system-wide or jurisdiction-wide basis or a combination of both. Based on that evaluation, the Regional Water Board again determined that, because of the complexity and networking of the MS4 within Los Angeles County, that one system-wide permit is appropriate. In order to provide individual Permittees with more specific requirements, certain provisions of this Order are organized by watershed management area, which is appropriate given the requirements to implement 33 watershed-based TMDLs. The Regional Water Board also determined that because the LACFCD owns and operates large portions of the MS4 infrastructure, including but not limited to catch basins, storm drains, outfalls and open channels, in each coastal watershed management area within Los Angeles County, the LACFCD should remain a Permittee in the single system-wide permit; however, this Order relieves the LACFCD of its role as "Principal Permittee."

D. Permit Coverage and Facility Description

The Los Angeles County Flood Control District, the County of Los Angeles, and 84 incorporated cities within the Los Angeles County Flood Control District with the exception of the City of Long Beach (see Table 5, List of Permittees), hereinafter referred to separately as Permittees and jointly as the Dischargers, discharge storm water and non-storm water from municipal separate storm sewer systems (MS4s), also called storm drain systems. For the purposes of this Order, references to the "Discharger" or "Permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger, or Permittees herein.

The area covered under this Order encompasses more than 3,000 square miles. This area contains a vast drainage network that serves incorporated and unincorporated areas in every Watershed Management Area within the Los Angeles Region. Maps

depicting the major drainage infrastructure within the area covered under this Order are included in Attachment C of this Order.

Table 5. List of Permittees

Agoura Hills	Hawaiian Gardens	Pomona
Alhambra	Hawthorne	Rancho Palos Verdes
Arcadia	Hermosa Beach	Redondo Beach
Artesia	Hidden Hills	Rolling Hills
Azusa	Huntington Park	Rolling Hills Estates
Baldwin Park	Industry	Rosemead
Bell	Inglewood	San Dimas
Bell Gardens	Irwindale	San Fernando
Bellflower	La Canada Flintridge	San Gabriel
Beverly Hills	La Habra Heights	San Marino
Bradbury	La Mirada	Santa Clarita
Burbank	La Puente	Santa Fe Springs
Calabasas	La Verne	Santa Monica
Carson	Lakewood	Sierra Madre
Cerritos	Lawndale	Signal Hill
Claremont	Lomita	South El Monte
Commerce	Los Angeles	South Gate
Compton	Lynwood	South Pasadena
Covina	Malibu	Temple City
Cudahy	Manhattan Beach	Torrance
Culver City	Maywood	Vernon
Diamond Bar	Monrovia	Walnut
Downey	Montebello	West Covina
Duarte	Monterey Park	West Hollywood
El Monte	Norwalk	Westlake Village
El Segundo	Palos Verdes Estates	Whittier
Gardena	Paramount	County of Los Angeles
Glendale	Pasadena	Los Angeles County Flood Control District
Glendora	Pico Rivera	

E. Los Angeles County Flood Control District

In 1915, the California Legislature enacted the Los Angeles County Flood Control Act, establishing the Los Angeles County Flood Control District (LACFCD). The objects and purposes of the Act are to provide for the control and conservation of the flood, storm and other waste waters within the flood control district. Among its other powers, the LACFCD also has the power to preserve, enhance, and add recreational features to lands or interests in lands contiguous to its properties for the protection, preservation, and use of the scenic beauty and natural environment for the properties or the lands. The LACFCD is governed, as a separate entity, by the County of Los Angeles Board of Supervisors.

The LACFCD's system includes the majority of drainage infrastructure within incorporated and unincorporated areas in every watershed, including approximately 500 miles of open channel, 3,500 miles of underground drains, and an estimated 88,000 catch basins, and several dams. Portions of the LACFCD's current system were originally unmodified natural rivers and water courses.

The LACFCD's system conveys both storm and non-storm water throughout the Los Angeles basin. Other Permittees' MS4s connect and discharge to the LACFCD's system.

The waters and pollutants discharged from the LACFCD's system come from various sources. These sources can include storm water and non-storm water from the Permittees under this permit and other NPDES and non-NPDES Permittees discharging into the LACFCD's system, including industrial waste water dischargers, waste water treatment facilities, industrial and construction stormwater Permittees, water suppliers, government entities, CERCLA potentially responsible parties, and Caltrans. Sources can also include discharges from school districts that do not operate large or medium-sized municipal storm sewers and discharges from entities that have waste discharge requirements or waivers of waste discharge requirements.

Unlike other Permittees, including the County of Los Angeles, the LACFCD does not own or operate any municipal sanitary sewer systems, public streets, roads, or highways.

The LACFCD in contrast to the County of Los Angeles has no planning, zoning, development permitting or other land use authority over industrial or commercial facilities, new developments or re-development projects, or development construction sites located in any incorporated or unincorporated areas within its service area. The Permittees that have such land use authority are responsible for implementing a storm water management program to inspect and control pollutants from industrial and commercial facilities, new development and re-development projects, and development construction sites within their jurisdictional boundaries. Nonetheless, as an owner and operator of MS4s, the LACFCD is required by federal regulations to control pollutant discharges into and from its MS4, including the ability to control through interagency agreements among co-Permittees and other owners of a MS4 the contribution of pollutants from one portion of the MS4 to another portion of the MS4.

F. Permit Scope

This Order regulates municipal discharges of storm water and non-storm water from the Permittees' MS4s. Section 122.26(b)(8) of title 40 of the Code of Federal Regulations (CFR) defines an MS4 as "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) [o]wned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian

tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) [d]esigned or used for collecting or conveying storm water; (iii) [w]hich is not a combined sewer; and (iv) [w]hich is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

Storm water discharges consist of those discharges that originate from precipitation events. Federal regulations define "storm water" as "storm water runoff, snow melt runoff, and surface runoff and drainage." (40 CFR § 122.26(b)(13).) While "surface runoff and drainage" is not defined in federal law, USEPA's preamble to its final storm water regulations demonstrates that the term is related to precipitation events such as rain and/or snowmelt. (55 ***Fed. Reg.*** 47990, 47995-96 (Nov. 16, 1990)).

Non-storm water discharges consist of all discharges through an MS4 that do not originate from precipitation events. Non-storm water discharges through an MS4 are prohibited unless authorized under a separate NPDES permit; authorized by USEPA pursuant to Sections 104(a) or 104(b) of the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); composed of natural flows; the result of emergency fire fighting activities; or conditionally exempted in this Order.

A permit issued to more than one Permittee for MS4 discharges may contain separate storm water management programs for particular Permittees or groups of Permittees. 40 CFR § 122.26(d)(2)(iv). Given the LACFCD's limited land use authority, it is appropriate for the LACFCD to have a separate and uniquely-tailored storm water management program. Accordingly, the storm water management program minimum control measures imposed on the LACFCD in Part VI.D of this Order differ in some ways from the minimum control measures imposed on other Permittees. Namely, aside from its own properties and facilities, the LACFCD is not subject to the Industrial/Commercial Facilities Program, the Planning and Land Development Program, and the Development Construction Program. However, as a discharger of storm and non-storm water, the LACFCD remains subject to the Public Information and Participation Program and the Illicit Connections and Illicit Discharges Elimination Program. Further, as the owner and operator of certain properties, facilities and infrastructure, the LACFCD remains subject to requirements of a Public Agency Activities Program.

G. Geographic Coverage and Watershed Management Areas

The municipal storm water and non-storm water discharges flow into receiving waters in the Watershed Management Areas of the Santa Clara River Watershed; Santa Monica Bay Watershed Management Area, including Malibu Creek Watershed and Ballona Creek Watershed; Los Angeles River Watershed; Dominguez Channel and Greater Los Angeles/Long Beach Harbors Watershed Management Area; Los Cerritos Channel and Alamitos Bay Watershed Management Area; San Gabriel River Watershed; and Santa Ana River Watershed.

This Order redefines Watershed Management Areas (WMAs) consistent with the delineations used in the Regional Water Board's Watershed Management Initiative. Permittees included in each of the WMAs are listed in Attachment K.

Maps depicting each WMA, its subwatersheds, and the major receiving waters therein are included in Attachment B.

Federal, state, regional or local entities in jurisdictions outside the Los Angeles County Flood Control District, and not currently named as Permittee to this Order, may operate MS4 facilities and/or discharge to the MS4 and water bodies covered by this Order. Pursuant to 40 CFR sections 122.26(d)(1)(ii) and 122.26(d)(2)(iv), each Permittee shall maintain the necessary legal authority to control the contribution of pollutants to its MS4 and shall include in its storm water management program a comprehensive planning process that includes intergovernmental coordination, where necessary.

Sources of MS4 discharges into receiving waters in the County of Los Angeles but not covered by this Order include the following:

- About 34 square miles of unincorporated area in Ventura County, which drain into Malibu Creek and then to Santa Monica Bay,
- About 9 square miles of the City of Thousand Oaks, which also drain into Malibu Creek and then to Santa Monica Bay, and
- About 86 square miles of area in Orange County, which drain into Coyote Creek and then into the San Gabriel River.

Specifically, the Orange County Flood Control District (OCFCD) owns and operates the Los Alamitos Retarding Basin and Pumping Station (Los Alamitos Retarding Basin). The Los Alamitos Retarding Basin is within the San Gabriel River Watershed, and is located adjacent to the Los Angeles and Orange County boundary. The majority of the 30-acre Los Alamitos Retarding Basin is in Orange County; however, the northwest corner of the facility is located in the County of Los Angeles. Storm water and non-storm water discharges, which drain to the Los Alamitos Retarding Basin, are pumped to the San Gabriel River Estuary (SGR Estuary) through pumps and subterranean piping. The pumps and discharge point are located in the County of Los Angeles.

The OCFCD pumps the water within the Los Alamitos Retarding Basin to the San Gabriel River Estuary through four discharge pipes, which are covered by tide gates. The discharge point is located approximately 700 feet downstream from the 2nd Street Bridge in Long Beach. The total pumping capacity of the four pumps is 800 cubic feet per second (cfs). There is also a 5 cfs sump pump that discharges nuisance flow continuously to the Estuary though a smaller diameter uncovered pipe.

The discharge from the Los Alamitos Retarding Basin is covered under the Orange County Municipal NPDES Storm Water Permit (NPDES Permit No. CAS618030, Santa Ana Regional Water Quality Control Board Order No. R8-2010-0062), which was issued to the County of Orange, Orange County Flood Control District and Incorporated Cities on May 22, 2009. The Orange County MS4 Permit references the San Gabriel River Metals and Selenium TMDL (Metals TMDL). The waste load allocations listed in the

Metals TMDL for Coyote Creek are included in the Orange County MS4 Permit. However, the Orange County MS4 Permit does not contain the dry weather copper waste load allocations assigned to the Estuary.

H. Legal Authorities

This Order is issued pursuant to CWA section 402 and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). This Order serves as an NPDES permit for point source discharges from the Permittees' MS4s to surface waters. This Order also serves as waste discharge requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with Section 13260).

I. Municipal Separate Storm Sewer System Requirements. The 1972 Clean Water Act[2] established the NPDES Program to regulate the discharge of pollutants from point sources to waters of the United States. However, pollution from storm water and dry-weather urban runoff was largely unabated for over a decade. In response to the 1987 Amendments to the Clean Water Act, USEPA developed Phase I of the NPDES Storm Water Permitting Program in 1990, which established a framework for regulating municipal and industrial discharges of storm water and non-storm water. The Phase I program addressed sources of storm water and dry-weather urban runoff that had the greatest potential to negatively impact water quality. In particular, under Phase I, USEPA required NPDES Permit coverage for discharges from medium and large MS4 with populations of 100,000 or more. Operators of MS4s regulated under the Phase I NPDES Storm Water Program were required to obtain permit coverage for municipal discharges of storm water and non-storm water to waters of the United States

Early in the history of this MS4 Permit, the Regional Water Board designated the MS4s owned and/or operated by the incorporated cities and Los Angeles County unincorporated areas within the Coastal Watersheds of Los Angeles County as a large MS4 due to the total population of Los Angeles County, including that of unincorporated and incorporated areas, and the interrelationship between the Permittees' MS4s, pursuant to 40 CFR section 122.26(b)(4). The total population of the cities and County unincorporated areas covered by this Order was 9,519,338 in 2000 and has increased by approximately 300,000 to 9,818,605 in 2010, according to the United States Census.

This Order implements the federal Phase I NPDES Storm Water Program requirements. These requirements include three fundamental elements: (i) a requirement to effectively prohibit non-storm water discharges through the MS4, (ii) requirements to implement controls to reduce the discharge of pollutants to the maximum extent practicable, and (iii) other provisions the Regional Water Board has determined appropriate for the control of such pollutants.

J. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the Permittees' applications, through monitoring and reporting programs, and other available

[2] Federal Water Pollution Control Act; 33 U.S.C. § 1251 et seq., which, as amended in 1977, is commonly known as the Clean Water Act.

information. In accordance with federal regulations at 40 CFR section 124.8, a Fact Sheet (Attachment F) has been prepared to explain the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing this Order. The Fact Sheet is hereby incorporated into this Order and also constitutes part of the Findings of the Regional Water Board for this Order. Attachments A through E and G through R are also incorporated into this Order.

K. Water Quality Control Plans. The Clean Water Act requires the Regional Water Board to establish water quality standards for each water body in its region. Water quality standards include beneficial uses, water quality objectives and criteria that are established at levels sufficient to protect those beneficial uses, and an antidegradation policy to prevent degrading waters. The Regional Water Board adopted a ***Water Quality Control Plan - Los Angeles Region*** (hereinafter Basin Plan) on June 13, 1994 and has amended it on multiple occasions since 1994. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Los Angeles Region. Pursuant to California Water Code section 13263(a), the requirements of this Order implement the Basin Plan. Beneficial uses applicable to the surface water bodies that receive discharges from the Los Angeles County MS4 generally include those listed below.

Table 6. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Uses
All Municipal Separate Storm Sewer Systems (MS4s) discharge points within Los Angeles County coastal watersheds with the exception of the City of Long Beach	Multiple surface water bodies of the Los Angeles Region	Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); Industrial Process Supply (PROC); Ground Water Recharge (GWR); Freshwater Replenishment (FRSH); Navigation (NAV); Hydropower Generation (POW); Water Contact Recreation (REC-1); Limited Contact Recreation (LREC-1); Non-Contact Water Recreation (REC-2); Commercial and Sport Fishing (COMM); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Preservation of Areas of Special Biological Significance (BIOL); Wildlife Habitat (WILD); Preservation of Rare and Endangered Species (RARE); Marine Habitat (MAR); Wetland Habitat (WET); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); Shellfish Harvesting (SHELL)

1. Total Maximum Daily Loads (TMDLs)

Clean Water Act section 303(d)(1) requires each state to identify the waters within its boundaries that do not meet water quality standards. Water bodies that do not meet water quality standards are considered impaired and are placed on the state's "CWA Section 303(d) List". For each listed water body, the state is required to establish a TMDL of each pollutant impairing the water quality standards in that water body. A TMDL is a tool for implementing water quality standards and is based on the relationship between pollution sources and in-stream water quality conditions. The

TMDL establishes the allowable pollutant loadings for a water body and thereby provides the basis to establish water quality-based controls. These controls should provide the pollution reduction necessary for a water body to meet water quality standards. A TMDL is the sum of the allowable pollutant loads of a single pollutant from all contributing point sources (the waste load allocations or WLAs) and non-point sources (load allocations or LAs), plus the contribution from background sources and a margin of safety. (40 CFR section 130.2(i).) MS4 discharges are considered point source discharges.

Numerous receiving waters within Los Angeles County do not meet water quality standards or fully support beneficial uses and therefore have been classified as impaired on the State's 303(d) List. The Regional Water Board and USEPA have each established TMDLs to address many of these water quality impairments. Pursuant to CWA section 402(p)(B)(3)(iii) and 40 CFR section 122.44(d)(1)(vii)(B), this Order includes requirements that are consistent with and implement WLAs that are assigned to discharges from the Los Angeles County MS4 from 33 State-adopted and USEPA established TMDLs. This Order requires Permittees to comply with the TMDL Provisions in Part VI.E and Attachments L through R, which are consistent with the assumptions and requirements of the TMDL WLAs assigned to discharges from the Los Angeles County MS4. A comprehensive list of TMDLs by watershed management area and the Permittees subject to each TMDL is included in Attachment K.

Waste load allocations in these TMDLs are expressed in several ways depending on the nature of the pollutant and its impacts on receiving waters and beneficial uses. Bacteria WLAs assigned to MS4 discharges are expressed as the number of allowable exceedance days that a water body may exceed the Basin Plan water quality objectives for protection of the REC-1 beneficial use. Since the TMDLs and the WLAs contained therein are expressed as receiving water conditions, receiving water limitations have been included in this Order that are consistent with and implement the allowable exceedance day WLAs. Water quality-based effluent limitations are also included equivalent to the Basin Plan water quality objectives to allow the opportunity for Permittees to individually demonstrate compliance at an outfall or jurisdictional boundary, thus isolating the Permittee's pollutant contributions from those of other Permittees and from other pollutant sources to the receiving water.

WLAs for trash are expressed as progressively decreasing allowable amounts of trash discharges from a Permittee's jurisdictional area within the drainage area to the impaired water body. The Trash TMDLs require each Permittee to make annual reductions of its discharges of trash over a set period, until the numeric target of zero trash discharged from the MS4 is achieved. The Trash TMDLs specify a specific formula for calculating and allocating annual reductions in trash discharges from each jurisdictional area within a watershed. The formula results in specified annual amounts of trash that may be discharged from each jurisdiction into the receiving waters. Translation of the WLAs or compliance points described in the TMDLs into jurisdiction-specific load reductions from the baseline levels, as specified

in the TMDL, logically results in the articulation of an annual limitation on the amount of a pollutant that may be discharged. The specification of allowable annual trash discharge amounts meets the definition of an “effluent limitation”, as that term is defined in subdivision (c) of section 13385.1 of the California Water Code. Specifically, the trash discharge limitations constitute a “numeric restriction … on the quantity [or] discharge rate … of a pollutant or pollutants that may be discharged from an authorized location.”

TMDL WLAs for other pollutants (e.g., metals and toxics) are expressed as concentration and/or mass and water quality-based effluent limitations have been specified consistent with the expression of the WLA, including any applicable averaging periods. Some TMDLs specify that, if certain receiving water conditions are achieved, such achievement constitutes attainment of the WLA. In these cases, receiving water limitations and/or provisions outlining these alternate means of demonstrating compliance are included in the TMDL provisions in Part VI.E of this Order.

The inclusion of water quality-based effluent limitations and receiving water limitations to implement applicable WLAs provides a clear means of identifying required water quality outcomes within the permit and ensures accountability by Permittees to implement actions necessary to achieve the limitations.

A number of the TMDLs for bacteria, metals, and toxics establish WLAs that are assigned jointly to a group of Permittees whose storm water and/or non-storm water discharges are or may be commingled in the MS4 prior to discharge to the receiving water subject to the TMDL. TMDLs address commingled MS4 discharges by assigning a WLA to a group of MS4 Permittees based on co-location within the same subwatershed. Permittees with co-mingled MS4 discharges are jointly responsible for meeting the water quality-based effluent limitations and receiving water limitations assigned to MS4 discharges in this Order. "Joint responsibility" means that the Permittees that have commingled MS4 discharges are responsible for implementing programs in their respective jurisdictions, or within the MS4 for which they are an owner and/or operator, to meet the water quality-based effluent limitations and/or receiving water limitations assigned to such commingled MS4 discharges.

In these cases, federal regulations state that co-permittees need only comply with permit conditions relating to discharges from the MS4 for which they are owners or operators (40 CFR § 122.26(a)(3)(vi)). Individual co-permittees are only responsible for their contributions to the commingled MS4 discharge. This Order does not require a Permittee to individually ensure that a commingled MS4 discharge meets the applicable water quality-based effluent limitations included in this Order, unless such Permittee is shown to be solely responsible for an exceedance.

Additionally, this Order allows a Permittee to clarify and distinguish their individual contributions and demonstrate that its MS4 discharge did not cause or contribute to exceedances of applicable water quality-based effluent limitations and/or receiving

water limitations. If such a demonstration is made, though the Permittee's discharge may commingle with that of other Permittees, the Permittee would not be held jointly responsible for the exceedance of the water quality-based effluent limitation or receiving water limitation. Individual co-permittees who demonstrate compliance with the water quality-based effluent limitations will not be held responsible for violations by non-compliant co-permittees.

Given the interconnected nature of the Permittees' MS4s, however, the Regional Water Board expects Permittees to work cooperatively to control the contribution of pollutants from one portion of the MS4 to another portion of the system through inter-agency agreements or other formal arrangements.

L. Ocean Plan. In 1972, the State Water Resources Control Board (State Water Board) adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (hereinafter Ocean Plan). The State Water Board adopted the most recent amended Ocean Plan on September 15, 2009. The Office of Administration Law approved it on March 10, 2010. On October 8, 2010, USEPA approved the 2009 Ocean Plan. The Ocean Plan is applicable, in its entirety, to the ocean waters of the State. In order to protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Pursuant to California Water Code section 13263(a), the requirements of this Order implement the Ocean Plan. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized in the table below.

Table 7. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Uses
All Municipal Separate Storm Sewer Systems (MS4s) discharge points within Los Angeles County coastal watersheds with the exception of the City of Long Beach	Pacific Ocean	Industrial Water Supply (IND); Water Contact (REC-1) and Non-Contact Recreation (REC-2), including aesthetic enjoyment; Navigation (NAV); Commercial and Sport Fishing (COMM); Mariculture; Preservation and Enhancement of Designated Areas of Special Biological Significance (ASBS); Rare and Endangered Species (RARE); Marine Habitat (MAR); Fish Migration (MIGR); Fish Spawning (SPWN) and Shellfish Harvesting (SHELL)

M. Antidegradation Policy

40 CFR section 131.12 requires that state water quality standards include an antidegradation policy consistent with the federal antidegradation policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining the Quality of the Waters of the State"). Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is

justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

N. Anti-Backsliding Requirements. Section 402(o)(2) of the CWA and federal regulations at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous permit.

O. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2115.5) or the Federal Endangered Species Act (16 U.S.C.A., §§ 1531 to 1544). This Order requires compliance with requirements to protect the beneficial uses of waters of the United States. Permittees are responsible for meeting all requirements of the applicable Endangered Species Act.

P. Monitoring and Reporting. Section 308(a) of the federal Clean Water Act, and 40 CFR sections 122.41(h), (j)-(l), 122.41(i), and 122.48, require that all NPDES permits specify monitoring and reporting requirements. Federal regulations applicable to large and medium MS4s also specify additional monitoring and reporting requirements. (40 C.F.R. §§ 122.26(d)(2)(i)(F) & (d)(2)(iii)(D), 122.42(c).) California Water Code section 13383 authorizes the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program establishes monitoring, reporting, and recordkeeping requirements that implement the federal and State laws and/or regulations. This Monitoring and Reporting Program is provided in Attachment E.

Q. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in Attachment D. Dischargers must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR section 122.42 provided in Attachment D. The Regional Water Board has also included in Part VI of this Order various special provisions applicable to the Dischargers. A rationale for the various special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).

R. State Mandates

Article XIII B, Section 6(a) of the California Constitution provides that whenever "any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service." The requirements of this Order do not constitute state mandates that are subject to a

subvention of funds for several reasons as described in detail in the attached Fact Sheet (Attachment F).

S. California Water Code Section 13241. The California Supreme Court has ruled that although California Water Code section 13263 requires the State and Regional Water Boards (collectively, Water Boards) to consider the factors set forth in California Water Code section 13241 when issuing an NPDES permit, the Water Boards may not consider the factors to justify imposing pollutant restriction that are less stringent than the applicable federal regulations require. (***City of Burbank v. State Water Resources Control Bd.*** (2005) 35 Cal.4th 613, 618, 626-627). However, when the pollutant restrictions in an NPDES permit are more stringent than federal law requires, California Water Code section 13263 requires that the Water Boards consider the factors described in section 13241 as they apply to those specific restrictions. As noted in the preceding finding, the Regional Water Board finds that the requirements in this permit are not more stringent than the minimum federal requirements. Therefore, a 13241 analysis is not required for permit requirements that implement the effective prohibition on the discharge of non-storm water discharges into the MS4, or for controls to reduce the discharge of pollutants in storm water to the maximum extent practicable, or other provisions that the Regional Water Board has determined appropriate to control such pollutants, as those requirements are mandated by federal law. Notwithstanding the above, the Regional Water Board has developed an economic analysis of the permit's requirements, consistent with California Water Code section 13241. That analysis is provided in the Fact Sheet (Attachment F of this Order).

T. California Environmental Quality Act (CEQA). This action to adopt an NPDES Permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code, § 21100, et seq.) pursuant to California Water Code section 13389. (***County of Los Angeles v. Cal. Water Boards*** (2006) 143 Cal.App.4th 985.)

U. Notification of Interested Parties. In accordance with State and federal laws and regulations, the Regional Water Board has notified the Permittees and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharges authorized by this Order and has provided them with an opportunity to provide written and oral comments. Details of notification, as well as the meetings and workshops held on drafts of the permit, are provided in the Fact Sheet of this Order.

V. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all oral and written comments pertaining to the discharges authorized by this Order and the requirements contained herein. The Regional Water Board has prepared written responses to all timely comments, which are incorporated by reference as part of this Order.

W. This Order serves as an NPDES permit pursuant to CWA section 402 or amendments thereto, and becomes effective fifty (50) days after the date of its adoption, provided that the Regional Administrator, USEPA, Region IX, expresses no objections.

X. This Order supersedes Order No. 01-182 as amended, except for enforcement purposes.

Y. Review by the State Water Board. Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must ***receive*** the petition by 5:00 p.m., 30 days after the Regional Water Board action, except that if the thirtieth day following the action falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

THEREFORE, IT IS HEREBY ORDERED, that the Dischargers, in order to meet the provisions contained in Division 7 of the California Water Code (commencing with section 13000), and regulations, plans, and policies adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following requirements:

III. DISCHARGE PROHIBITIONS

A. Prohibitions – Non-Storm Water Discharges

1. Prohibition of Non-Storm Water Discharges. Each Permittee shall, for the portion of the MS4 for which it is an owner or operator, prohibit non-storm water discharges through the MS4 to receiving waters except where such discharges are either:

a. Authorized non-storm water discharges separately regulated by an individual or general NPDES permit;

b. Temporary non-storm water discharges authorized by USEPA[3] pursuant to sections 104(a) or 104(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that either: (i) will comply with water quality standards as applicable or relevant and appropriate requirements ("ARARs") under section 121(d)(2) of CERCLA; or (ii) are subject to either (a) a written waiver of ARARs by USEPA pursuant to section 121(d)(4) of CERCLA or (b) a written determination by USEPA that compliance with ARARs is not practicable considering the exigencies of the situation pursuant to 40 CFR. section 300.415(j);

c. Authorized non-storm water discharges from emergency fire fighting activities (i.e., flows necessary for the protection of life or property)[4];

d. Natural flows, including:

i. Natural springs;

[3] These typically include short-term, high volume discharges resulting from the development or redevelopment of groundwater extraction wells, or USEPA or State-required compliance testing of potable water treatment plants, as part of a USEPA authorized groundwater remediation action under CERCLA.

[4] Discharges from vehicle washing, building fire suppression system maintenance and testing (e.g., sprinkler line flushing), fire hydrant maintenance and testing, and other routine maintenance activities are not considered emergency fire fighting activities.

ii. Flows from riparian habitats and wetlands;

iii. Diverted stream flows, authorized by the State or Regional Water Board;

iv. Uncontaminated ground water infiltration[5];

v. Rising ground waters, where ground water seepage is not otherwise covered by a NPDES permit[6]; or

e. Conditionally exempt non-storm water discharges in accordance with Parts III.A.2 and III.A.3 below.

2. Conditional Exemptions from Non-Storm Water Discharge Prohibition. The following categories of non-storm water discharges are conditionally exempt from the non-storm water discharge prohibition, provided they meet all required conditions specified below, or as otherwise approved by the Regional Water Board Executive Officer, in all areas regulated by this Order with the exception of direct discharges to Areas of Special Biological Significance (ASBS) within Los Angeles County. Conditional exemptions from the prohibition on non-storm water discharges through the MS4 to an ASBS are identified in Part III.A.3 below.

a. Conditionally Exempt Essential Non-Storm Water Discharges: These consist of those discharges that fall within one of the categories below; meet all required best management practices (BMPs) as specified in i. and ii. below, including those enumerated in the referenced BMP manuals; are essential public services discharge activities; and are directly or indirectly required by other state or federal statute and/or regulation:

i. Discharges from essential ***non-emergency*** fire fighting activities[7] provided appropriate BMPs are implemented based on the CAL FIRE, Office of the State Fire Marshal's ***Water-Based Fire Protection Systems Discharge Best Management Practices Manual*** (September 2011) for water-based fire protection system discharges, and based on Riverside County's ***Best Management Practices Plan for Urban Runoff Management*** (May 1, 2004) or equivalent BMP manual for fire training activities and post-emergency fire fighting activities;

ii. Discharges from drinking water supplier distribution systems, where not otherwise regulated by an individual or general NPDES permit[8], provided

[5] Uncontaminated ground water infiltration is water other than waste water that enters the MS4 (including foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow. (See 40 CFR § 35.2005(20).)

[6] A NPDES permit for discharges associated with ground water dewatering is required within the Los Angeles Region.

[7] This includes fire fighting training activities, which simulate emergency responses, and routine maintenance and testing activities necessary for the protection of life and property, including building fire suppression system maintenance and testing (e.g. sprinkler line flushing) and fire hydrant testing and maintenance. Discharges from vehicle washing are not considered essential and as such are not conditionally exempt from the non-storm water discharge prohibition.

[8] Drinking water supplier distribution system releases means sources of flows from drinking water storage, supply and distribution systems (including flows from system failures), pressure releases, system maintenance, distribution line testing, and flushing and dewatering of pipes, reservoirs, and vaults, and minor non-invasive well maintenance activities not involving chemical addition(s) where not otherwise regulated by NPDES Permit No. CAG674001, NPDES Permit No. CAG994005, or another separate NPDES permit.

appropriate BMPs are implemented based on the American Water Works Association (California-Nevada Section) ***Guidelines for the Development of Your Best Management Practices (BMP) Manual for Drinking Water System Releases*** (2005) or equivalent industry standard BMP manual. Additionally, each Permittee shall work with drinking water suppliers that may discharge to the Permittee's MS4 to ensure for all discharges greater than 100,000 gallons: (1) notification at least 72 hours prior to a planned discharge and as soon as possible after an unplanned discharge; (2) monitoring of any pollutants of concern[9] in the drinking water supplier distribution system release; and (3) record keeping by the drinking water supplier. Permittees shall require that the following information is maintained by the drinking water supplier(s) for all discharges to the MS4 (planned and unplanned) greater than 100,000 gallons: name of discharger, date and time of notification (for planned discharges), method of notification, location of discharge, discharge pathway, receiving water, date of discharge, time of the beginning and end of the discharge, duration of the discharge, flow rate or velocity, total number of gallons discharged, type of dechlorination equipment used, type of dechlorination chemicals used, concentration of residual chlorine, type(s) of sediment controls used, pH of discharge, type(s) of volumetric and velocity controls used, and field and laboratory monitoring data. Records shall be retained for five years and made available upon request by the Permittee or Regional Water Board.

b. Those discharges that fall within one of the categories below, provided that the discharge itself is not a source of pollutants and meets all required conditions specified in Table 8 or as otherwise specified or approved by the Regional Water Board Executive Officer:

i. Dewatering of lakes[10];

ii. Landscape irrigation;

iii. Dechlorinated/debrominated swimming pool/spa discharges[11], where not otherwise regulated by a separate NPDES permit;

iv. Dewatering of decorative fountains[12];

v. Non-commercial car washing by residents or by non-profit organizations;

[9] Pollutants of concern from drinking water supplier distribution system releases may include trash and debris, including organic matter, total suspended solids (TSS), residual chlorine, pH, and any pollutant for which there is a water quality-based effluent limitation (WQBEL) in Part VI.E applicable to discharges from the MS4 to the receiving water. Determination of the pollutants of concern for a particular discharge shall be based on an evaluation of the potential for the constituent(s) to be present in the discharge at levels that may cause or contribute to exceedances of applicable WQBELs or receiving water limitations.

[10] Dewatering of lakes does not include dewatering of drinking water reservoirs. Dewatering of drinking water reservoirs is addressed in Part III.A.2.a.ii.

[11] Conditionally exempt dechlorinated/debrominated swimming pool/spa discharges do not include swimming pool/spa filter backwash or swimming pool/spa water containing bacteria, detergents, wastes, or algaecides, or any other chemicals including salts from pools commonly referred to as "salt water pools" in excess of applicable water quality objectives.

[12] Conditionally exempt discharges from dewatering of decorative fountains do not include fountain water containing bacteria, detergents, wastes, or algaecides, or any other chemicals in excess of applicable water quality objectives.

vi. Street/sidewalk wash water[13].

3. Conditional Exemptions from Non-Storm Water Discharge Prohibition within an ASBS. The following non-storm water discharges from the MS4 directly to an ASBS are conditionally exempt pursuant to the California Ocean Plan as specified below, provided that:

a. The discharges are essential for emergency response purposes, structural stability, slope stability or occur naturally, including the following discharges:

i. Discharges associated with emergency fire fighting activities (i.e., flows necessary for the protection of life or property)[14];

ii. Foundation and footing drains;

iii. Water from crawl space or basement pumps;

iv. Hillside dewatering;

v. Naturally occurring ground water seepage via a MS4; and

vi. Non-anthropogenic flows from a naturally occurring stream via a culvert or MS4, as long as there are no contributions of anthropogenic runoff.

b. The discharges fall within one of the conditionally exempt essential non-storm water discharge categories in Part III.A.2.a. above.

c. Conditionally exempt non-storm water discharges shall not cause or contribute[15] to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations in this Order or the water quality objectives in Chapter II of the Ocean Plan, or alter natural ocean water quality in an ASBS.

4. Permittee Requirements. Each Permittee shall:

a. Develop and implement procedures to ensure that a discharger, if not a named Permittee in this Order, fulfills the following for non-storm water discharges to the Permittee's MS4:

i. Notifies the Permittee of the planned discharge in advance, consistent with requirements in Table 8 or recommendations pursuant to the applicable BMP manual;

ii. Obtains any local permits required by the MS4 owner(s) and/or operator(s);

[13] Conditionally exempt non-storm water discharges of street/sidewalk wash water only include those discharges resulting from use of high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area in accordance with Regional Water Board Resolution No. 98-08. Conditionally exempt non-storm water discharges of street/sidewalk wash water do not include hosing of any sidewalk or street with a garden hose with a pressure nozzle.
[14] See note 4.
[15] Based on the water quality characteristics of the conditionally exempt non-storm water discharge itself.

iii. Provides documentation that it has obtained any other necessary permits or water quality certifications[16] for the discharge;

iv. Conducts monitoring of the discharge, if required by the Permittee;

v. Implements BMPs and/or control measures as specified in Table 8 or in the applicable BMP manual(s) as a condition of the approval to discharge into the Permittee's MS4; and

vi. Maintains records of its discharge to the MS4, consistent with requirements in Table 8 or recommendations pursuant to the applicable BMP manual. For lake dewatering, Permittees shall require that the following information is maintained by the lake owner / operator: name of discharger, date and time of notification, method of notification, location of discharge, discharge pathway, receiving water, date of discharge, time of the beginning and end of the discharge, duration of the discharge, flow rate or velocity, total number of gallons discharged, type(s) of sediment controls used, pH of discharge, type(s) of volumetric and velocity controls used, and field and laboratory monitoring data. Records shall be made available upon request by the Permittee or Regional Water Board.

b. Develop and implement procedures that minimize the discharge of landscape irrigation water into the MS4 by promoting conservation programs.

i. Permittees shall coordinate with the local water purveyor(s), where applicable, to promote landscape water use efficiency requirements for existing landscaping, use of drought tolerant, native vegetation, and the use of less toxic options for pest control and landscape management.

ii. Permittees shall develop and implement a coordinated outreach and education program to minimize the discharge of irrigation water and pollutants associated with irrigation water consistent with Part VI.D.4.c of this Order (Public Information and Participation Program).

c. Evaluate monitoring data collected pursuant to the Monitoring and Reporting Program (MRP) of this Order (Attachment E), and any other associated data or information, and determine whether any of the authorized or conditionally exempt non-storm water discharges identified in Parts III.A.1, III.A.2, and III.A.3 above are a source of pollutants that may be causing or contributing to an exceedance of applicable receiving water limitations in Part V and/or water quality-based effluent limitations in Part VI.E. To evaluate monitoring data, the Permittee shall either use applicable interim or final water quality-based effluent limitations for the pollutant or, if there are no applicable interim or final water quality-based effluent limitations for the pollutant, use applicable action levels provided in Attachment G. Based on non-storm water outfall-based monitoring as implemented through the MRP, if monitoring data show

[16] Pursuant to the Federal Clean Water Act § 401.

exceedances of applicable water quality-based effluent limitations or action levels, the Permittee shall take further action to determine whether the discharge is causing or contributing to exceedances of receiving water limitations in Part V.

d. If the Permittee determines that any of the conditionally exempt non-storm water discharges identified in Part III.A.2.b above is a source of pollutants that causes or contributes to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations, the Permittee(s) shall report its findings to the Regional Water Board in its annual report. Based on this determination, the Permittee(s) shall also either:

i. Effectively prohibit[17] the non-storm water discharge to the MS4; or

ii. Impose conditions in addition to those in Table 8, subject to approval by the Regional Water Board Executive Officer, on the non-storm water discharge such that it will not be a source of pollutants; or

iii. Require diversion of the non-storm water discharge to the sanitary sewer; or

iv. Require treatment of the non-storm water discharge prior to discharge to the receiving water.

e. If the Permittee determines that any of the authorized or conditionally exempt essential non-storm water discharges identified in Parts III.A.1.a through III.A.1.c, III.A.2.a, or III.A.3 above is a source of pollutants that causes or contributes to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations, the Permittee shall notify the Regional Water Board within 30 days if the non-storm water discharge is an authorized discharge with coverage under a separate NPDES permit or authorized by USEPA under CERCLA in the manner provided in Part III.A.1.b above, or a conditionally exempt essential non-storm water discharge or emergency non-storm water discharge.

f. If the Permittee prohibits the discharge from the MS4, as per Part III.A.4.d.i, then the Permittee shall implement procedures developed under Part VI.D.9 (Illicit Connections and Illicit Discharges Elimination Program) in order to eliminate the discharge to the MS4.

5. If a Permittee demonstrates that the water quality characteristics of a specific authorized or conditionally exempt essential non-storm water discharge resulted in an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations during a specific sampling event, the Permittee shall not be found in violation of applicable receiving water limitations and/or water quality-based effluent limitations for that specific sampling event. Such

[17] To "effectively prohibit" means to not allow the non-storm water discharge through the MS4 unless the discharger obtains coverage under a separate NPDES permit prior to discharge to the MS4.

demonstration must be based on source specific water quality monitoring data from the authorized or conditionally exempt essential non-storm water discharge or other relevant information documenting the characteristics of the specific non-storm water discharge as identified in Table 8.

6. Notwithstanding the above, the Regional Water Board Executive Officer, based on an evaluation of monitoring data and other relevant information for specific categories of non-storm water discharges, may modify a category or remove categories of conditionally exempt non-storm water discharges from Parts III.A.2 and III.A.3 above if the Executive Officer determines that a discharge category is a source of pollutants that causes or contributes to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations, or may require that a discharger obtain coverage under a separate individual or general State or Regional Water Board permit for a non-storm water discharge.

Table 8. Required Conditions for Conditionally Exempt Non-Storm Water Discharges

Discharge Category	General Conditions Under Which Discharge Through the MS4 is Allowed	Conditions/BMPs that are Required to be Implemented Prior to Discharge Through the MS4
All Discharge Categories	See discharge specific conditions below.	Ensure conditionally exempt non-storm water discharges avoid potential sources of pollutants in the flow path to prevent introduction of pollutants to the MS4 and receiving water. Whenever there is a discharge of 100,000 gallons or more into the MS4, Permittees shall require advance notification by the discharger to the potentially affected MS4 Permittees, including at a minimum the LACFCD, if applicable, and the Permittee with jurisdiction over the land area from which the discharge originates.
Dewatering of lakes	Discharge allowed only if all necessary permits/water quality certifications for dredge and fill activities, including water diversions, are obtained prior to discharge.	Ensure procedures for advanced notification by the lake owner / operator to the Permittee(s) no less than 72 hours prior to the planned discharge. Immediately prior to discharge, visible trash on the shoreline or on the surface of the lake shall be removed and disposed of in a legal manner. Immediately prior to discharge, the discharge pathway and the MS4 inlet to which the discharge is directed, shall be inspected and cleaned out. Discharges shall be volumetrically and velocity controlled to minimize resuspension of sediments. Measures shall be taken to stabilize lake bottom sediments. Ensure procedures for water quality monitoring for pollutants of concern[18] in the lake. Ensure record-keeping of lake dewatering by the lake owner / operator.

[18] Pollutants of concern include, at a minimum, trash and debris, including organic matter, TSS, and any pollutant for which there is a water quality-based effluent limitation in Part VI.E for the lake and/or receiving water.

Landscape irrigation using potable water	Discharge allowed if runoff due to potable landscape irrigation is minimized through the implementation of an ordinance specifying water efficient landscaping standards, as well as an outreach and education program focusing on water conservation and landscape water use efficiency.	Implement BMPs to minimize runoff and prevent introduction of pollutants to the MS4 and receiving water. Implement water conservation programs to minimize discharge by using less water.
Landscape irrigation using reclaimed or recycled water	Discharge of reclaimed or recycled water runoff from landscape irrigation is allowed if the discharge is in compliance with the producer and distributor operations and management (O&M) plan, and all relevant portions thereof, including the Irrigation Management Plan.	Discharges must comply with applicable O&M Plans, and all relevant portions thereof, including the Irrigation Management Plan.

Dechlorinated/ debrominated swimming pool/spa discharges	Discharges allowed after implementation of specified BMPs. Pool or spa water containing copper-based algaecides is not allowed to be discharged to the MS4. Discharges of cleaning waste water and filter backwash allowed only if authorized by a separate NPDES permit.	Implement BMPs and ensure discharge avoids potential sources of pollutants in the flow path to prevent introduction of pollutants prior to discharge to the MS4 and receiving water. Swimming pool water must be dechlorinated or debrominated using holding time, aeration, and/or sodium thiosulfate. Chlorine residual in the discharge shall not exceed 0.1 mg/L. Swimming pool water shall not contain any detergents, wastes, or algaecides, or any other chemicals including salts from pools commonly referred to as "salt water pools" in excess of applicable water quality objectives.[19] Swimming pool discharges are to be pH adjusted, if necessary, and be within the range of 6.5 and 8.5 standard units. Swimming pool discharges shall be volumetrically and velocity controlled to promote evaporation and/or infiltration. Ensure procedures for advanced notification by the pool owner to the Permittee(s) at least 72 hours prior to planned discharge for discharges of 100,000 gallons or more. For discharges of 100,000 gallons or more, immediately prior to discharge, the discharge pathway and the MS4 inlet to which the discharge is directed, shall be inspected and cleaned out.
Dewatering of decorative fountains	Discharges allowed after implementation of specified BMPs. Fountain water containing copper-based algaecides may not be discharged to the MS4. Fountain water containing dyes my not be discharged to the MS4.	Implement BMPs and ensure discharge avoids potential sources of pollutants in the flow path to prevent introduction of pollutants prior to discharge to the MS4 and receiving water. Fountain water must be dechlorinated or debrominated using holding time, aeration, and/or sodium thiosulfate. Chlorine residual in the discharge shall not exceed 0.1 mg/L. Fountain discharges are to be pH adjusted, if necessary, and be within the range of 6.5 and 8.5 standard units. Fountain discharges shall be volumetrically and velocity controlled to promote evaporation and/or infiltration. Ensure procedures for advanced notification by the fountain owner to the Permittee(s) at least 72 hours prior to planned discharge for discharges of 100,000 gallons or more. For discharges of 100,000 gallons or more, immediately prior to discharge, the discharge pathway and the MS4 inlet to which the discharge is directed, shall be inspected and cleaned out.
Non-commercial car washing by residents or by non-	Discharges allowed after implementation of specified BMPs.	Implement BMPs and ensure discharge avoids potential sources of pollutants in the flow path to prevent introduction of pollutants prior to discharge to the MS4 and receiving water. Minimize the amount of water used by employing water conservation practices such as turning off

[19] Applicable mineral water quality objectives for surface waters are contained in Chapter 3 of the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.

profit organizations		nozzles or kinking the hose when not spraying a car, and using a low volume pressure washer. Encourage use of biodegradable, phosphate free detergents and non-toxic cleaning products. Where possible, wash cars on a permeable surface where wash water can percolate into the ground (e.g. gravel or grassy areas). Empty buckets of soapy or rinse water into the sanitary sewer system (e.g., sinks or toilets).
Street/sidewalk wash water	Discharges allowed after implementation of specified BMPs.	Sweeping should be used as an alternate BMP whenever possible and sweepings should be disposed of in the trash. BMPs shall be in accordance with Regional Water Board Resolution No. 98-08 that requires: 1) removal of trash, debris, and free standing oil/grease spills/leaks (use absorbent material if necessary) from the area before washing and 2) use of high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area. In areas of unsanitary conditions (e.g., areas where the congregation of transient populations can reasonably be expected to result in a significant threat to water quality), whenever practicable, Permittees shall collect and divert street and alley wash water from the Permittee's street and sidewalk cleaning public agency activities to the sanitary sewer.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. **Technology Based Effluent Limitations**: Each Permittee shall reduce pollutants in storm water discharges from the MS4 to the maximum extent practicable (MEP).

2. **Water Quality-Based Effluent Limitations (WQBELs).** This Order establishes WQBELs consistent with the assumptions and requirements of all available TMDL waste load allocations assigned to discharges from the Permittees' MS4s.

   a. Each Permittee shall comply with applicable WQBELs as set forth in Part VI.E of this Order, pursuant to applicable compliance schedules.

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Receiving Water Limitations

1. Discharges from the MS4 that cause or contribute to the violation of receiving water limitations are prohibited.

2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible[20], shall not cause or contribute to a condition of nuisance.

3. The Permittees shall comply with Parts V.A.1 and V.A.2 through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the storm water management program and its components and other requirements of this Order including any modifications. The storm water management program and its components shall be designed to achieve compliance with receiving water limitations. If exceedances of receiving water limitations persist, notwithstanding implementation of the storm water management program and its components and other requirements of this Order, the Permittee shall assure compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:

   a. Upon a determination by either the Permittee or the Regional Water Board that discharges from the MS4 are causing or contributing to an exceedance of an applicable Receiving Water Limitation, the Permittee shall promptly notify and thereafter submit an Integrated Monitoring Compliance Report (as described in the Program Reporting Requirements, Part XVIII.A.5 of the Monitoring and Reporting Program) to the Regional Water Board for approval. The Integrated Monitoring Compliance shall describe the BMPs that are currently being

[20] Pursuant to 40 CFR § 122.26(a)(3)(vi), a Permittee is only responsible for discharges of storm water and non-storm water from the MS4 for which it is an owner or operator.

implemented by the Permittee and additional BMPs, including modifications to current BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedances of receiving water limitations. The Integrated Monitoring Compliance Report shall include an implementation schedule. This Integrated Monitoring Compliance Report shall be incorporated in the annual Storm Water Report unless the Regional Water Board directs an earlier submittal. The Regional Water Board may require modifications to the Integrated Monitoring Compliance Report.

b. The Permittee shall submit any modifications to the Integrated Monitoring Compliance Report required by the Regional Water Board within 30 days of notification.

c. Within 30 days following the Regional Water Board Executive Officer's approval of the Integrated Monitoring Compliance Report, the Permittee shall revise the storm water management program and its components and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, an implementation schedule, and any additional monitoring required.

d. The Permittee shall implement the revised storm water management program and its components and monitoring program according to the approved implementation schedule.

4. So long as the Permittee has complied with the procedures set forth in Part V.A.3. above and is implementing the revised storm water management program and its components, the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Regional Water Board to modify current BMPs or develop additional BMPs.

B. Ground Water Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions. Each Permittee shall comply with all Standard Provisions included in Attachment D of this Order, in accordance with 40 CFR sections 122.41 and 122.42.

2. Legal Authority

a. Each Permittee must establish and maintain adequate legal authority, within its respective jurisdiction, to control pollutant discharges into and from its MS4 through ordinance, statute, permit, contract or similar means. This legal authority must, at a minimum, authorize or enable the Permittee to:

i. Control the contribution of pollutants to its MS4 from storm water discharges associated with industrial and construction activity and control the quality of storm water discharged from industrial and construction sites. This requirement applies both to industrial and construction sites with coverage under an NPDES permit, as well as to those sites that do not have coverage under an NPDES permit.

ii. Prohibit all non-storm water discharges through the MS4 to receiving waters not otherwise authorized or conditionally exempt pursuant to Part III.A;

iii. Prohibit and eliminate illicit discharges and illicit connections to the MS4;

iv. Control the discharge of spills, dumping, or disposal of materials other than storm water to its MS4;

v. Require compliance with conditions in Permittee ordinances, permits, contracts or orders (i.e., hold dischargers to its MS4 accountable for their contributions of pollutants and flows);

vi. Utilize enforcement mechanisms to require compliance with applicable ordinances, permits, contracts, or orders;

vii. Control the contribution of pollutants from one portion of the shared MS4 to another portion of the MS4 through interagency agreements among Co-permittees;

viii. Control of the contribution of pollutants from one portion of the shared MS4 to another portion of the MS4 through interagency agreements with other owners of the MS4 such as the State of California Department of Transportation;

ix. Carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with applicable municipal ordinances, permits, contracts and orders, and with the provisions of this Order, including the prohibition of non-storm water discharges into the MS4 and receiving waters. This means the Permittee must have authority to enter, monitor, inspect, take measurements, review and copy records, and require regular reports from entities discharging into its MS4;

x. Require the use of control measures to prevent or reduce the discharge of pollutants to achieve water quality standards/receiving water limitations;

xi. Require that structural BMPs are properly operated and maintained; and

xii. Require documentation on the operation and maintenance of structural BMPs and their effectiveness in reducing the discharge of pollutants to the MS4.

b. Each Permittee must submit a statement certified by its chief legal counsel that the Permittee has the legal authority within its jurisdiction to implement and enforce each of the requirements contained in 40 CFR § 122.26(d)(2)(i)(A-F) and this Order. Each Permittee shall submit this certification annually as part of its Annual Report beginning with the first Annual Report required under this Order. These statements must include:

i. Citation of applicable municipal ordinances or other appropriate legal authorities and their relationship to the requirements of 40 CFR § 122.26(d)(2)(i)(A)-(F) and of this Order; and

ii. Identification of the local administrative and legal procedures available to mandate compliance with applicable municipal ordinances identified in subsection (i) above and therefore with the conditions of this Order, and a statement as to whether enforcement actions can be completed administratively or whether they must be commenced and completed in the judicial system.

3. Fiscal Resources

a. Each Permittee shall conduct a fiscal analysis of the annual capital and operation and maintenance expenditures necessary to implement the requirements of this Order.

b. Each Permittee shall also enumerate and describe in its Annual Report the source(s) of funds used in the past year, and proposed for the coming year, to meet necessary expenditures on the Permittee's storm water management program.

4. Responsibilities of the Permittees

a. Each Permittee is required to comply with the requirements of this Order applicable to discharges within its boundaries. Permittees are not responsible for the implementation of the provisions applicable to other Permittees. Each Permittee shall:

i. Comply with the requirements of this Order and any modifications thereto.

ii. Coordinate among its internal departments and agencies, as necessary, to facilitate the implementation of the requirements of this Order applicable to such Permittees in an efficient and cost-effective manner.

iii. Participate in intra-agency coordination (e.g. Planning Department, Fire Department, Building and Safety, Code Enforcement, Public Health, Parks and Recreation, and others) and inter-agency coordination (e.g. co-Permittees, other NPDES permittees) necessary to successfully implement the provisions of this Order.

5. Public Review

a. All documents submitted to the Regional Water Board in compliance with the terms and conditions of this Order shall be made available to members of the public pursuant to the Freedom of Information Act (5 U.S.C. § 552 (as amended)) and the Public Records Act (Cal. Government Code § 6250 et seq.).

b. All documents submitted to the Regional Water Board Executive Officer for approval shall be made available to the public for a 30-day period to allow for public comment.

6. Regional Water Board Review

Any formal determination or approval made by the Regional Water Board Executive Officer pursuant to the provisions of this Order may be reviewed by the Regional Water Board. A Permittee(s) or a member of the public may request such review upon petition within 30 days of the effective date of the notification of such decision to the Permittee(s) and interested parties on file at the Regional Water Board.

7. Reopener and Modification

a. This Order may be modified, revoked, reissued, or terminated in accordance with the provisions of 40 CFR sections 122.44, 122.62, 122.63, 122.64, 124.5, 125.62, and 125.64. Causes for taking such actions include, but are not limited to:

i. Endangerment to human health or the environment resulting from the permitted activity, including information that the discharge(s) regulated by this Order may have the potential to cause or contribute to adverse impacts on water quality and/or beneficial uses;

ii. Acquisition of newly-obtained information that would have justified the application of different conditions if known at the time of Order adoption;

iii. To address changed conditions identified in required reports or other sources deemed significant by the Regional Water Board;

iv. To incorporate provisions as a result of future amendments to the Basin Plan, such as a new or revised water quality objective or the adoption or reconsideration of a TMDL, including the program of implementation. Within 18 months of the effective date of a revised TMDL or as soon as practicable thereafter, where the revisions warrant a change to the provisions of this Order, the Regional Water Board may modify this Order consistent with the assumptions and requirements of the revised WLA(s), including the program of implementation;

v. To incorporate provisions as a result of new or amended statewide water quality control plans or policies adopted by the State Water Board, or in consideration of any State Water Board action regarding the precedential language of State Water Board Order WQ 99-05;

vi. To incorporate provisions as a result of the promulgation of new or amended federal or state laws or regulations, USEPA guidance concerning regulated activities, or judicial decisions that becomes effective after adoption of this Order.

vii. To incorporate effluent limitations for toxic constituents determined to be present in significant amount in the discharge through a more comprehensive monitoring program included as part of this Order and based on the results of the reasonable potential analysis;

viii. In accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include requirements for the implementation of the watershed management approach or to include new Minimum Levels (MLs); and/or

ix. To include provisions or modifications to WQBELs in Part VI.E and Attachments L-R in this Order prior to the final compliance deadlines, if practicable, that would allow an action-based, BMP compliance demonstration approach with regard to final WQBELs for storm water discharges. Such modifications shall be based on the Regional Water Board's evaluation of whether Watershed Management Programs in Part VI.C. have resulted in attainment of interim WQBELs for storm water and review of relevant research, including but not limited to data and information provided by Permittees and other stakeholders, on storm water quality and the efficacy and reliability of storm water control technologies. Provisions or modifications to WQBELs in Part VI.E. shall only be included in this Order where there is evidence that storm water control technologies can reliably achieve final WQBELs.

b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

i. Violation of any term or condition contained in this Order;

ii. Obtaining this Order by misrepresentation, or failure to disclose all relevant facts; or

iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The filing of a request by a Permittee for a modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

d. This Order may be modified to make corrections or allowances for changes in the permitted activity, following the procedures at 40 CFR section 122.63, if processed as a minor modification. Minor modifications may only:

i. Correct typographical errors; or

ii. Require more frequent monitoring or reporting by a Permittee.

8. Any discharge of waste to any point(s) other than specifically described in this Order is prohibited, and constitutes a violation of this Order.

9. A copy of this Order shall be maintained by each Permittee so as to be available during normal business hours to Permittee employees responsible for implementation of the provisions of this Order and members of the public.

10. The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act to any waste stream that may ultimately be released to waters of the United States, is prohibited, unless specifically authorized elsewhere in this Order or another NPDES permit. This requirement is not applicable to products used for lawn and agricultural purposes.

11. Oil or oily material, chemicals, refuse, or other pollutionable materials shall not be stored or deposited in areas where they may be picked up by rainfall and carried off of the property and/or discharged to surface waters. Any such spill of such materials shall be contained and removed immediately.

12. If there is any storage of hazardous or toxic materials or hydrocarbons at a facility owned and/or operated by a Permittee and if the facility is not manned at all times, a 24-hour emergency response telephone number shall be prominently posted where it can easily be read from the outside.

13. Enforcement

a. Violation of any of the provisions of this Order may subject the violator to any of the penalties described herein or in Attachment D of this Order, or any combination thereof, at the discretion of the prosecuting authority; except that only one kind of penalty may be applied for each kind of violation.

b. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges through the MS4 to receiving waters, may subject a Permittee to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject a Permittee to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

c. The California Water Code provides that any person who violates a waste discharge requirement or a provision of the California Water Code is subject to civil penalties of up to $5,000 per day, $10,000 per day, or $25,000 per day of

violation, or when the violation involves the discharge of pollutants, is subject to civil penalties of up to $10 per gallon per day or $25 per gallon per day of violation; or some combination thereof, depending on the violation, or upon the combination of violations.

d. California Water Code section 13385(h)(1) requires the Regional Water Board to assess a mandatory minimum penalty of three-thousand dollars ($3,000) for each serious violation. Pursuant to California Water Code section 13385(h)(2), a "serious violation" is defined as any waste discharge that violates the effluent limitations contained in the applicable waste discharge requirements for a Group II pollutant by 20 percent or more, or for a Group I pollutant by 40 percent or more. Appendix A of 40 CFR section 123.45 specifies the Group I and II pollutants. Pursuant to California Water Code section 13385.1(a)(1), a "serious violation" is also defined as "a failure to file a discharge monitoring report required pursuant to Section 13383 for each complete period of 30 days following the deadline for submitting the report, if the report is designed to ensure compliance with limitations contained in waste discharge requirements that contain effluent limitations."

e. California Water Code section 13385(i) requires the Regional Water Board to assess a mandatory minimum penalty of three-thousand dollars ($3,000) for each violation whenever a person violates a waste discharge requirement effluent limitation in any period of six consecutive months, except that the requirement to assess the mandatory minimum penalty shall not be applicable to the first three violations within that time period.

f. Pursuant to California Water Code section 13385.1(d), for the purposes of section 13385.1 and subdivisions (h), (i), and (j) of section 13385, "effluent limitation" means a numeric restriction or a numerically expressed narrative restriction, on the quantity, discharge rate, concentration, or toxicity units of a pollutant or pollutants that may be discharged from an authorized location. An effluent limitation may be final or interim, and may be expressed as a prohibition. An effluent limitation, for these purposes, does not include a receiving water limitation, a compliance schedule, or a best management practice.

g. Unlike subdivision (c) of California Water Code section 13385, where violations of effluent limitations may be assessed administrative civil liability on a per day basis, the mandatory minimum penalties provisions identified above require the Regional Water Board to assess mandatory minimum penalties for "each violation" of an effluent limitation. Some water quality-based effluent limitations in Attachments L through R of this Order (e.g., trash, as described immediately below) are expressed as annual effluent limitations. Therefore, for such limitations, there can be no more than one violation of each interim or final effluent limitation per year.

h. Trash TMDLs.

i. Consistent with the 2009 amendments to Order No. 01-182 to incorporate the Los Angeles River Trash TMDL, the water quality-based effluent limitations in Attachments L through R of this Order for trash are expressed as annual effluent limitations. Therefore, for such limitations, there can be no more than one violation of each interim or final effluent limitation per year. Trash is considered a Group I pollutant, as specified in Appendix A to 40 CFR section 123.45. Therefore, each annual violation of a trash effluent limitation in Attachments L through R of this Order by forty percent or more would be considered a "serious violation" under California Water Code section 13385(h). With respect to the final effluent limitation of zero trash, any detectable discharge of trash necessarily is a serious violation, in accordance with the State Water Board's Enforcement Policy. Violations of the effluent limitations in Attachments L through R of this Order would not constitute "chronic" violations that would give rise to mandatory liability under California Water Code section 13385(i) because four or more violations of the effluent limitations subject to a mandatory penalty cannot occur in a period of six consecutive months.

ii. For the purposes of enforcement under California Water Code section 13385, subdivisions (a), (b), and (c), not every storm event may result in trash discharges. In trash TMDLs adopted by the Regional Water Board, the Regional Water Board states that improperly deposited trash is mobilized during storm events of greater than 0.25 inches of precipitation. Therefore, violations of the effluent limitations are limited to the days of a storm event of greater than 0.25 inches. Once a Permittee has violated the annual effluent limitation, any subsequent discharges of trash during any day of a storm event of greater than 0.25 inches during the same storm year constitutes an additional "day in which the violation [of the effluent limitation] occurs".

14. This Order does not exempt any Permittee from compliance with any other laws, regulations, or ordinances that may be applicable.

15. The provisions of this Order are severable. If any provisions of this Order or the application of any provision of this Order to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Order shall not be affected.

B. Monitoring and Reporting Program (MRP) Requirements

Dischargers shall comply with the MRP and future revisions thereto, in Attachment E of this Order or may, in coordination with an approved Watershed Management Program per Part VI.C, implement a customized monitoring program that achieves the five Primary Objectives set forth in Part II.A. of Attachment E and includes the elements set forth in Part II.E. of Attachment E.

C. Watershed Management Programs

1. General

a. The purpose of this Part VI.C is to allow Permittees the flexibility to develop Watershed Management Programs to implement the requirements of this Order on a watershed scale through customized strategies, control measures, and BMPs.

b. Participation in a Watershed Management Program is voluntary and allows a Permittee to address the highest watershed priorities, including complying with the requirements of Part V.A. (Receiving Water Limitations), Part VI.E (Total Maximum Daily Load Provisions) and Attachments L through R, by customizing the control measures in Parts III.A.4 (Prohibitions – Non-Storm Water Discharges) and VI.D (Minimum Control Measures).

c. Customized strategies, control measures, and BMPs shall be implemented on a watershed basis, where applicable, through each Permittee's storm water management program and/or collectively by all participating Permittees through a Watershed Management Program.

d. The Watershed Management Programs shall ensure that discharges from the Permittee's MS4: (i) achieve applicable water quality-based effluent limitations in Part VI.E and Attachments L through R pursuant to the corresponding compliance schedules, (ii) do not cause or contribute to exceedances of receiving water limitations in Parts V.A and VI.E and Attachments L through R, and (iii) do not include non-storm water discharges that are effectively prohibited pursuant to Part III.A. The programs shall also ensure that controls are implemented to reduce the discharge of pollutants to the maximum extent practicable (MEP) pursuant to Part IV.A.1.

e. Watershed Management Programs shall be developed either collaboratively or individually using the Regional Water Board's Watershed Management Areas (WMAs). Where appropriate, WMAs may be separated into subwatersheds to focus water quality prioritization and implementation efforts by receiving water.

f. Each Watershed Management Program shall be consistent with Part VI.C.5-C.8 and shall:

i. Prioritize water quality issues resulting from storm water and non-storm water discharges from the MS4 to receiving waters within each WMA,

ii. Identify and implement strategies, control measures, and BMPs to achieve the outcomes specified in Part VI.C.1.d,

iii. Execute an integrated monitoring program and assessment program pursuant to Attachment E – MRP, Part IV to determine progress towards achieving applicable limitations and/or action levels in Attachment G, and

iv. Modify strategies, control measures, and BMPs as necessary based on analysis of monitoring data collected pursuant to the MRP to ensure that applicable water quality-based effluent limitations and receiving water limitations and other milestones set forth in the Watershed Management Program are achieved in the required timeframes.

v. Provide appropriate opportunity for meaningful stakeholder input, including but not limited to, a permit-wide watershed management program technical advisory committee (TAC) that will advise and participate in the development of the Watershed Management Programs and enhanced Watershed Management Programs from month 6 through the date of program approval. The composition of the TAC may include at least one Permittee representative from each Watershed Management Area for which a Watershed Management Program will be developed, and must include a minimum of one public representative from a non-governmental organization with public membership, and staff from the Regional Water Board and USEPA Region IX.

g. Permittees may elect to develop an enhanced Watershed Management Program (EWMP). An EWMP is one that comprehensively evaluates opportunities, within the participating Permittees' collective jurisdictional area in a Watershed Management Area, for collaboration among Permittees and other partners on multi-benefit regional projects that, wherever feasible, retain (i) all non-storm water runoff and (ii) all storm water runoff from the 85th percentile, 24-hour storm event for the drainage areas tributary to the projects, while also achieving other benefits including flood control and water supply, among others. In drainage areas within the EWMP area where retention of the 85th percentile, 24-hour storm event is not feasible, the EWMP shall include a Reasonable Assurance Analysis to demonstrate that applicable water quality based effluent limitations and receiving water limitations shall be achieved through implementation of other watershed control measures. An EWMP shall:

i. Be consistent with the provisions in Part VI.C.1.a.-f and VI.C.5-C.8;

ii. Incorporate applicable State agency input on priority setting and other key implementation issues;

iii. Provide for meeting water quality standards and other CWA obligations by utilizing provisions in the CWA and its implementing regulations, policies and guidance;

iv. Include multi-benefit regional projects to ensure that MS4 discharges achieve compliance with all final WQBELs set forth in Part VI.E. and do not cause or contribute to exceedances of receiving water limitations in Part V.A. by retaining through infiltration or capture and reuse the storm water volume from the 85th percentile, 24-hour storm for the drainage areas tributary to the multi-benefit regional projects.;

v. In drainage areas where retention of the storm water volume from the 85th percentile, 24-hour event is not technically feasible, include other watershed control measures to ensure that MS4 discharges achieve compliance with all interim and final WQBELs set forth in Part VI.E. with compliance deadlines occurring after approval of a EWMP and to ensure that MS4 discharges do not cause or contribute to exceedances of receiving water limitations in Part V.A.;

vi. Maximize the effectiveness of funds through analysis of alternatives and the selection and sequencing of actions needed to address human health and water quality related challenges and non-compliance;

vii. Incorporate effective innovative technologies, approaches and practices, including green infrastructure;

viii. Ensure that existing requirements to comply with technology-based effluent limitations and core requirements (e.g., including elimination of non-storm water discharges of pollutants through the MS4, and controls to reduce the discharge of pollutants in storm water to the maximum extent practicable) are not delayed;

ix. Ensure that a financial strategy is in place.

2. Compliance with Receiving Water Limitations Not Otherwise Addressed by a TMDL through a WMP or EWMP

a. For receiving water limitations in Part V.A. associated with water body-pollutant combinations not addressed through a TMDL, but which a Permittee elects to address through a Watershed Management Program or EWMP as set forth in this Part VI.C., a Permittee shall comply as follows:

i. For pollutants that are in the same class[21] as those addressed in a TMDL for the watershed and for which the water body is identified as impaired on the State's Clean Water Act Section 303(d) List as of the effective date of this Order:

(1) Permittees shall demonstrate that the Watershed Control Measures to achieve the applicable TMDL provisions identified pursuant to Part VI.C.5.b.iv.(3) will also adequately address contributions of the pollutant(s) within the same class from MS4 discharges to receiving waters, consistent with the assumptions and requirements of the corresponding TMDL provisions, including interim and final requirements and deadlines for their achievement, such that the MS4 discharges of the pollutant(s) will not cause or contribute to exceedances of receiving water limitations in Part V.A.

[21] Pollutants are considered in a similar class if they have similar fate and transport mechanisms, can be addressed via the same types of control measures, and within the same timeline already contemplated as part of the Watershed Management Program for the TMDL.

(2) Permittees shall include the water body-pollutant combination(s) in the Reasonable Assurance Analysis in Part VI.C.5.b.iv.(5).

(3) Permittees shall identify milestones and dates for their achievement consistent with those in the corresponding TMDL.

ii. For pollutants that are not in the same class as those addressed in a TMDL for the watershed, but for which the water body is identified as impaired on the State's Clean Water Act Section 303(d) List as of the effective date of this Order:

(1) Permittees shall assess contributions of the pollutant(s) from MS4 discharges to the receiving waters and sources of the pollutant(s) within the drainage area of the MS4 pursuant to Part VI.C.5.a.iii.
(2) Permittees shall identify Watershed Control Measures pursuant to Part VI.C.5.b. that will adequately address contributions of the pollutant(s) from MS4 discharges to receiving waters such that the MS4 discharges of the pollutant(s) will not cause or contribute to exceedances of receiving water limitations in Part V.A.
(3) Permittees shall include the water body-pollutant in the Reasonable Assurance Analysis in Part VI.C.5.b.iv.(5).
(4) Permittees shall identify enforceable requirements and milestones and dates for their achievement to control MS4 discharges such that they do not cause or contribute to exceedances of receiving water limitations within a timeframe(s) that is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary. The time between dates shall not exceed one year. Milestones shall relate to a specific water quality endpoint (e.g., x% of the MS4 drainage area is meeting the receiving water limitations) and dates shall relate either to taking a specific action or meeting a milestone.

(5) Where the final date(s) in (4) is beyond the term of this Order, the following conditions shall apply:

(a) For an EWMP, in drainage areas where retention of (i) all non-storm water runoff and (ii) all storm water runoff from the 85th percentile, 24-hour storm event will be achieved, each participating Permittee shall continue to target implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges that are a source of pollutants to receiving waters.

(b) For a WMP and in areas of a EWMP where retention of the volume in (a) is technically infeasible and where the Regional Water Board determines that MS4 discharges cause or

contribute to the water quality impairment, participating Permittees may initiate development of a stakeholder-proposed TMDL upon approval of the Watershed Management Program or EWMP. For MS4 discharges from these drainage areas to the receiving waters, any extension of this compliance mechanism beyond the term of this Order shall be consistent with the implementation schedule in a TMDL for the waterbody pollutant combination(s) adopted by the Regional Water Board.

iii. For pollutants for which there are exceedances of receiving water limitations in Part V.A., but for which the water body is not identified as impaired on the State's Clean Water Act Section 303(d) List as of the effective date of this Order:

(1) Upon an exceedance of a receiving water limitation, based on data collected pursuant to the MRP and approved IMPs and CIMPs, Permittees shall assess contributions of the pollutant(s) from MS4 discharges to the receiving waters and sources of the pollutant(s) within the drainage area of the MS4 pursuant to Part VI.C.5.a.iii.

(2) If MS4 discharges are identified as a source of the pollutant(s) that has caused or contributed to, or has the potential to cause or contribute to, the exceedance(s) of receiving water limitations in Part V.A., Permittees shall address contributions of the pollutant(s) from MS4 discharges through modifications to the WMP or EWMP pursuant to Part VI.C.8.a.ii.

(a) In a modified WMP or EWMP, Permittees shall identify Watershed Control Measures pursuant to Part VI.C.5.b. that will adequately address contributions of the pollutant(s) from MS4 discharges to receiving waters such that the MS4 discharges of the pollutant(s) will not cause or contribute to exceedances of receiving water limitations in Part V.A.

(b) Permittees shall modify the Reasonable Assurance Analysis pursuant to Part VI.C.5.b.iv.(5) to address the pollutant(s).

(c) Permittees shall identify enforceable requirements and milestones and dates for their achievement to control MS4 discharges such that they do not cause or contribute to exceedances of receiving water limitations within a timeframe(s) that is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary. The time between dates shall not exceed one year. Milestones shall relate to a specific water quality endpoint (e.g., x% of the MS4 drainage area is meeting the receiving water limitations) and dates shall relate either to taking a specific action or meeting a milestone.

(d) Where the final date(s) in (4) is beyond the term of this Order, the following conditions shall apply:

(i) For an EWMP, in drainage areas where retention of (i) all non-storm water runoff and (ii) all storm water runoff from the 85th percentile, 24-hour storm event will be achieved, each participating Permittee shall continue to target implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges that are a source of pollutants to receiving waters.

(ii) For a WMP and in areas of a EWMP where retention of the volume in (a) is technically infeasible, for newly identified exceedances of receiving water limitations, a Permittee may request that the Regional Water Board approve a modification to its WMP or EWMP to include these additional water body-pollutant combinations.

b. A Permittee's full compliance with all requirements and dates for their achievement in an approved Watershed Management Program or EWMP shall constitute a Permittee's compliance with the receiving water limitations provisions in Part V.A. of this Order for the specific water body-pollutant combinations addressed by an approved Watershed Management Program or EWMP.

c. If a Permittee fails to meet any requirement or date for its achievement in an approved Watershed Management Program or EWMP, the Permittee shall be subject to the provisions of Part V.A. for the waterbody-pollutant combination(s) that were to be addressed by the requirement.

d. Upon notification of a Permittee's intent to develop a WMP or EWMP and prior to approval of its WMP or EWMP, a Permittee's full compliance with all of the following requirements shall constitute a Permittee's compliance with the receiving water limitations provisions in Part V.A. not otherwise addressed by a TMDL, if all the following requirements are met:

i. Provides timely notice of its intent to develop a WMP or EWMP,

ii. Meets all interim and final deadlines for development of a WMP or EWMP,

iii. For the area to be covered by the WMP or EWMP, targets implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges of pollutants through the MS4 to receiving waters, to address known contributions of

pollutants from MS4 discharges that cause or contribute to exceedances of receiving water limitations, and

iv. Receives final approval of its WMP or EWMP within 28 or 40 months, respectively.

3. Compliance with Receiving Water Limitations Addressed by a TMDL through a WMP or EWMP

a. A Permittee's full compliance with all requirements and dates for their achievement in an approved Watershed Management Program or EWMP shall constitute a Permittee's compliance with provisions pertaining to applicable interim water quality based effluent limitations and interim receiving water limitations in Part VI.E. and Attachments L-R for the pollutant(s) addressed by the approved Watershed Management Program or EWMP.

b. Upon notification of a Permittee's intent to develop a WMP or EWMP and prior to approval of its WMP or EWMP, a Permittee's full compliance with all of the following requirements shall constitute a Permittee's compliance with the receiving water limitations provisions in Part V.A., if all the following requirements are met:

i. Provides timely notice of its intent to develop a WMP or EWMP,

ii. Meets all interim and final deadlines for development of a WMP or EWMP,

iii. For the area to be covered by the WMP or EWMP, targets implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges of pollutants through the MS4 to receiving waters, to address known contributions of pollutants from MS4 discharges that cause or contribute to exceedances of receiving water limitations, and

iv. Receives final approval of its WMP or EWMP within 28 or 40 months, respectively.

c. Subdivision b. does not apply to receiving water limitations corresponding to final compliance deadlines pursuant to TMDL provisions in Part VI.E. that have passed or will occur prior to approval of a WMP or EWMP.

4. Process

a. Timelines for Implementation

i. Implementation of the following requirements shall occur per the schedule specified in Table 9 below:

Table 9. Watershed Management Program Implementation Requirements

Part	Provision	Due Date
VI.C.4.b	Notify Regional Water Board of intent to develop Watershed Management Program or enhanced WMP and request submittal date for draft program plan	6 months after Order effective date
VI.C.4.c	For Permittee(s) that elect not to implement the conditions of Part VI.C.4.c.i or c.ii, submit draft plan to Regional Water Board	1 year after Order effective date
VI.C.4.c	For Permittee(s) that elect to implement the conditions of Part VI.C.4.c.i or c.ii, submit draft plan to Regional Water Board	18 months after Order effective date
VI.C.4.c.iv	For Permittees that elect to collaborate on an enhanced WMP that meets the requirements of Part VI.C.4.c.iv,submit draft plan to Regional Water Board	18 months after Order effective date, provide final work plan for development of enhanced WMP 30 months after Order effective date, submit draft plan
VI.C.4.c	Comments provided to Permittees by Regional Water Board	4 months after submittal of draft plan
VI.C.4.c	Submit final plan to Regional Water Board	3 months after receipt of Regional Water Board comments on draft plan
VI.C.4.c	Approval or denial of final plan by Regional Water Board or by the Executive Officer on behalf of the Regional Water Board	3 months after submittal of final plan
VI.C.6	Begin implementation of Watershed Management Program or EWMP	Upon approval of final plan
VI.C.8	Comprehensive evaluation of Watershed Management	Every two years from date of

	Program or EWMP and submittal of modifications to plan	approval

b. Permittees that elect to develop a Watershed Management Program or EWMP must notify the Regional Water Board no later than six months after the effective date of this Order.

i. Such notification shall specify if the Permittee(s) are requesting a 12-month or 18-month submittal date for the draft Watershed Management Program, per Part VI.C.4.c.i – ii, or if the Permittees are requesting a 18/30-month submittal date for the draft EWMP per Part VI.C.4.c.iv.

ii. As part of their notice of intent to develop a WMP or EWMP, Permittees shall identify all applicable interim and final trash WQBELs and all other final WQBELs and receiving water limitations pursuant to Part VI.E. and the applicable attachment(s) with compliance deadlines occurring prior to approval of a WMP or EWMP. Permittees shall identify watershed control measures, where possible from existing TMDL implementation plans, that will be implemented by participating Permittees concurrently with the development of a Watershed Management Program or EWMP to ensure that MS4 discharges achieve compliance with applicable interim and final trash WQBELs and all other final WQBELs and receiving water limitations set forth in Part VI.E. and the applicable attachment(s) by the applicable compliance deadlines occurring prior to approval of a WMP or EWMP.

iii. As part of their notification, Permittees electing to develop an EWMP shall submit all of the following in addition to the requirements of Part VI.C.4.b.i.-ii.:

(1) Plan concept and geographical scope,

(2) Cost estimate for plan development,

(3) Executed MOU/agreement among participating Permittees to fund plan development, or final draft MOU among participating Permittees along with a signed letter of intent from each participating City Manager or head of agency. If a final draft MOU is submitted, the MOU shall be fully executed by all participating Permittees within 12 months of the effective date of this Order.

(4) Interim milestones for plan development and deadlines for their achievement,

(5) Identification of, and commitment to fully implement, one structural BMP or a suite of BMPs at a scale that provides meaningful water quality improvement within each watershed covered by the plan within 30 months of the effective date of this Order in addition to

watershed control measures to be implemented pursuant to b.ii. above. The structural BMP or suite of BMPs shall be subject to approval by the Regional Water Board Executive Officer, and

(6) Demonstration that the requirements in Parts VI.C.4.c.iv.(1) and (2) have been met.

c. Permittees that elect to develop a Watershed Management Program shall submit a draft plan to the Regional Water Board as follows:

i. For Permittees that elect to collaborate on the development of a Watershed Management Program, Permittees shall submit the draft Watershed Management Program no later than 18 months after the effective date of this Order if the following conditions are met in greater than 50% of the land area covered by the WMP:

(1) Demonstrate that there are LID ordinances in place and/or commence development of a Low Impact Development (LID) ordinance(s) meeting the requirements of this Order's Planning and Land Development Program within 60 days of the effective date of the Order and have a draft ordinance within 6 months of the effective date of the Order, and

(2) Demonstrate that there are green streets policies in place and/or commence development of a policy(ies) that specifies the use of green street strategies for transportation corridors within 60 days of the effective date of the Order and have a draft policy within 6 months of the effective date of the Order.

(3) Demonstrate in the notification of the intent to develop a Watershed Management Program that Parts VI.C.4.c.i(1) and (2) have been met in greater than 50% of the watershed area.

ii. For a Permittee that elects to develop an individual Watershed Management Program, the Permittee shall submit the draft Watershed Management Program no later than 18 months after the effective date of this Order if the following conditions are met:

(1) Demonstrate that there is a LID ordinance in place for the Permittee's jurisdiction and/or commence development of a Low Impact Development (LID) ordinance for the Permittee's jurisdiction meeting the requirements of this Order's Planning and Land Development Program within 60 days of the effective date of the Order and have a draft ordinance within 6 months of the effective date of the Order, and

(2) Demonstrate that there is a green streets policy in place for the Permittee's jurisdiction and/or commence development of a policy

that specifies the use of green street strategies for transportation corridors within the Permittee's jurisdiction within 60 days of the effective date of the Order and have a draft policy within 6 months of the effective date of the Order.

(3) Demonstrate in the notification of the intent to develop a Watershed Management Program that Parts VI.C.4.c.ii.(1) and (2) have been met.

iii. For Permittees that elect not to implement the conditions under Part VI.C.4.c.i. or Part VI.C.4.c.ii., Permittees shall submit the draft Watershed Management Program no later than 12 months after the effective date of this Order.

iv. For Permittees that elect to collaborate on the development of an EWMP, Permittees shall submit the work plan for development of the EWMP no later than 18 months after the effective date of this Order, and shall submit the draft program no later than 30 months after the effective date of this Order if the following conditions are met in greater than 50% of the land area in the watershed:

(1) Demonstrate that there are LID ordinances in place and/or commence development of a Low Impact Development (LID) ordinance(s) meeting the requirements of this Order's Planning and Land Development Program within 60 days of the effective date of the Order and have a draft ordinance within 6 months of the effective date of the Order, and

(2) Demonstrate that there are green streets policies in place and/or commence development of a policy(ies) that specifies the use of green street strategies for transportation corridors within 60 days of the effective date of the Order and have a draft policy within 6 months of the effective date of the Order.

(3) Demonstrate in the notification of the intent to develop an EWMP that Parts VI.C.4.c.iv.(1) and (2) have been met in greater than 50% of the watershed area.

d. Until the Watershed Management Program or EWMP is approved by the Regional Water Board or by the Executive Officer on behalf of the Regional Water Board, Permittees that elect to develop a Watershed Management Program or EWMP shall:

i. Continue to implement watershed control measures in their existing storm water management programs, including actions within each of the six categories of minimum control measures consistent with 40 CFR section 122.26(d)(2)(iv),

ii. Continue to implement watershed control measures to eliminate non-storm water discharges through the MS4 that are a source of pollutants to receiving waters consistent with CWA section 402(p)(3)(B)(ii), and

iii. Implement watershed control measures, where possible from existing TMDL implementation plans, to ensure that MS4 discharges achieve compliance with interim and final trash WQBELs and all other final WQBELs and receiving water limitations pursuant to Part VI.E. and set forth in Attachments L through R by the applicable compliance deadlines occurring prior to approval of a WMP or EWMP.

e. Permittees that do not elect to develop a Watershed Management Program or EWMP, or that do not have an approved WMP or EWMP within 28 or 40 months, respectively, of the effective date of this Order, shall be subject to the baseline requirements in Part VI.D and shall demonstrate compliance with receiving water limitations pursuant to Part V.A. and with applicable interim water quality-based effluent limitations in Part VI.E pursuant to subparts VI.E.2.d.i.(1)-(3).

f. Permittees subject to the Middle Santa Ana River Watershed Bacteria Indicator TMDL shall submit a Comprehensive Bacteria Reduction Plan (CBRP) for dry weather to the Regional Water Board Executive Officer no later than nine months after the effective date of this Order. The CBRP shall describe, in detail, the specific actions that have been taken or will be taken to achieve compliance with the dry weather water quality-based effluent limitations and the receiving water limitations for the Middle Santa Ana River Watershed Bacteria Indicator TMDL by December 31, 2015. The CBRP shall also establish a schedule for developing a CBRP to comply with the water quality-based effluent limitations and the receiving water limitations for the Middle Santa Ana River Bacteria TMDL during wet weather by December 31, 2025. The CBRP may be developed in lieu of the Watershed Management Program for MS4 discharges of bacteria within the Middle Santa Ana River Watershed.

5. Program Development

a. Identification of Water Quality Priorities

Permittees shall identify the water quality priorities within each WMA that will be addressed by the Watershed Management Program. At a minimum, these priorities shall include achieving applicable water quality-based effluent limitations and/or receiving water limitations established pursuant to TMDLs, as set forth in Part VI.E and Attachments L through R of this Order.

i. Water Quality Characterization. Each plan shall include an evaluation of existing water quality conditions, including characterization of storm water and non-storm water discharges from the MS4 and receiving water quality,

to support identification and prioritization/sequencing of management actions.

ii. Water Body-Pollutant Classification. On the basis of the evaluation of existing water quality conditions, water body-pollutant combinations shall be classified into one of the following three categories:

(1) Category 1 (Highest Priority): Water body-pollutant combinations for which water quality-based effluent limitations and/or receiving water limitations are established in Part VI.E and Attachments L through R of this Order.

(2) Category 2 (High Priority): Pollutants for which data indicate water quality impairment in the receiving water according to the State's Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (State Listing Policy) and for which MS4 discharges may be causing or contributing to the impairment.

(3) Category 3 (Medium Priority): Pollutants for which there are insufficient data to indicate water quality impairment in the receiving water according to the State's Listing Policy, but which exceed applicable receiving water limitations contained in this Order and for which MS4 discharges may be causing or contributing to the exceedance.

iii. Source Assessment. Utilizing existing information, potential sources within the watershed for the water body-pollutant combinations in Categories 1 - 3 shall be identified.

(1) Permittees shall identify known and suspected storm water and non-storm water pollutant sources in discharges to the MS4 and from the MS4 to receiving waters and any other stressors related to MS4 discharges causing or contributing to the water quality priorities. The identification of known and suspected sources of the highest water quality priorities shall consider the following:

(a) Review of available data, including but not limited to:

(i) Findings from the Permittees' Illicit Connections and Illicit Discharge Elimination Programs;

(ii) Findings from the Permittees' Industrial/Commercial Facilities Programs;

(iii) Findings from the Permittees' Development Construction Programs;

(iv) Findings from the Permittees' Public Agency Activities Programs;

(v) TMDL source investigations;

(vi) Watershed model results;

(vii) Findings from the Permittees' monitoring programs, including but not limited to TMDL compliance monitoring and receiving water monitoring; and

(viii) Any other pertinent data, information, or studies related to pollutant sources and conditions that contribute to the highest water quality priorities.

(b) Locations of the Permittees' MS4s, including, at a minimum, all MS4 major outfalls and major structural controls for storm water and non-storm water that discharge to receiving waters.

(c) Other known and suspected sources of pollutants in non-storm water or storm water discharges from the MS4 to receiving waters within the WMA.

iv. Prioritization. Based on the findings of the source assessment, the issues within each watershed shall be prioritized and sequenced. Watershed priorities shall include at a minimum:

(1) TMDLs

(a) Controlling pollutants for which there are water quality-based effluent limitations and/or receiving water limitations with interim or final compliance deadlines within the permit term, or TMDL compliance deadlines that have already passed and limitations have not been achieved.

(b) Controlling pollutants for which there are water quality-based effluent limitations and/or receiving water limitations with interim or final compliance deadlines between September 6, 2012 and October 25, 2017.

(2) Other Receiving Water Considerations

(a) Controlling pollutants for which data indicate impairment or exceedances of receiving water limitations in the receiving water and the findings from the source assessment implicates discharges from the MS4 shall be considered the second highest priority.

b. Selection of Watershed Control Measures

i. Permittees shall identify strategies, control measures, and BMPs to implement through their individual storm water management programs, and collectively on a watershed scale, with the goal of creating an efficient program to focus individual and collective resources on watershed priorities.

ii. The objectives of the Watershed Control Measures shall include:

(1) Prevent or eliminate non-storm water discharges to the MS4 that are a source of pollutants from the MS4 to receiving waters.

(2) Implement pollutant controls necessary to achieve all applicable interim and final water quality-based effluent limitations and/or receiving water limitations pursuant to corresponding compliance schedules.

(3) Ensure that discharges from the MS4 do not cause or contribute to exceedances of receiving water limitations.

iii. Watershed Control Measures may include:

(1) Structural and/or non-structural controls and operation and maintenance procedures that are designed to achieve applicable water quality-based effluent limitations, receiving water limitations in Part VI.E and/or Attachments L through R;

(2) Retrofitting areas of existing development known or suspected to contribute to the highest water quality priorities with regional or sub-regional controls or management measures; and

(3) Stream and/or habitat rehabilitation or restoration projects where stream and/or habitat rehabilitation or restoration are necessary for, or will contribute to demonstrable improvements in the physical, chemical, and biological receiving water conditions and restoration and/or protection of water quality standards in receiving waters.

iv. The following provisions of this Order shall be incorporated as part of the Watershed Management Program:

(1) Minimum Control Measures.

(a) Permittees shall assess the minimum control measures (MCMs) as defined in Part VI.D.4 to Part VI.D.10 of this Order to identify opportunities for focusing resources on the high priority issues in each watershed. For each of the following minimum control measures, Permittees shall identify potential modifications that will address watershed priorities:

(i) Development Construction Program

(ii) Industrial/Commercial Facilities Program

(iii) Illicit Connection and Illicit Discharges Detection and Elimination Program

(iv) Public Agency Activities Program

(v) Public Information and Participation Program

(b) At a minimum, the Watershed Management Program shall include management programs consistent with 40 CFR section 122.26(d)(2)(iv)(A)-(D).

(c) If the Permittee(s) elects to eliminate a control measure identified in Parts VI.D.4, VI.D.5, VI.D.6 and VI.D.8 to VI.D.10 because that specific control measure is not applicable to the Permittee(s), the Permittee(s) shall provide a justification for its elimination. The Planning and Land Development Program is not eligible for elimination.

(d) Such customized actions, once approved as part of the Watershed Management Program, shall replace in part or in whole the requirements in Parts VI.D.4, VI.D.5, VI.D.6 and VI.D.8 to VI.D.10 for participating Permittees.

(2) Non-Storm Water Discharge Measures. Where Permittees identify non-storm water discharges from the MS4 as a source of pollutants that cause or contribute to exceedance of receiving water limitations, the Watershed Control Measures shall include strategies, control measures, and/or BMPs that must be implemented to effectively eliminate the source of pollutants consistent with Parts III.A and VI.D.10. These may include measures to prohibit the non-storm water discharge to the MS4, additional BMPs to reduce pollutants in the non-storm water discharge or conveyed by the non-storm water discharge, diversion to a sanitary sewer for treatment, or strategies to require the non-storm water discharge to be separately regulated under a general NPDES permit.

(3) TMDL Control Measures. Permittees shall compile control measures that have been identified in TMDLs and corresponding implementation plans. Permittees shall identify those control measures to be modified, if any, to most effectively address TMDL requirements within the watershed. If not sufficiently identified in previous documents, or if implementation plans have not yet been developed (e.g., USEPA established TMDLs), the Permittees shall evaluate and identify control measures to achieve water quality-based effluent limitations and/or

receiving water limitations established in this Order pursuant to these TMDLs.

(a) TMDL control measures shall include where necessary control measures to address both storm water and non-storm water discharges from the MS4.

(b) TMDL control measures may include baseline or customized activities covered under the general MCM categories in Part VI.D as well as BMPs and other control measures covered under the non-storm water discharge provisions of Part III.A of this Order.

(c) The WMP shall include, at a minimum, those actions that will be implemented during the permit term to achieve interim and/or final water quality-based effluent limitations and/or receiving water limitations with compliance deadlines within the permit term.

(4) Each plan shall include the following components:

(a) Identification of specific structural controls and non-structural best management practices, including operational source control and pollution prevention, and any other actions or programs to achieve all water quality-based effluent limitations and receiving water limitations contained in this Part VI.E and Attachments L through R to which the Permittee(s) is subject;

(b) For each structural control and non-structural best management practice, the number, type, and location(s) and/or frequency of implementation;

(c) For any pollution prevention measures, the nature, scope, and timing of implementation;

(d) For each structural control and non-structural best management practice, interim milestones and dates for achievement to ensure that TMDL compliance deadlines will be met; and

(e) The plan shall clearly identify the responsibilities of each participating Permittee for implementation of watershed control measures.

(5) Permittees shall conduct a Reasonable Assurance Analysis for each water body-pollutant combination addressed by the Watershed Management Program. A Reasonable Assurance Analysis (RAA) shall be quantitative and performed using a peer-reviewed model in the public domain. Models to be considered for the RAA, without exclusion, are the Watershed Management Modeling System (WMMS), Hydrologic Simulation Program-FORTRAN (HSPF), and the Structural BMP Prioritization and Analysis Tool (SBPAT). The RAA shall commence with assembly of all available, relevant subwatershed data collected within the last 10 years, including land use and pollutant

loading data, establishment of quality assurance/quality control (QA/QC) criteria, QA/QC checks of the data, and identification of the data set meeting the criteria for use in the analysis. Data on performance of watershed control measures needed as model input shall be drawn only from peer-reviewed sources. These data shall be statistically analyzed to determine the best estimate of performance and the confidence limits on that estimate for the pollutants to be evaluated. The objective of the RAA shall be to demonstrate the ability of Watershed Management Programs and EWMPs to ensure that Permittees' MS4 discharges achieve applicable water quality based effluent limitations and do not cause or contribute to exceedances of receiving water limitations.

(a) Permittees shall demonstrate using the RAA that the activities and control measures identified in the Watershed Control Measures will achieve applicable water quality-based effluent limitations and/or receiving water limitations in Attachments L through R with compliance deadlines during the permit term.

(b) Where the TMDL Provisions in Part VI.E and Attachments L through R do not include interim or final water quality-based effluent limitations and/or receiving water limitations with compliance deadlines during the permit term, Permittees shall identify interim milestones and dates for their achievement to ensure adequate progress toward achieving interim and final water quality-based effluent limitations and/or receiving water limitations with deadlines beyond the permit term.

(c) For water body-pollutant combinations not addressed by TMDLs, Permittees shall demonstrate using the RAA that the activities and control measures identified in the Watershed Control Measures will achieve applicable receiving water limitations as soon as possible.

(6) Permittees shall provide documentation that they have the necessary legal authority to implement the Watershed Control Measures identified in the plan, or that other legal authority exists to compel implementation of the Watershed Control Measures.

c. Compliance Schedules

Permittees shall incorporate compliance schedules in Attachments L through R into the plan and, where necessary develop interim milestones and dates for their achievement. Compliance schedules and interim milestones and dates for their achievement shall be used to measure progress towards addressing the highest water quality priorities and achieving applicable water quality-based effluent limitations and/or receiving water limitations.

i. Schedules must be adequate for measuring progress on a watershed scale once every two years.

ii. Schedules must be developed for both the strategies, control measures and BMPs implemented by each Permittee within its jurisdiction and for those that will be implemented by multiple Permittees on a watershed scale.

iii. Schedules shall incorporate the following:

(1) Compliance deadlines occurring within the permit term for all applicable interim and/or final water quality-based effluent limitations and/or receiving water limitations in Part VI.E and Attachments L through R of this Order,

(2) Interim milestones and dates for their achievement within the permit term for any applicable final water quality-based effluent limitation and/or receiving water limitation in Part VI.E and Attachments L through R, where deadlines within the permit term are not otherwise specified.

(3) For watershed priorities related to addressing exceedances of receiving water limitations in Part V.A and not otherwise addressed by Part VI.E:

(a) Milestones based on measureable criteria or indicators, to be achieved in the receiving waters and/or MS4 discharges,

(a) A schedule with dates for achieving the milestones, and

(b) A final date for achieving the receiving water limitations as soon as possible.

(c) The milestones and implementation schedule in (a)-(c) fulfill the requirements in Part V.A.3.a to prepare an Integrated Monitoring Compliance Report.

6. Watershed Management Program Implementation

Each Permittee shall begin implementing the Watershed Management Program or EWMP immediately upon approval of the plan by the Regional Water Board or the Executive Officer on behalf of the Regional Water Board.

a. Permittees may request an extension of deadlines for achievement of interim milestones established pursuant to Part VI.C.4.c.iii.(3) only. Permittees shall provide requests in writing at least 90 days prior to the deadline and shall include in the request the justification for the extension. Extensions shall be subject to approval by the Regional Water Board Executive Officer.

7. Integrated Watershed Monitoring and Assessment

Permittees in each WMA shall develop an integrated monitoring program as set forth in Part IV of the MRP (Attachment E) or implement a customized monitoring program with the primary objective of allowing for the customization of the outfall monitoring program (Parts VIII and IX) in conjunction with an approved Watershed Management Program or EWMP, as defined below. Each monitoring program shall assess progress toward achieving the water quality-based effluent limitations and/or receiving water limitations per the compliance schedules, and progress toward addressing the water quality priorities for each WMA. The customized monitoring program shall be submitted as part of the Watershed Management Program, or where Permittees elect to develop an EWMP, shall be submitted within 18 months of the effective date of this Order. If pursuing a customized monitoring program, the Permittee(s) shall provide sufficient justification for each element of the program that differs from the monitoring program requirements as set forth in Attachment E. Monitoring programs shall be subject to approval by the Executive Officer following a public comment period. The customized monitoring program shall be designed to address the Primary Objectives detailed in Attachment E, Part II.A and shall include the following program elements:

- Receiving Water Monitoring
- Storm Water Outfall Monitoring
- Non-Storm Water Outfall Monitoring
- New Development/Re-Development Effectiveness Tracking
- Regional Studies

8. Adaptive Management Process

a. Watershed Management Program Adaptive Management Process

i. Permittees in each WMA shall implement an adaptive management process, every two years from the date of program approval, adapting the Watershed Management Program or EWMP to become more effective, based on, but not limited to a consideration of the following:

(1) Progress toward achieving interim and/or final water quality-based effluent limitations and/or receiving water limitations in Part VI.E and Attachments L through R, according to established compliance schedules;

(2) Progress toward achieving improved water quality in MS4 discharges and achieving receiving water limitations through implementation of the watershed control measures based on an evaluation of outfall-based monitoring data and receiving water monitoring data;

(3) Achievement of interim milestones;

(4) Re-evaluation of the water quality priorities identified for the WMA based on more recent water quality data for discharges from the MS4 and the receiving water(s) and a reassessment of sources of pollutants in MS4 discharges;

(5) Availability of new information and data from sources other than the Permittees' monitoring program(s) within the WMA that informs the effectiveness of the actions implemented by the Permittees;

(6) Regional Water Board recommendations; and

(7) Recommendations for modifications to the Watershed Management Program solicited through a public participation process.

ii. Based on the results of the adaptive management process, Permittees shall report any modifications, including where appropriate new compliance deadlines and interim milestones, with the exception of those compliance deadlines established in a TMDL, necessary to improve the effectiveness of the Watershed Management Program or EWMP in the Annual Report, as required pursuant to Part XVIII.A.6 of the MRP (Attachment E), and as part of the Report of Waste Discharge (ROWD) required pursuant to Part II.B of Attachment D – Standard Provisions.

(1) The adaptive management process fulfills the requirements in Part V.A.4 to address continuing exceedances of receiving water limitations.

iii. Permittees shall implement any modifications to the Watershed Management Program or EWMP upon approval by the Regional Water Board Executive Officer or within 60 days of submittal if the Regional Water Board Executive Officer expresses no objections.

D. Storm Water Management Program Minimum Control Measures

1. General Requirements

a. Each Permittee shall implement the requirements in Parts VI.D.4 through VI.D.10 below, or may in lieu of the requirements in Parts VI.D.4 through VI.D.10 implement customized actions within each of these general categories of control measures as set forth in an approved Watershed Management Program per Part VI.C. Implementation shall be consistent with the requirements of 40 CFR § 122.26(d)(2)(iv).

b. Timelines for Implementation

i. Unless otherwise noted in Part VI.D, each Permittee that does not elect to develop a Watershed Management Program or EWMP per Part VI.C shall implement the requirements contained in Part VI.D within 6 months after the

effective date of this Order. In the interim, a Permittee shall continue to implement its existing storm water management program, including actions within each of the six categories of minimum control measures consistent with 40 CFR section 122.26(d)(2)(iv).

ii. Permittees that elect to develop a Watershed Management Program or EWMP shall continue to implement their existing storm water management programs, including actions within each of the six categories of minimum control measures consistent with 40 CFR section 122.26(d)(2)(iv) until the Watershed Management Program or EWMP is approved by the Regional Water Board Executive Officer.

2. Progressive Enforcement and Interagency Coordination

a. Each Permittee shall develop and implement a Progressive Enforcement Policy to ensure that (1) regulated Industrial/Commercial facilities, (2) construction sites, (3) development and redevelopment sites with post-construction controls, and (4) illicit discharges are each brought into compliance with all storm water and non-storm water requirements within a reasonable time period as specified below.

i. Follow-up Inspections

In the event that a Permittee determines, based on an inspection or illicit discharge investigation conducted, that a facility or site operator has failed to adequately implement all necessary BMPs, that Permittee shall take progressive enforcement actions which, at a minimum, shall include a follow-up inspection within 4 weeks from the date of the initial inspection and/or investigation.

ii. Enforcement Action

In the event that a Permittee determines that a facility or site operator has failed to adequately implement BMPs after a follow-up inspection, that Permittee shall take enforcement action as established through authority in its municipal code and ordinances, through the judicial system, or refer the case to the Regional Water Board, per the Interagency Coordination provisions below.

iii. Records Retention

Each Permittee shall maintain records, per their existing record retention policies, and make them available on request to the Regional Water Board, including inspection reports, warning letters, notices of violations, and other enforcement records, demonstrating a good faith effort to bring facilities into compliance.

iv. Referral of Violations of Municipal Ordinances and California Water Code § 13260

A Permittee may refer a violation(s) of its municipal storm water ordinances and/or California Water Code section 13260 by Industrial and Commercial facilities and construction site operators to the Regional Water Board

provided that the Permittee has made a good faith effort of applying its Progressive Enforcement Policy to achieve compliance with its own ordinances. At a minimum, a Permittee's good faith effort must be documented with:

(1) Two follow-up inspections, and

(2) Two warning letters or notices of violation.

v. Referral of Violations of the Industrial and Construction General Permits, including Requirements to File a Notice of Intent or No Exposure Certification

For those facilities or site operators in violation of municipal storm water ordinances and subject to the Industrial and/or Construction General Permits, Permittees may escalate referral of such violations to the Regional Water Board (promptly via telephone or electronically) after one inspection and one written notice of violation (copied to the Regional Water Board) to the facility or site operator regarding the violation. In making such referrals, Permittees shall include, at a minimum, the following documentation:

(1) Name of the facility or site,

(2) Operator of the facility or site,

(3) Owner of the facility or site,

(4) WDID Number (if applicable),

(5) Records of communication with the facility/site operator regarding the violation, which shall include at least one inspection report,

(6) The written notice of violation (copied to the Regional Water Board),

(7) For industrial sites, the industrial activity being conducted at the facility that is subject to the Industrial General Permit, and

(8) For construction sites, site acreage and Risk Factor rating.

b. Investigation of Complaints Transmitted by the Regional Water Board Staff

Each Permittee shall initiate, within one business day,[22] investigation of complaints from facilities within its jurisdiction. The initial investigation shall include, at a minimum, a limited inspection of the facility to confirm validity of the complaint and to determine if the facility is in compliance with municipal storm water ordinances and, if necessary, to oversee corrective action.

c. Assistance with Regional Water Board Enforcement Actions

As directed by the Regional Water Board Executive Officer, Permittees shall assist Regional Water Board enforcement actions by:

i. Assisting in identification of current owners, operators, and lessees of properties and sites.

[22] Permittees may comply with the Permit by taking initial steps (such as logging, prioritizing, and tasking) to "initiate" the investigation within that one business day. However, the Regional Water Board would expect that the initial investigation, including a site visit, to occur within four business days.

ii. Providing staff, when available, for joint inspections with Regional Water Board inspectors.

iii. Appearing to testify as witnesses in Regional Water Board enforcement hearings.

iv. Providing copies of inspection reports and documentation demonstrating application of its Progressive Enforcement Policy.

3. Modifications/Revisions

a. Each Permittee shall modify its storm water management programs, protocols, practices, and municipal codes to make them consistent with the requirements in this Order.

4. Requirements Applicable to the Los Angeles County Flood Control District

a. Public Information and Participation Program (PIPP)

i. General

(1) The LACFCD shall participate in a regional Public Information and Participation Program (PIPP) or alternatively, shall implement its own PIPP that includes the requirements listed in this part. The LACFCD shall collaborate, as necessary, with other Permittees to implement PIPP requirements. The objectives of the PIPP are as follows:

(a) To measurably increase the knowledge of the target audience about the MS4, the adverse impacts of storm water pollution on receiving waters and potential solutions to mitigate the impacts.

(b) To measurably change the waste disposal and storm water pollution generation behavior of target audiences by encouraging the implementation of appropriate alternatives by providing information to the public.

(c) To involve and engage a diversity of socio-economic groups and ethnic communities in Los Angeles County to participate in mitigating the impacts of stormwater pollution.

ii. PIPP Implementation

(1) The LACFCD shall implement the PIPP requirements listed in this Part VI.D.5 using one or more of the following approaches:

(a) By participating in a collaborative PIPP covering the entire service area of the Los Angeles County Flood Control District,

(b) By participating in one or more Watershed Group sponsored PIPPs, and/or

(c) Individually within the service area of the Los Angeles County Flood Control District.

(2) If the LACFCD participates in a collaborative District-wide or Watershed Group PIPP, the LACFCD shall provide the contact information for their appropriate staff responsible for storm water public education activities to the designated PIPP coordinator and contact information changes no later than 30 days after a change occurs.

iii. Public Participation

(1) The LACFCD, in collaboration with the County of Los Angeles, shall continue to maintain the countywide hotline (888-CLEAN-LA) for public reporting of clogged catch basin inlets and illicit discharges/dumping, faded or missing catch basin labels, and general storm water management information.

(a) The LACFCD shall include the reporting information, updated when necessary, in public information, and the government pages of the telephone book, as they are developed or published.

(b) The LACFCD, in collaboration with the County of Los Angeles, shall continue to maintain the www.888cleanla.com website.

iv. Residential Outreach Program

(1) Working in conjunction with a District-wide or Watershed Group sponsored PIPP or individually, the LACFCD shall implement the following activities:

(a) Conduct storm water pollution prevention public service announcements and advertising campaigns

(b) Facilitate the dissemination of public education materials including, at a minimum, information on the proper handling (i.e., disposal, storage and/or use) of:

(i) Vehicle waste fluids

(ii) Household waste materials (i.e., trash and household hazardous waste)

(iii) Construction waste materials

(iv) Pesticides and fertilizers (including integrated pest management practices [IPM] to promote reduced use of pesticides),

(v) Green waste (including lawn clippings and leaves)

(vi) Animal wastes

(c) Facilitate the dissemination of activity-specific storm water pollution prevention public education materials, at a minimum, for the following points of purchase:

(i) Automotive parts stores

(ii) Home improvement centers / lumber yards / hardware stores / paint stores

(iii) Landscaping / gardening centers

(iv) Pet shops / feed stores

(d) Maintain a storm water website, which shall include educational material and opportunities for the public to participate in storm water pollution prevention and clean-up activities listed in Part VI.D.5.

(e) When implementing activities in (a)-(d), the LACFCD shall use effective strategies to educate and involve ethnic communities in storm water pollution prevention through culturally effective methods.

b. Industrial/Commercial Facilities Program

If the LACFCD operates, or has authority over, any facility(ies) identified in Part VI.D.6.b, LACFCD shall comply with the requirements in Part VI.D.6 for those facilities.

c. Public Agency Activities Program

i. General

(1) The LACFCD shall implement a Public Agency Activities Program to minimize storm water pollution impacts from LACFCD-owned or operated facilities and activities. Requirements for Public Agency Facilities and Activities consist of the following components:

(a) Public Construction Activities Management.

(b) Public Facility Inventory

(c) Public Facility and Activity Management

(d) Vehicle and Equipment Washing

(e) Landscape and Recreational Facilities Management

(f) Storm Drain Operation and Maintenance

(g) Parking Facilities Management

(h) Emergency Procedures

(i) Employee and Contractor Training

ii. Public Construction Activities Management

(1) The LACFCD shall implement and comply with the Planning and Land Development Program requirements in Part VI.D.7 of this Order at LACFCD-owned or operated public construction projects that are categorized under the project types identified in Part VI.D.7 of this Order.

(2) The LACFCD shall implement and comply with the appropriate Development Construction Program requirements in Part VI.D.8 of this Order at LACFCD-owned or operated construction projects as applicable.

(3) For LACFCD-owned or operated projects that disturb less than one acre of soil, the LACFCD shall require the implementation of an effective combination of erosion and sediment control BMPs from Table 13 (see Construction Development Program).

(4) The LACFCD shall obtain separate coverage under the Construction General Permit for all LACFCD-owned or operated construction sites that require coverage.

iii. Public Facility Inventory

(1) The LACFCD shall maintain an updated watershed-based inventory and map of all LACFCD-owned or operated facilities that are potential sources of storm water pollution. The incorporation of facility information into a GIS is recommended. Sources to be tracked include but are not limited to the following:

(a) Chemical storage facilities

(b) Equipment storage and maintenance facilities (including landscape maintenance-related operations)

(c) Fueling or fuel storage facilities

(d) Materials storage yards

(e) Pesticide storage facilities

(f) LACFCD buildings

(g) LACFCD vehicle storage and maintenance yards

(h) All other LACFCD-owned or operated facilities or activities that the LACFCD determines may contribute a substantial pollutant load to the MS4.

(2) The LACFCD shall include the following minimum fields of information for each LACFCD-owned or operated facility in its watershed-based inventory and map.

(a) Name of facility

(b) Name of facility manager and contact information

(c) Address of facility (physical and mailing)

(d) A narrative description of activities performed and principal products used at each facility and status of exposure to storm water.

(e) Coverage under the Industrial General Permit or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.

(3) The LACFCD shall update its inventory and map once during the Permit term. The update shall be accomplished through a collection of new information obtained through field activities.

iv. Public Agency Facility and Activity Management

(1) The LACFCD shall obtain separate coverage under the Industrial General Permit for all LACFCD-owned or operated facilities where industrial activities are conducted that require coverage under the Industrial General Permit.

(2) The LACFCD shall implement the following measures for flood management projects:

(a) Develop procedures to assess the impacts of flood management projects on the water quality of receiving waterbodies; and

(b) Evaluate existing structural flood control facilities during the planning phases of major maintenance or rehabilitation projects to determine if retrofitting the facility to provide additional pollutant removal from storm water is feasible.

(3) The LACFCD shall implement and maintain the general and activity-specific BMPs listed in Table 18 (BMPs for Public Agency Facilities and Activities) or an equivalent set of BMPs when such activities occur at LACFCD-owned or operated facilities and field activities (e.g., project sites) including but not limited to the facility types listed in Part VI.D.9.c above, and at any area that includes the activities described in Table 18, or that have the potential to discharge pollutants in storm water.

(4) Any contractors hired by the LACFCD to conduct Public Agency Activities shall be contractually required to implement and maintain the general and activity specific BMPs listed in Table 18 or an equivalent set of BMPs. The LACFCD shall conduct oversight of contractor activities to ensure these BMPs are implemented and maintained.

(5) Effective source control BMPs for the activities listed in Table 18 shall be implemented at LACFCD-owned or operated facilities, unless the pollutant generating activity does not occur. The LACFCD shall require implementation of additional BMPs where storm water from the MS4 discharges to a significant ecological area (SEA, see Attachment A for definition), a water body subject to TMDL Provisions in Part VI.E, or a CWA section 303(d) listed water body (see Part VI.E below). Likewise, for those BMPs that are not adequately protective of water quality standards, the LACFCD shall implement additional site-specific controls.

v. Vehicle and Equipment Washing

(1) The LACFCD shall implement and maintain the activity specific BMPs listed in Table 18 (BMPs for Public Agency Facilities and Activities) or an equivalent set of BMPs for all fixed vehicle and equipment washing areas;

(2) The LACFCD shall prevent discharges of wash waters from vehicle and equipment washing to the MS4 by implementing any of the following measures at existing facilities with vehicle or equipment wash areas:

(a) Self-contain, and haul off for disposal; or

(b) Equip with a clarifier or an alternative pre-treatment device and plumb to the sanitary sewer in accordance with applicable waste water provider regulations

(3) The LACFCD shall ensure that any LACFCD facilities constructed, redeveloped, or replaced shall not discharge wastewater from vehicle and equipment wash areas to the MS4 by plumbing all areas to the sanitary sewer in accordance with applicable waste water provider regulations, or self-containing all waste water/ wash water and hauling to a point of legal disposal.

vi. Landscape and Recreational Facilities Management

(1) The LACFCD shall implement and maintain the activity specific BMPs listed in Table 18 (BMPs for Public Agency Facilities and Activities) or an equivalent set of BMPs for all its public right-of-ways, flood control facilities and open channels and reservoirs, and landscape and recreational facilities and activities.

(2) The LACFCD shall implement an IPM program that includes the following:

(a) Pesticides are used only if monitoring indicates they are needed, and pesticides are applied according to applicable permits and established guidelines.

(b) Treatments are made with the goal of removing only the target organism.

(c) Pest controls are selected and applied in a manner that minimizes risks to human health, beneficial non-target organisms, and the environment.

(d) The use of pesticides, including Organophosphates and Pyrethroids, does not threaten water quality.

(e) Partner, as appropriate, with other agencies and organizations to encourage the use of IPM.

(f) Adopt and verifiably implement policies, procedures, and/ or ordinances requiring the minimization of pesticide use and encouraging the use of IPM techniques (including beneficial insects) for Public Agency Facilities and Activities.

(g) Policies, procedures, and ordinances shall include a schedule to reduce the use of pesticides that cause impairment of surface waters by implementing the following procedures:

(i) Prepare and annually update an inventory of pesticides used by all internal departments, divisions, and other operational units.

(ii) Quantify pesticide use by staff and hired contractors.

(iii) Demonstrate implementation of IPM alternatives where feasible to reduce pesticide use.

(3) The LACFCD shall implement the following requirements:

(a) Use a standardized protocol for the routine and non-routine application of pesticides (including pre-emergents), and fertilizers.

(b) Ensure there is no application of pesticides or fertilizers (1) when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA, (2) within 48 hours of a ½-inch rain event, or (3) when water is flowing off the area where the application is to occur. This requirement does not apply to the application of aquatic pesticides or pesticides which require water for activation.

(c) Ensure that no banned or unregistered pesticides are stored or applied.

(d) Ensure that all staff applying pesticides are certified in the appropriate category by the California Department of Pesticide Regulation, or are under the direct supervision of a pesticide applicator certified in the appropriate category.

(e) Implement procedures to encourage the retention and planting of native vegetation to reduce water, pesticide and fertilizer needs; and

(f) Store pesticides and fertilizers indoors or under cover on paved surfaces, or use secondary containment.

(i) Reduce the use, storage, and handling of hazardous materials to reduce the potential for spills.

(ii) Regularly inspect storage areas.

vii. Storm Drain Operation and Management

(1) The LACFCD shall implement and maintain the activity specific BMPs listed in Table 18 or equivalent set of BMPs for storm drain operation and maintenance.

(2) Ensure that all the material removed from the MS4 does not reenter the system. Solid material shall be dewatered in a contained area and liquid material shall be disposed in accordance with any of the following measures:

(a) Self-contain, and haul off for legal disposal; or

(b) Equip with a clarifier or an alternative pre-treatment device; and plumb to the sanitary sewer in accordance with applicable waste water provider regulations.

(3) Catch Basin Cleaning

(a) In areas that are not subject to a trash TMDL, the LACFCD shall determine priority areas and shall update its map or list of catch basins with their GPS coordinates and priority:

Priority A: Catch basins that are designated as consistently generating the highest volumes of trash and/or debris.

Priority B: Catch basins that are designated as consistently generating moderate volumes of trash and/or debris.

Priority C: Catch basins that are designated as generating low volumes of trash and/or debris.

The map or list shall contain the rationale or data to support priority designations.

(b) In areas not subject to a trash TMDL, the LACFCD shall inspect its catch basins according to the following schedule:

Priority A: A minimum of 3 times during the wet season (October 1 through April 15) and once during the dry season every year.

Priority B: A minimum of once during the wet season and once during the dry season every year.

Priority C: A minimum of once per year.

Catch basins shall be cleaned as necessary on the basis of inspections. At a minimum, LACFCD shall ensure that any catch basin that is determined to be at least 25% full of trash shall be cleaned out. LACFCD shall maintain inspection and cleaning records for Regional Water Board review.

(c) In areas that are subject to a trash TMDL, the subject Permittees shall implement the applicable provisions in Part VI.E.

(4) Catch Basin Labels and Open Channel Signage

(a) LACFCD shall label all catch basin inlets that they own with a legible “no dumping” message.

(b) The LACFCD shall inspect the legibility of the catch basin stencil or label nearest the inlet prior to the wet season every year.

(c) The LACFCD shall record all catch basins with illegible stencils and re-stencil or re-label within 180 days of inspection.

(d) The LACFCD shall post signs, referencing local code(s) that prohibit littering and illegal dumping, at designated public access points to open channels, creeks, urban lakes, and other relevant waterbodies.

(5) Open Channel Maintenance

The LACFCD shall implement a program for Open Channel Maintenance that includes the following:

(a) Visual monitoring of LACFCD owned open channels and other drainage structures for trash and debris at least annually;

(b) Removal of trash and debris from open channels a minimum of once per year before the wet season;

(c) Elimination of the discharge of contaminants produced by storm drain maintenance and clean outs; and

(d) Proper disposal of debris and trash removed during open channel maintenance.

(6) Infiltration from Sanitary Sewer to MS4/Preventive Maintenance

(a) The LACFCD shall implement controls and measures to prevent and eliminate infiltration of seepage from sanitary sewers to its MS4 thorough routine preventive maintenance of its MS4.

(b) The LACFCD shall implement controls to limit infiltration of seepage from sanitary sewers to its MS4 where necessary. Such controls must include:

(i) Adequate plan checking for construction and new development;

(ii) Incident response training for its employees that identify sanitary sewer spills;

(iii) Code enforcement inspections;

(iv) MS4 maintenance and inspections;

(v) Interagency coordination with sewer agencies; and

(vi) Proper education of its staff and contractors conducting field operations on its MS4.

(7) LACFCD-Owned Treatment Control BMPs

(a) The LACFCD shall implement an inspection and maintenance program for all LACFCD-owned treatment control BMPs, including post-construction treatment control BMPs.

(b) The LACFCD shall ensure proper operation of all its treatment control BMPs and maintain them as necessary for proper operation, including all post-construction treatment control BMPs.

(c) Any residual water produced by a treatment control BMP and not being internal to the BMP performance when being maintained shall be:

(i) Hauled away and legally disposed of; or

(ii) Applied to the land without runoff; or

(iii) Discharged to the sanitary sewer system (with permits or authorization); or

(iv) Treated or filtered to remove bacteria, sediments, nutrients, and meet the limitations set in Table 19 (Discharge Limitations for Dewatering Treatment BMPs), prior to discharge to the MS4.

viii. Parking Facilities Management

LACFCD-owned parking lots exposed to storm water shall be kept clear of debris and excessive oil buildup and cleaned no less than 2 times per month and/or inspected no less than 2 times per month to determine if cleaning is necessary. In no case shall a LACFCD-owned parking lot be cleaned less than once a month.

ix. Emergency Procedures

The LACFCD may conduct repairs and rehabilitation of essential public service systems and infrastructure in emergency situations with a self-waiver of the provisions of this Order as follows:

(1) The LACFCD shall abide by all other regulatory requirements, including notification to other agencies as appropriate.

(2) Where the self-waiver has been invoked, the LACFCD shall notify the Regional Water Board Executive Officer of the occurrence of the emergency no later than 30 business days after the situation of emergency has passed.

(3) Minor repairs of essential public service systems and infrastructure in emergency situations (that can be completed in less than one week) are not subject to the notification provisions. Appropriate BMPs to reduce the threat to water quality shall be implemented.

x. Employee and Contractor Training

(1) The LACFCD shall, no later than one year after Order adoption and annually thereafter before June 30, train all of their employees and contractors in targeted positions (whose interactions, jobs, and activities affect storm water quality) on the requirements of the overall storm water management program to:

(a) Promote a clear understanding of the potential for activities to pollute storm water.

(b) Identify opportunities to require, implement, and maintain appropriate BMPs in their line of work.

(2) The LACFCD shall, no later than one year after Order adoption and annually thereafter before June 30, train all of their employees and contractors who use or have the potential to use pesticides or fertilizers (whether or not they normally apply these as part of their work). Outside contractors can self-certify, providing they certify they have received all applicable training required in the Order and have documentation to that effect. Training programs shall address:

(a) The potential for pesticide-related surface water toxicity.

(b) Proper use, handling, and disposal of pesticides.

(c) Least toxic methods of pest prevention and control, including IPM.

(d) Reduction of pesticide use.

(3) The LACFCD shall require appropriate training of contractor employees in targeted positions as described above.

d. Illicit Connections and Illicit Discharge Elimination Program

i. General

(1) The LACFCD shall continue to implement an Illicit Connection and Illicit Discharge (IC/ID) Program to detect, investigate, and eliminate IC/IDs to its MS4. The IC/ID Program must be implemented in accordance with the requirements and performance measures specified in the following subsections.

(2) As stated in Part VI.A.2 of this Order, each Permittee must have adequate legal authority to prohibit IC/IDs to the MS4 and enable enforcement capabilities to eliminate the source of IC/IDs.

(3) The LACFCD's IC/ID Program shall consist of at least the following major program components:

(a) An up-to-date map of LACFCD's MS4

(b) Procedures for conducting source investigations for IC/IDs

(c) Procedures for eliminating the source of IC/IDs

(d) Procedures for public reporting of illicit discharges

(e) Spill response plan

(f) IC/IDs education and training for LACFCD staff

ii. MS4 Mapping

(1) The LACFCD shall maintain an up-to-date and accurate electronic map of its MS4. If possible, the map should be maintained within a GIS. The map must show the following, at a minimum:

(a) Within one year of Permit adoption, the location of outfalls owned and maintained by the LACFCD. Each outfall shall be given an alphanumeric identifier, which must be noted on the map. Each mapped outfall shall be located using a geographic positioning system (GPS). Photographs of the major outfalls shall be taken to provide baseline information to track operation and maintenance needs over time.

(b) The location and length of open channels and underground storm drain pipes with a diameter of 36 inches or greater that are owned and operated by the LACFCD.

(c) The location and name of all waterbodies receiving discharges from those MS4 major outfalls identified in (a).

(d) All LACFCD's dry weather diversions installed within the MS4 to direct flows from the MS4 to the sanitary sewer system, including the owner and operator of each diversion.

(e) By the end of the Permit term, map all known permitted and documented connections to its MS4 system.

(2) The MS4 map shall be updated as necessary.

iii. Illicit Discharge Source Investigation and Elimination

(1) The LACFCD shall develop written procedures for conducting investigations to prioritize and identify the source of all illicit discharges to its MS4, including procedures to eliminate the discharge once the source is located.

(2) At a minimum, the LACFCD shall initiate[23] an investigation(s) to identify and locate the source within one business day of becoming aware of the illicit discharge.

(3) When conducting investigations, the LACFCD shall comply with the following:

(a) Illicit discharges suspected of being sanitary sewage and/or significantly contaminated shall be investigated first.

(b) The LACFCD shall track all investigations to document, at a minimum, the date(s) the illicit discharge was observed; the results

[23] Permittees may comply with the Permit by taking initial steps (such as logging, prioritizing, and tasking) to "initiate" the investigation within one business day. However, the Regional Water Board would expect that the initial investigation, including a site visit, occur within two business days of becoming aware of the illicit discharge.

of the investigation; any follow-up of the investigation; and the date the investigation was closed.

(c) The LACFCD shall prioritize and investigate the source of all observed illicit discharges to its MS4.

(d) If the source of the illicit discharge is found to be a discharge authorized under an NPDES permit, the LACFCD shall document the source and report to the Regional Water Board within 30 days of determination. No further action is required.

(e) If the source of the illicit discharge has been determined to originate from within the jurisdiction of other Permittee(s) with land use authority over the suspected responsible party/parties, the LACFCD shall immediately alert the appropriate Permittee(s) of the problem for further action by the Permittee(s).

(4) When taking corrective action to eliminate illicit discharges, the LACFCD shall comply with the following:

(a) If the source of the illicit discharge has been determined or suspected by the LACFCD to originate within an upstream jurisdiction(s), the LACFCD shall immediately notify the upstream jurisdiction(s), and notify the Regional Water Board within 30 days of such determination and provide all the information collected and efforts taken.

(b) Once the Permittee with land use authority over the suspected responsible party/parties has been alerted, the LACFCD may continue to work in cooperation with the Permittee(s) to notify the responsible party/parties of the problem, and require the responsible party/parties to immediately initiate necessary corrective actions to eliminate the illicit discharge. Upon being notified that the discharge has been eliminated, the LACFCD may, in conjunction with the Permittee(s) conduct a follow-up investigation to verify that the discharge has been eliminated and cleaned up to the satisfaction of the LACFCD. The LACFCD shall document its follow-up investigation. The LACFCD may seek recovery and remediation costs from responsible parties or require compensation for the cost of all inspection and investigation activities. Resulting enforcement actions shall follow the program's Progressive Enforcement Policy.

(c) If the source of the illicit discharge cannot be traced to a suspected responsible party, the LACFCD, in conjunction with other affected Permittees, shall continue implementing the illicit discharge/spill response plan.

(5) In the event the LACFCD and/or other Permittees are unable to eliminate an ongoing illicit discharge following full execution of its legal authority and in accordance with its Progressive Enforcement Policy, including the inability to find the responsible party/parties, or other circumstances prevent the full elimination of an ongoing illicit discharge, the LACFCD and/or other Permittees shall notify the Regional Water Board within 30 days of such determination and provide available information to the Regional Water Board.

iv. Identification and Response to Illicit Connections

(1) Investigation

The LACFCD, upon discovery or upon receiving a report of a suspected illicit connection, shall initiate an investigation within 21 days, to determine the following: (1) source of the connection, (2) nature and volume of discharge through the connection, and (3) responsible party for the connection.

(2) Elimination

The LACFCD, upon confirmation of an illicit connection to its MS4, shall ensure that the connection is:

(a) Permitted or documented, provided the connection will only discharge storm water and non-storm water allowable under this Order or other individual or general NPDES Permits/WDRs, or

(b) Eliminated within 180 days of completion of the investigation, using its formal enforcement authority, if necessary, to eliminate the illicit connection.

(3) Documentation

Formal records must be maintained for all illicit connection investigations and the formal enforcement taken to eliminate illicit connections.

v. Public Reporting of Non-Stormwater Discharges and Spills

(1) The LACFCD shall, in collaboration with the County, continue to maintain the 888-CLEAN-LA hotline and corresponding internet site at www.888cleanla.org to promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s.

(2) The LACFCD shall include information regarding public reporting of illicit discharges or improper disposal on the signage adjacent to open channels as required in Part VI.D.9.h.vi.(4).

(3) The LACFCD shall develop and maintain written procedures that document how complaint calls and internet submissions are received, documented, and tracked to ensure that all complaints are adequately addressed. The procedures shall be evaluated annually to determine whether changes or updates are needed to ensure that the procedures accurately document the methods employed by the LACFCD. Any identified changes shall be made to the procedures subsequent to the annual evaluation.

(4) The LACFCD shall maintain documentation of the complaint calls and internet submissions and record the location of the reported spill or IC/ID and the actions undertaken, including referrals to other agencies, in response to all IC/ID complaints.

vi. Illicit Discharge and Spill Response Plan

(1) The LACFCD shall implement an ID and spill response plan for all spills that may discharge into its system. The ID and spill response plan shall clearly identify agencies responsible for ID and spill response and cleanup, contact information, and shall contain at a minimum the following requirements:

(a) Coordination with spill response teams throughout all appropriate departments, programs and agencies so that maximum water quality protection is provided.

(b) Initiation of investigation of all public and employee ID and spill complaints within one business day of receiving the complaint to assess validity.

(c) Response to ID and spills within 4 hours of becoming aware of the ID or spill, except where such IDs or spills occur on private property, in which case the response should be within 2 hours of gaining legal access to the property.

(d) IDs or spills that may endanger health or the environment shall be reported to appropriate public health agencies and the Office of Emergency Services (OES).

vii. Illicit Connection and Illicit Discharge Education and Training

(1) The LACFCD must continue to implement a training program regarding the identification of IC/IDs for all LACFCD field staff, who, as part of their normal job responsibilities (e.g., storm drain inspection and maintenance), may come into contact with or otherwise observe an illicit discharge or illicit connection to its MS4. Contact information, including the procedure for reporting an illicit discharge, must be included in the LACFCD's fleet vehicles that are used by field staff. Training program documents must be available for review by the Regional Water Board.

(2) The LACFCD's training program should address, at a minimum, the following:

(a) IC/ID identification, including definitions and examples,

(b) investigation,

(c) elimination,

(d) cleanup,

(e) reporting, and

(f) documentation.

(3) The LACFCD must create a list of applicable positions which require IC/ID training and ensure that training is provided at least twice during the term of this Order. The LACFCD must maintain documentation of the training activities.

(4) New LACFCD staff members must be provided with IC/ID training within 180 days of starting employment.

(5) The LACFCD shall require its contractors to train their employees in targeted positions as described above.

5. Public Information and Participation Program

a. General

i. Each Permittee shall implement a Public Information and Participation Program (PIPP) that includes the requirements listed in this Part VI.D.5. Each Permittee shall be responsible for developing and implementing the PIPP and implementing specific PIPP requirements. The objectives of the PIPP are as follows:

(1) To measurably increase the knowledge of the target audiences about the MS4, the adverse impacts of storm water pollution on receiving waters and potential solutions to mitigate the impacts.

(2) To measurably change the waste disposal and storm water pollution generation behavior of target audiences by developing and encouraging the implementation of appropriate alternatives.

(3) To involve and engage a diversity of socio-economic groups and ethnic communities in Los Angeles County to participate in mitigating the impacts of storm water pollution.

b. PIPP Implementation

i. Each Permittee shall implement the PIPP requirements listed in this Part VI.D.4 using one or more of the following approaches:

(1) By participating in a County-wide PIPP,

(2) By participating in one or more Watershed Group sponsored PIPPs, and/or

(3) Or individually within its jurisdiction.

ii. If a Permittee participates in a County-wide or Watershed Group PIPP, the Permittee shall provide the contact information for their appropriate staff responsible for storm water public education activities to the designated PIPP coordinator and contact information changes no later than 30 days after a change occurs.

c. Public Participation

i. Each Permittee, whether participating in a County-wide or Watershed Group sponsored PIPP, or acting individually, shall provide a means for public reporting of clogged catch basin inlets and illicit discharges/dumping, faded or missing catch basin labels, and general storm water and non-storm water pollution prevention information.

(1) Permittees may elect to use the 888-CLEAN-LA hotline as the general public reporting contact or each Permittee or Watershed Group may establish its own hotline, if preferred.

(2) Each Permittee shall include the reporting information, updated when necessary, in public information, and the government pages of the telephone book, as they are developed or published.

(3) Each Permittee shall identify staff or departments who will serve as the contact person(s) and shall make this information available on its website.

(4) Each Permittee is responsible for providing current, updated hotline contact information to the general public within its jurisdiction.

ii. Organize events targeted to residents and population subgroups to educate and involve the community in storm water and non-storm water pollution prevention and clean-up (e.g., education seminars, clean-ups, and community catch basin stenciling).

d. Residential Outreach Program

i. Working in conjunction with a County-wide or Watershed Group sponsored PIPP or individually, each Permittee shall implement the following activities:

(1) Conduct storm water pollution prevention public service announcements and advertising campaigns

(2) Public education materials shall include but are not limited to information on the proper handling (i.e., disposal, storage and/or use) of:

(a) Vehicle waste fluids

(b) Household waste materials (i.e., trash and household hazardous waste, including personal care products and pharmaceuticals)

(c) Construction waste materials

(d) Pesticides and fertilizers (including integrated pest management practices [IPM] to promote reduced use of pesticides)

(e) Green waste (including lawn clippings and leaves)

(f) Animal wastes

(3) Distribute activity specific storm water pollution prevention public education materials at, but not limited to, the following points of purchase:

(a) Automotive parts stores

(b) Home improvement centers / lumber yards / hardware stores/paint stores

(c) Landscaping / gardening centers

(d) Pet shops / feed stores

(4) Maintain storm water websites or provide links to storm water websites via the Permittee's website, which shall include educational material and opportunities for the public to participate in storm water pollution prevention and clean-up activities listed in Part VI.D.4.

(5) Provide independent, parochial, and public schools within in each Permittee's jurisdiction with materials to educate school children (K-12) on storm water pollution. Material may include videos, live presentations, and other information. Permittees are encouraged to work with, or leverage, materials produced by other statewide agencies and associations such as the State Water Board's "Erase the Waste" educational program and the California Environmental Education Interagency Network (CEEIN) to implement this requirement.

(6) When implementing activities in subsections (1)-(5), Permittees shall use effective strategies to educate and involve ethnic communities in storm water pollution prevention through culturally effective methods.

6. Industrial/Commercial Facilities Program

a. General

i. Each Permittee shall implement an Industrial / Commercial Facilities Program that meets the requirements of this Part VI.D.6. The Industrial / Commercial

Facilities Program shall be designed to prevent illicit discharges into the MS4 and receiving waters, reduce industrial / commercial discharges of storm water to the maximum extent practicable, and prevent industrial / commercial discharges from the MS4 from causing or contributing to a violation of receiving water limitations. At a minimum, the Industrial / Commercial Facilities Program shall be implemented in accordance with the requirements listed in this Part VI.D.6, or as approved in a Watershed Management Program per Part VI.C. Minimum program components shall include the following components:

(1) Track

(2) Educate

(3) Inspect

(4) Ensure compliance with municipal ordinances at industrial and commercial facilities that are critical sources of pollutants in storm water

b. Track Critical Industrial / Commercial Sources

i. Each Permittee shall maintain an updated watershed-based inventory or database containing the latitude / longitude coordinates of all industrial and commercial facilities within its jurisdiction that are critical sources of storm water pollution. The inventory or database shall be maintained in electronic format and incorporation of facility information into a Geographical Information System (GIS) is recommended. Critical Sources to be tracked are summarized below:

(1) Commercial Facilities

(a) Restaurants

(b) Automotive service facilities (including those located at automotive dealerships)

(c) Retail Gasoline Outlets

(d) Nurseries and Nursery Centers (Merchant Wholesalers, Nondurable Goods, and Retail Trade)

(2) USEPA “Phase I” Facilities [as specified in 40 CFR §122.26(b)(14)(i)-(xi)]

(3) Other federally-mandated facilities [as specified in 40 CFR §122.26(d)(2)(iv)(C)]

(a) Municipal landfills

(b) Hazardous waste treatment, disposal, and recovery facilities

(c) Industrial facilities subject to section 313 “Toxic Release Inventory” reporting requirements of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) [42 U.S.C. § 11023]

(4) All other commercial or industrial facilities that the Permittee determines may contribute a substantial pollutant load to the MS4.

ii. Each Permittee shall include the following minimum fields of information for each critical source industrial and commercial facility identified in its watershed-based inventory or database:

(1) Name of facility

(2) Name of owner/ operator and contact information

(3) Address of facility (physical and mailing)

(4) North American Industry Classification System (NAICS) code

(5) Standard Industrial Classification (SIC) code

(6) A narrative description of the activities performed and/or principal products produced

(7) Status of exposure of materials to storm water

(8) Name of receiving water

(9) Identification of whether the facility is tributary to a CWA § 303(d) listed water body segment or water body segment subject to a TMDL, where the facility generates pollutants for which the water body segment is impaired.

(10) Ability to denote if the facility is known to maintain coverage under the State Water Board's General NPDES Permit for the Discharge of Stormwater Associated with Industrial Activities (Industrial General Permit) or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.

(11) Ability to denote if the facility has filed a No Exposure Certification with the State Water Board.

iii. Each Permittee shall update its inventory of critical sources at least annually. The update shall be accomplished through collection of new information obtained through field activities or through other readily available inter- and intra-agency informational databases (e.g., business licenses, pretreatment permits, sanitary sewer connection permits, and similar information).

c. Educate Industrial / Commercial Sources

i. At least once during the five-year period of this Order, each Permittee shall notify the owner/operator of each of its inventoried commercial and industrial sites identified in Part VI.D.6.b of the BMP requirements applicable to the site/source.

ii. Business Assistance Program

(1) Each Permittee shall implement a Business Assistance Program to provide technical information to businesses to facilitate their efforts to reduce the discharge of pollutants in storm water. Assistance shall be targeted to select business sectors or small businesses upon a determination that their activities may be contributing substantial pollutant

loads to the MS4 or receiving water. Assistance may include technical guidance and provision of educational materials. The Program may include:

(a) On-site technical assistance, telephone, or e-mail consultation regarding the responsibilities of business to reduce the discharge of pollutants, procedural requirements, and available guidance documents.

(b) Distribution of storm water pollution prevention educational materials to operators of auto repair shops; car wash facilities; restaurants and mobile sources including automobile/equipment repair, washing, or detailing; power washing services; mobile carpet, drape, or upholstery cleaning services; swimming pool, water softener, and spa services; portable sanitary services; and commercial applicators and distributors of pesticides, herbicides and fertilizers, if present.

d. Inspect Critical Commercial Sources

i. Frequency of Mandatory Commercial Facility Inspections

Each Permittee shall inspect all commercial facilities identified in Part VI.D.6.b twice during the 5-year term of the Order, provided that the first mandatory compliance inspection occurs no later than 2 years after the effective date of this Order. A minimum interval of 6 months between the first and the second mandatory compliance inspection is required. In addition, each Permittee shall implement the activities outlined in the following subparts.

ii. Scope of Mandatory Commercial Facility Inspections

Each Permittee shall inspect all commercial facilities to confirm that storm water and non-storm water BMPs are being effectively implemented in compliance with municipal ordinances. At each facility, inspectors shall verify that the operator is implementing effective source control BMPs for each corresponding activity. Each Permittee shall require implementation of additional BMPs where storm water from the MS4 discharges to a significant ecological area (SEA), a water body subject to TMDL provisions in Part VI.E, or a CWA § 303(d) listed impaired water body. Likewise, for those BMPs that are not adequately protective of water quality standards, a Permittee may require additional site-specific controls.

e. Inspect Critical Industrial Sources

Each Permittee shall conduct industrial facility compliance inspections as specified below.

i. Frequency of Mandatory Industrial Facility Compliance Inspections

(1) Minimum Inspection Frequency

Each Permittee shall perform an initial mandatory compliance inspection at all industrial facilities identified in Part VI.D.6.b no later than 2 years after the effective date of this Order. After the initial inspection, all

facilities that have not filed a No Exposure Certification with the State Water Board are subject to a second mandatory compliance inspection. A minimum interval of 6 months between the first and the second mandatory compliance inspection is required. A facility need not be inspected more than twice during the term of the Order unless subject to an enforcement action as specified in Part VI.D.6.h below.

(2) Exclusion of Facilities Previously Inspected by the Regional Water Board

Each Permittee shall review the State Water Board's Storm Water Multiple Application and Report Tracking System (SMARTS) database[24] at defined intervals to determine if an industrial facility has recently been inspected by the Regional Water Board. The first interval shall occur approximately 2 years after the effective date of the Order. The Permittee does not need to inspect the facility if it is determined that the Regional Water Board conducted an inspection of the facility within the prior 24 month period. The second interval shall occur approximately 4 years after the effective date of the Order. Likewise, the Permittee does not need to inspect the facility if it is determined that the Regional Water Board conducted an inspection of the facility within the prior 24 month period.

(3) No Exposure Verification

As a component of the first mandatory inspection, each Permittee shall identify those facilities that have filed a No Exposure Certification with the State Water Board. Approximately 3 to 4 years after the effective date of the Order, each Permittee shall evaluate its inventory of industrial facilities and perform a second mandatory compliance inspection at a minimum of 25% of the facilities identified to have filed a No Exposure Certification. The purpose of this inspection is to verify the continuity of the no exposure status.

(4) Exclusion Based on Watershed Management Program

A Permittee is exempt from the mandatory inspection frequencies listed above if it is implementing industrial inspections in accordance with an approved Watershed Management Program per Part VI.C.

ii. Scope of Mandatory Industrial Facility Inspections

Each Permittee shall confirm that each industrial facility:

(1) Has a current Waste Discharge Identification (WDID) number for coverage under the Industrial General Permit, and that a Storm Water Pollution Prevention Plan (SWPPP) is available on-site; ***or***

(2) Has applied for, and has received a current No Exposure Certification for facilities subject to this requirement;

(3) Is effectively implementing BMPs in compliance with municipal ordinances. Facilities must implement the source control BMPs identified

[24] SMARTS is accessible at https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp

in Table 10, unless the pollutant generating activity does not occur. The Permittees shall require implementation of additional BMPs where storm water from the MS4 discharges to a water body subject to TMDL Provisions in Part VI.E, or a CWA § 303(d) listed impaired water body. Likewise, if the specified BMPs are not adequately protective of water quality standards, a Permittee may require additional site-specific controls. For critical sources that discharge to MS4s that discharge to SEAs, each Permittee shall require operators to implement additional pollutant-specific controls to reduce pollutants in storm water runoff that are causing or contributing to exceedances of water quality standards.

(4) Applicable industrial facilities identified as not having either a current WDID or No Exposure Certification shall be notified that they must obtain coverage under the Industrial General Permit and shall be referred to the Regional Water Board per the Progressive Enforcement Policy procedures identified in Part VI.D.2.

f. Source Control BMPs for Commercial and Industrial Facilities

Effective source control BMPs for the activities listed in Table 10 shall be implemented at commercial and industrial facilities, unless the pollutant generating activity does not occur:

Table 10. Source Control BMPs at Commercial and Industrial Facilities

Pollutant-Generating Activity	BMP Narrative Description
Unauthorized Non-Storm water Discharges	Effective elimination of non-storm water discharges
Accidental Spills/ Leaks	Implementation of effective spills/ leaks prevention and response procedures
Vehicle/ Equipment Fueling	Implementation of effective fueling source control devices and practices
Vehicle/ Equipment Cleaning	Implementation of effective equipment/ vehicle cleaning practices and appropriate wash water management practices
Vehicle/ Equipment Repair	Implementation of effective vehicle/ equipment repair practices and source control devices
Outdoor Liquid Storage	Implementation of effective outdoor liquid storage source controls and practices
Outdoor Equipment Operations	Implementation of effective outdoor equipment source control devices and practices
Outdoor Storage of Raw Materials	Implementation of effective source control practices and structural devices
Storage and Handling of Solid Waste	Implementation of effective solid waste storage/ handling practices and appropriate control measures
Building and Grounds Maintenance	Implementation of effective facility maintenance practices

Pollutant-Generating Activity	BMP Narrative Description
Parking/ Storage Area Maintenance	Implementation of effective parking/ storage area designs and housekeeping/ maintenance practices
Storm water Conveyance System Maintenance Practices	Implementation of proper conveyance system operation and maintenance protocols
Pollutant-Generating Activity	**BMP Narrative Description from Regional Water Board Resolution No. 98-08**
Sidewalk Washing	**1.** Remove trash, debris, and free standing oil/grease spills/leaks (use absorbent material, if necessary) from the area before washing; and **2.** Use high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area.
Street Washing	Collect and divert wash water to the sanitary sewer – publically owned treatment works (POTW). Note: POTW approval may be needed.

g. Significant Ecological Areas (SEAs)

See VI.D.6.e.ii.3.

h. Progressive Enforcement

Each Permittee shall implement its Progressive Enforcement Policy to ensure that Industrial / Commercial facilities are brought into compliance with all storm water requirements within a reasonable time period. See Part VI.D.2 for requirements for the development and implementation of a Progressive Enforcement Policy.

7. Planning and Land Development Program

a. Purpose

i. Each Permittee shall implement a Planning and Land Development Program pursuant to Part VI.D.7.b for all New Development and Redevelopment projects subject to this Order to:

(1) Lessen the water quality impacts of development by using smart growth practices such as compact development, directing development towards existing communities via infill or redevelopment, and safeguarding of environmentally sensitive areas.

(2) Minimize the adverse impacts from storm water runoff on the biological integrity of Natural Drainage Systems and the beneficial uses of water

bodies in accordance with requirements under CEQA (Cal. Pub. Resources Code § 21000 et seq.).

(3) Minimize the percentage of impervious surfaces on land developments by minimizing soil compaction during construction, designing projects to minimize the impervious area footprint, and employing Low Impact Development (LID) design principles to mimic predevelopment hydrology through infiltration, evapotranspiration and rainfall harvest and use.

(4) Maintain existing riparian buffers and enhance riparian buffers when possible.

(5) Minimize pollutant loadings from impervious surfaces such as roof tops, parking lots, and roadways through the use of properly designed, technically appropriate BMPs (including Source Control BMPs such as good housekeeping practices), LID Strategies, and Treatment Control BMPs.

(6) Properly select, design and maintain LID and Hydromodification Control BMPs to address pollutants that are likely to be generated, reduce changes to pre-development hydrology, assure long-term function, and avoid the breeding of vectors[25].

(7) Prioritize the selection of BMPs to remove storm water pollutants, reduce storm water runoff volume, and beneficially use storm water to support an integrated approach to protecting water quality and managing water resources in the following order of preference:

(a) On-site infiltration, bioretention and/or rainfall harvest and use.

(b) On-site biofiltration, off-site ground water replenishment, and/or off-site retrofit.

b. Applicability

i. New Development Projects

(1) Development projects subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate storm water pollution, prior to completion of the project(s), are:

(a) All development projects equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious surface area

(b) Industrial parks 10,000 square feet or more of surface area

(c) Commercial malls 10,000 square feet or more surface area

(d) Retail gasoline outlets 5,000 square feet or more of surface area

(e) Restaurants (SIC 5812) 5,000 square feet or more of surface area

[25] Treatment BMPs when designed to drain within 96 hours of the end of rainfall minimize the potential for the breeding of vectors. See California Department of Public Health ***Best Management Practices for Mosquito Control in California*** (2012) at http://www.westnile.ca.gov/resources.php

(f) Parking lots 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces

(g) Street and road construction of 10,000 square feet or more of impervious surface area shall follow USEPA guidance regarding Managing Wet Weather with Green Infrastructure: Green Streets[26] (December 2008 EPA-833-F-08-009) to the maximum extent practicable. Street and road construction applies to standalone streets, roads, highways, and freeway projects, and also applies to streets within larger projects.

(h) Automotive service facilities (SIC 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) 5,000 square feet or more of surface area

(i) Redevelopment projects in subject categories that meet Redevelopment thresholds identified in Part VI.D.6.b.ii (Redevelopment Projects) below

(j) Projects located in or directly adjacent to, or discharging directly to a Significant Ecological Area (SEA), where the development will:

(i) Discharge storm water runoff that is likely to impact a sensitive biological species or habitat; and

(ii) Create 2,500 square feet or more of impervious surface area

(k) Single-family hillside homes. To the extent that a Permittee may lawfully impose conditions, mitigation measures or other requirements on the development or construction of a single-family home in a hillside area as defined in the applicable Permittee's Code and Ordinances, each Permittee shall require that during the construction of a single-family hillside home, the following measures are implemented:

(i) Conserve natural areas

(ii) Protect slopes and channels

(iii) Provide storm drain system stenciling and signage

(iv) Divert roof runoff to vegetated areas before discharge unless the diversion would result in slope instability

(v) Direct surface flow to vegetated areas before discharge unless the diversion would result in slope instability.

ii. Redevelopment Projects

(1) Redevelopment projects subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate storm water pollution, prior to completion of the project(s), are:

(a) Land-disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area

[26] http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm

on an already developed site on development categories identified in Part VI.D.6.c. (New Development/Redevelopment Performance Criteria).

(b) Where Redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction storm water quality control requirements, the entire project must be mitigated.

(c) Where Redevelopment results in an alteration of less than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction storm water quality control requirements, only the alteration must be mitigated, and not the entire development.

(i) Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of facility or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and roadways which does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Redevelopment does not include the repaving of existing roads to maintain original line and grade.

(ii) Existing single-family dwelling and accessory structures are exempt from the Redevelopment requirements unless such projects create, add, or replace 10,000 square feet of impervious surface area.

(d) In this section, Existing Development or Redevelopment projects shall mean all discretionary permit projects or project phases that have not been deemed complete for processing, or discretionary permit projects without vesting tentative maps that have not requested and received an extension of previously granted approvals within 90 days of adoption of the Order. Projects that have been deemed complete within 90 days of adoption of the Order are not subject to the requirements Section 7.c. For Permittee's projects the effective date shall be the date the governing body or their designee approves initiation of the project design.

(e) Specifically, the Newhall Ranch Project Phases I and II (a.k.a. the Landmark and Mission Village projects) are deemed to be an existing development that will at a minimum, be designed to comply with the Specific LID Performance Standards attached to the Waste Discharge Requirements (Order No. R4-2012-0139). All subsequent phases of the Newhall Ranch Project constructed during the term of this Order shall be subject to the requirements of this Order.

c. New Development/ Redevelopment Project Performance Criteria

i. Integrated Water Quality/Flow Reduction/Resources Management Criteria

(1) Each Permittee shall require all New Development and Redevelopment projects (referred to hereinafter as "new projects") identified in Part VI.D.7.b to control pollutants, pollutant loads, and runoff volume emanating from the project site by: (1) minimizing the impervious surface area and (2) controlling runoff from impervious surfaces through infiltration, bioretention and/or rainfall harvest and use.

(2) Except as provided in Part VI.D.7.c.ii. (Technical Infeasibility or Opportunity for Regional Ground Water Replenishment), Part VI.D.7.d.i (Local Ordinance Equivalence), or Part VI.D.7.c.v (Hydromodification), below, each Permittee shall require the project to retain on-site the Stormwater Quality Design Volume (SWQDv) defined as the runoff from:

(a) The 0.75-inch, 24-hour rain event or

(b) The 85th percentile, 24-hour rain event, as determined from the Los Angeles County 85th percentile precipitation isohyetal map, ***whichever is greater***.

(3) Bioretention and biofiltration systems shall meet the design specifications provided in Attachment H to this Order unless otherwise approved by the Regional Water Board Executive Officer.

(4) When evaluating the potential for on-site retention, each Permittee shall consider the maximum potential for evapotranspiration from green roofs and rainfall harvest and use.

ii. Alternative Compliance for Technical Infeasibility or Opportunity for Regional Ground Water Replenishment

(1) In instances of technical infeasibility or where a project has been determined to provide an opportunity to replenish regional ground water supplies at an offsite location, each Permittee may allow projects to comply with this Order through the alternative compliance measures as described in Part VI.D.7.c.iii.

(2) To demonstrate technical infeasibility, the project applicant must demonstrate that the project cannot reliably retain 100 percent of the SWQDv on-site, even with the maximum application of green roofs and rainwater harvest and use, and that compliance with the applicable post-construction requirements would be technically infeasible by submitting a site-specific hydrologic and/or design analysis conducted and endorsed by a registered professional engineer, geologist, architect, and/or landscape architect. Technical infeasibility may result from conditions including the following:

(a) The infiltration rate of saturated in-situ soils is less than 0.3 inch per hour and it is not technically feasible to amend the in-situ soils to attain an infiltration rate necessary to achieve reliable performance of infiltration or bioretention BMPs in retaining the SWQDv on-site.

(b) Locations where seasonal high ground water is within 5 to 10 feet of the surface,

(c) Locations within 100 feet of a ground water well used for drinking water,

(d) Brownfield development sites where infiltration poses a risk of causing pollutant mobilization,

(e) Other locations where pollutant mobilization is a documented concern[27],

(f) Locations with potential geotechnical hazards, or

(g) Smart growth and infill or redevelopment locations where the density and/ or nature of the project would create significant difficulty for compliance with the on-site volume retention requirement.

(3) To utilize alternative compliance measures to replenish ground water at an offsite location, the project applicant shall demonstrate ***(i)*** why it is not advantageous to replenish ground water at the project site, ***(ii)*** that ground water can be used for beneficial purposes at the offsite location, and ***(iii)*** that the alternative measures shall also provide equal or greater water quality benefits to the receiving surface water than the Water Quality/Flow Reduction/Resource Management Criteria in Part VI.7.D.c.i.

iii. Alternative Compliance Measures

When a Permittee determines a project applicant has demonstrated that it is technically infeasible to retain 100 percent of the SWQDv on-site, or is proposing an alternative offsite project to replenish regional ground water supplies, the Permittee shall require one of the following mitigation options:

(1) On-site Biofiltration

(a) If using biofiltration due to demonstrated technical infeasibility, then the new project must biofiltrate 1.5 times the portion of the SWQDv that is not reliably retained on-site, as calculated by Equation 1 below.

Equation 1:

$$Bv = 1.5 * [SWQDv - Rv]$$

Where:

Bv = biofiltration volume

[27] Pollutant mobilization is considered a documented concern at or near properties that are contaminated or store hazardous substances underground.

SWQDv = the storm water runoff from a 0.75 inch, 24-hour storm or the 85th percentile storm, ***whichever is greater***.

Rv = volume reliably retained on-site

(b) Conditions for On-site Biofiltration

(i) Biofiltration systems shall meet the design specifications provided in Attachment H to this Order unless otherwise approved by the Regional Water Board Executive Officer.

(ii) Biofiltration systems discharging to a receiving water that is included on the Clean Water Act section 303(d) list of impaired water quality-limited water bodies due to nitrogen compounds or related effects shall be designed and maintained to achieve enhanced nitrogen removal capability. See Attachment H for design criteria for underdrain placement to achieve enhanced nitrogen removal.

(2) Offsite Infiltration

(a) Use infiltration or bioretention BMPs to intercept a volume of storm water runoff equal to the SWQDv, less the volume of storm water runoff reliably retained on-site, at an approved offsite project, and

(b) Provide pollutant reduction (treatment) of the storm water runoff discharged from the project site in accordance with the Water Quality Mitigation Criteria provided in Part VI.D.7.c.iv.

(c) The required offsite mitigation volume shall be calculated by Equation 2 below and equal to:

Equation 2:

$$Mv = 1.0 * [SWQDv - Rv]$$

Where:

Mv = mitigation volume

SWQDv = runoff from the 0.75 inch, 24-hour storm event or the 85th percentile storm, ***whichever is greater***

Rv = the volume of storm water runoff reliably retained on-site.

(3) Ground Water Replenishment Projects

Permittees may propose, in their Watershed Management Program or EWMP, regional projects to replenish regional ground water supplies at offsite locations, provided the groundwater supply has a designated beneficial use in the Basin Plan.

(a) Regional groundwater replenishment projects must use infiltration, ground water replenishment, or bioretention BMPs to intercept a volume of storm water runoff equal to the SWQDv for new development and redevelopment projects, subject to Permittee conditioning and approval for the design and implementation of post-construction controls, within the approved project area, and

(b) Provide pollutant reduction (treatment) of the storm water runoff discharged from development projects, within the project area, subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate storm water pollution in accordance with the Water Quality Mitigation Criteria provided in Part VI.D.7.c.iv.

(c) Permittees implementing a regional ground water replenishment project in lieu of onsite controls shall ensure the volume of runoff captured by the project shall be equal to:

Equation 2:

$$Mv = 1.0 * [SWQDv - Rv]$$

Where:

Mv = mitigation volume

SWQDv = runoff from the 0.75 inch, 24-hour storm event or the 85th percentile storm, whichever is greater

Rv = the volume of storm water runoff reliably retained on-site.

(d) Regional groundwater replenishment projects shall be located in the same sub-watershed (defined as draining to the same HUC-12 hydrologic area in the Basin Plan) as the new development or redevelopment projects which did not implement on site retention BMPs . Each Permittee may consider locations outside of the HUC-12 but within the HUC-10 subwatershed area if there are no opportunities within the HUC-12 subwatershed or if greater pollutant reductions and/or ground water replenishment can be achieved at a location within the expanded HUC-10 subwatershed. The use of a mitigation, ground water replenishment, or retrofit project outside of the HUC-12 subwatershed is subject to the approval of the Executive Officer of the Regional Water Board.

(4) Offsite Project - Retrofit Existing Development

Use infiltration, bioretention, rainfall harvest and use and/or biofiltration BMPs to retrofit an existing development, with similar land uses as the new development or land uses associated with comparable or higher storm water runoff event mean concentrations (EMCs) than the new development.

Comparison of EMCs for different land uses shall be based on published data from studies performed in southern California. The retrofit plan shall be designed and constructed to:

(a) Intercept a volume of storm water runoff equal to the mitigation volume (Mv) as described above in Equation 2, except biofiltration BMPs shall be designed to meet the biofiltration volume as described in Equation 1 and

(b) Provide pollutant reduction (treatment) of the storm water runoff from the project site as described in the Water Quality Mitigation Criteria provided in Part VI.D.7.c.iv.

(5) Conditions for Offsite Projects

(a) Project applicants seeking to utilize these alternative compliance provisions may propose other offsite projects, which the Permittees may approve if they meet the requirements of this subpart.

(b) Location of offsite projects. Offsite projects shall be located in the same sub-watershed (defined as draining to the same HUC-12 hydrologic area in the Basin Plan) as the new development or redevelopment project. Each Permittee may consider locations outside of the HUC-12 but within the HUC-10 subwatershed area if there are no opportunities within the HUC-12 subwatershed or if greater pollutant reductions and/or ground water replenishment can be achieved at a location within the expanded HUC-10 subwatershed. The use of a mitigation, ground water replenishment, or retrofit project outside of the HUC-12 subwatershed is subject to the approval of the Executive Officer of the Regional Water Board.

(c) Project applicant must demonstrate that equal benefits to ground water recharge cannot be met on the project site.

(d) Each Permittee shall develop a prioritized list of offsite mitigation, ground water replenishment and/or retrofit projects, and when feasible, the mitigation must be directed to the highest priority project within the same HUC-12 or if approved by the Regional Water Board Executive Officer, the HUC-10 drainage area, as the new development project.

(e) Infiltration/bioretention shall be the preferred LID BMP for offsite mitigation or ground water replenishment projects. Offsite retrofit projects may include green streets, parking lot retrofits, green roofs, and rainfall harvest and use. Biofiltration BMPs may be considered for retrofit projects when infiltration, bioretention or rainfall harvest and use is technically infeasible.

(f) Each Permittee shall develop a schedule for the completion of offsite projects, including milestone dates to identify, fund, design, and construct the projects. Offsite projects shall be completed as soon as possible, and at the latest, within 4 years of the certificate of occupancy for the first project that contributed funds toward the

construction of the offsite project, unless a longer period is otherwise authorized by the Executive Officer of the Regional Water Board. For public offsite projects, each Permittee must provide in their annual reports a summary of total offsite project funds raised to date and a description (including location, general design concept, volume of water expected to be retained, and total estimated budget) of all pending public offsite projects. Funding sufficient to address the offsite volume must be transferred to the Permittee (for public offsite mitigation projects) or to an escrow account (for private offsite mitigation projects) within one year of the initiation of construction.

(g) Offsite projects must be approved by the Permittee and may be subject to approval by the Regional Water Board Executive Officer, if a third-party petitions the Executive Officer to review the project. Offsite projects will be publicly noticed on the Regional Water Board's website for 30 days prior to approval.

(h) The project applicant must perform the offsite projects as approved by either the Permittee or the Regional Water Board Executive Officer or provide sufficient funding for public or private offsite projects to achieve the equivalent mitigation storm water volume.

(6) Regional Storm Water Mitigation Program

A Permittee or Permittee group may apply to the Regional Water Board for approval of a regional or sub-regional storm water mitigation program to substitute in part or wholly for New and Redevelopment requirements for the area covered by the regional or sub-regional storm water mitigation program. Upon review and a determination by the Regional Water Board Executive Officer that the proposal is technically valid and appropriate, the Regional Water Board may consider for approval such a program if its implementation meets all of the following requirements:

(a) Retains the runoff from the 85th percentile, 24-hour rain event or the 0.75 inch, 24-hour rain event, whichever is greater;
(b) Results in improved storm water quality;
(c) Protects stream habitat;
(d) Promotes cooperative problem solving by diverse interests;
(e) Is fiscally sustainable and has secure funding; and
(f) Is completed in five years including the construction and start-up of treatment facilities.
(g) Nothing in this provision shall be construed as to delay the implementation of requirements for new and redevelopment, as approved in this Order.

(7) Water Quality Mitigation Criteria

(a) Each Permittee shall require all New Development and Redevelopment projects that have been approved for offsite mitigation or ground water replenishment projects as defined in Part VI.D.7.c.ii-iii to also provide treatment of storm water runoff from the project site. Each Permittee shall require these projects to design and implement post-construction storm water BMPs and control measures to reduce pollutant loading as necessary to:

(i) Meet the pollutant specific benchmarks listed in Table 11 at the treatment systems outlet or prior to the discharge to the MS4, and

(ii) Ensure that the discharge does not cause or contribute to an exceedance of water quality standards at the Permittee's downstream MS4 outfall.

(b) Each Permittee may allow the project proponent to install flow-through modular treatment systems including sand filters, or other proprietary BMP treatment systems with a demonstrated efficiency at least equivalent to a sand filter. The sizing of the flow through treatment device shall be based on a rainfall intensity of:

(i) 0.2 inches per hour, or

(ii) The one year, one-hour rainfall intensity as determined from the most recent Los Angeles County isohyetal map, ***whichever is greater***.

Table 11. Benchmarks Applicable to New Development Treatment BMPs[28]

Conventional Pollutants

Pollutant	Suspended Solids mg/L	Total P mg/L	Total N mg/L		TKN mg/L	
Effluent Concentration	14	0.13	1.28		1.09	

Metals

Pollutant	Total Cd µg/L	Total Cu µg/L	Total Cr µg/L	Total Pb µg/L	Total Zn µg/L
Effluent Concentration	0.3	6	2.8	2.5	23

[28] The treatment control BMP performance benchmarks were developed from the median effluent water quality values of the six highest performing BMPs, per pollutant, in the storm water BMP database (http://www.bmpdatabase.org/, last visited September 25, 2012).

(c) In addition to the requirements for controlling pollutant discharges as described in Part VI.D.7.c.iii. and the treatment benchmarks described above, each Permittee shall ensure that the new development or redevelopment will not cause or contribute to an exceedance of applicable water quality-based effluent limitations established in Part VI.E pursuant to Total Maximum Daily Loads (TMDLs).

iv. Hydromodification (Flow/ Volume/ Duration) Control Criteria

Each Permittee shall require all New Development and Redevelopment projects located within natural drainage systems as described in Part VI.D.7.c.iv.(1)(a)(iii) to implement hydrologic control measures, to prevent accelerated downstream erosion and to protect stream habitat in natural drainage systems. The purpose of the hydrologic controls is to minimize changes in post-development hydrologic storm water runoff discharge rates, velocities, and duration. This shall be achieved by maintaining the project's pre-project storm water runoff flow rates and durations.

(1) Description

(a) Hydromodification control in natural drainage systems shall be achieved by maintaining the Erosion Potential (Ep) in streams at a value of 1, unless an alternative value can be shown to be protective of the natural drainage systems from erosion, incision, and sedimentation that can occur as a result of flow increases from impervious surfaces and prevent damage to stream habitat in natural drainage system tributaries (see Attachment J - Determination of Erosion Potential).

(ii) Hydromodification control may include one, or a combination of on-site, regional or sub-regional hydromodification control BMPs, LID strategies, or stream and riparian buffer restoration measures. Any in-stream restoration measure shall not adversely affect the beneficial uses of the natural drainage systems.

(iii) Natural drainage systems that are subject to the hydromodification assessments and controls as described in this Part of the Order, include all drainages that have not been improved (e.g., channelized or armored with concrete, shotcrete, or rip-rap) or drainage systems that are tributary to a natural drainage system, except as provided in Part VI.D.7c.iv.(1)(b)--Exemptions to Hydromodification Controls [see below]. The clearing or dredging of a natural drainage system does not constitute an "improvement."

(iv) Until the State Water Board or the Regional Water Board adopts a final Hydromodification Policy or criteria, Permittees shall implement the Hydromodification Control Criteria described in Part VI.D.7.c.iv.(1)(c) to control the potential adverse impacts of changes in hydrology that may result from new development and

redevelopment projects located within natural drainage systems as described in Part VI.D.7.c.iv.(1)(a)(iii).

(b) Exemptions to Hydromodification Controls. Permittees may exempt the following New Development and Redevelopment projects from implementation of hydromodification controls where assessments of downstream channel conditions and proposed discharge hydrology indicate that adverse hydromodification effects to beneficial uses of Natural Drainage Systems are unlikely:

(i) Projects that are replacement, maintenance or repair of a Permittee's existing flood control facility, storm drain, or transportation network.

(ii) Redevelopment Projects in the Urban Core that do not increase the effective impervious area or decrease the infiltration capacity of pervious areas compared to the pre-project conditions.

(iii) Projects that have any increased discharge directly or via a storm drain to a sump, lake, area under tidal influence, into a waterway that has a 100-year peak flow (Q100) of 25,000 cfs or more, or other receiving water that is not susceptible to hydromodification impacts.

(iv) Projects that discharge directly or via a storm drain into concrete or otherwise engineered (not natural) channels (e.g., channelized or armored with rip rap, shotcrete, etc.), which, in turn, discharge into receiving water that is not susceptible to hydromodification impacts (as in Parts VI.D.7.c.iv.(1)(b)(i)-(iii) above).

(v) LID BMPs implemented on single family homes are sufficient to comply with Hydromodification criteria.

(c) Hydromodification Control Criteria. The Hydromodification Control Criteria to protect natural drainage systems are as follows:

(i) Except as provided for in Part VI.D.7.c.iv.(1)(b), projects disturbing an area greater than 1 acre but less than 50 acres within natural drainage systems will be presumed to meet pre-development hydrology if one of the following demonstrations is made:

1. The project is designed to retain on-site, through infiltration, evapotranspiration, and/or harvest and use, the storm water volume from the runoff of the 95th percentile, 24-hour storm, or
2. The runoff flow rate, volume, velocity, and duration for the post-development condition do not exceed the pre-development condition for the 2-year, 24-hour rainfall event. This condition may be substantiated by simple screening models, including those described in ***Hydromodification Effects on Flow Peaks***

and Durations in Southern California Urbanizing Watersheds (Hawley et al., 2011) or other models acceptable to the Executive Officer of the Regional Water Board, or

3. The Erosion Potential (Ep) in the receiving water channel will approximate 1, as determined by a Hydromodification Analysis Study and the equation presented in Attachment J. Alternatively, Permittees can opt to use other work equations to calculate Erosion Potential with Executive Officer approval.

(ii) Projects disturbing 50 acres or more within natural drainage systems will be presumed to meet pre-development hydrology based on the successful demonstration of one of the following conditions:

1. The site infiltrates on-site at least the runoff from a 2-year, 24-hour storm event, or
2. The runoff flow rate, volume, velocity, and duration for the post-development condition does not exceed the pre-development condition for the 2-year, 24-hour rainfall events. These conditions must be substantiated by hydrologic modeling acceptable to the Regional Water Board Executive Officer, or
3. The Erosion Potential (Ep) in the receiving water channel will approximate 1, as determined by a Hydromodification Analysis Study and the equation presented in Attachment J.

(c) Alternative Hydromodification Criteria

(i) Permittees may satisfy the requirement for Hydromodification Controls by implementing the hydromodification requirements in the County of Los Angeles Low Impact Development Manual (2009) for all projects disturbing an area greater than 1 acre within natural drainage systems.

(ii) Each Permittee may alternatively develop and implement watershed specific Hydromodification Control Plans (HCPs). Such plans shall be developed no later than one year after the effective date of this Order.

(iii) The HCP shall identify:

1. Stream classifications
2. Flow rate and duration control methods
3. Sub-watershed mitigation strategies
4. Stream and/or riparian buffer restoration measures, which will maintain the stream and tributary Erosion Potential at 1 unless

an alternative value can be shown to be protective of the natural drainage systems from erosion, incision, and sedimentation that can occur as a result of flow increases from impervious surfaces and prevent damage to stream habitat in natural drainage system tributaries.

(iv) The HCP shall contain the following elements:

1. Hydromodification Management Standards
2. Natural Drainage Areas and Hydromodification Management Control Areas
3. New Development and Redevelopment Projects subject to the HCP
4. Description of authorized Hydromodification Management Control BMPs
5. Hydromodification Management Control BMP Design Criteria
6. For flow duration control methods, the range of flows to control for, and goodness of fit criteria
7. Allowable low critical flow, Qc, which initiates sediment transport
8. Description of the approved Hydromodification Model
9. Any alternate Hydromodification Management Model and Design
10. Stream Restoration Measures Design Criteria
11. Monitoring and Effectiveness Assessment
12. Record Keeping
13. The HCP shall be deemed in effect upon Executive Officer approval.

v. Watershed Equivalence.

Regardless of the methods through which Permittees allow project applicants to implement alternative compliance measures, the subwatershed-wide (defined as draining to the same HUC-12 hydrologic area in the Basin Plan) result of all development must be at least the same level of water quality protection as would have been achieved if all projects utilizing these alternative compliance provisions had complied with Part VI.D.7.c.i (Integrated Water Quality/Flow Reduction/Resource Management Criteria).

vi. Annual Report

Each Permittee shall provide in their annual report to the Regional Water Board a list of mitigation project descriptions and estimated pollutant and flow reduction analyses (compiled from design specifications submitted by project

applicants and approved by the Permittee(s)). Within 4 years of Order adoption, Permittees must submit in their Annual Report, a comparison of the expected aggregate results of alternative compliance projects to the results that would otherwise have been achieved by retaining on site the SWQDv.

d. Implementation

i. Local Ordinance Equivalence

A Permittee that has adopted a local LID ordinance prior to the adoption of this Order, and which includes a retention requirement numerically equal to the 0.75-inch, 24-hour rain event or the 85th percentile, 24-hour rain event, whichever is greater, may submit documentation to the Regional Water Board that the alternative requirements in the local ordinance will provide equal or greater reduction in storm water discharge pollutant loading and volume as would have been obtained through strict conformance with Part VI.D.7.c.i. (Integrated Water Quality/Flow Reduction Resources Management Criteria) or Part VI.D.7.c.ii. (Alternative Compliance Measures for Technical Infeasibility or Opportunity for Regional Ground water Replenishment) of this Order and, if applicable, Part VI.D.7.c.iv. (Hydromodification (Flow/Volume Duration) Control Criteria).

(1) Documentation shall be submitted within 180 days after the effective date of this Order.

(2) The Regional Water Board shall provide public notice of the proposed equivalency determination and a minimum 30-day period for public comment. After review and consideration of public comments, the Regional Water Board Executive Officer will determine whether implementation of the local ordinance provides equivalent pollutant control to the applicable provisions of this Order. Local ordinances that do not strictly conform to the provisions of this Order must be approved by the Regional Water Board Executive Officer as being "equivalent" in effect to the applicable provisions of this Order in order to substitute for the requirements in Parts VI.D.7.c.i and, where applicable, VI.D.7.c.iv.

(3) Where the Regional Water Board Executive Officer determines that a Permittee's local LID ordinance does not provide equivalent pollutant control, the Permittee shall either

(a) Require conformance with Parts VI.D.7.c.i and, where applicable, VI.D.7.c.iv, or

(b) Update its local ordinance to conform to the requirements herein within two years of the effective date of this Order.

ii. Project Coordination

(1) Each Permittee shall facilitate a process for effective approval of post-construction storm water control measures. The process shall include:

(a) Detailed LID site design and BMP review including BMP sizing calculations, BMP pollutant removal performance, and municipal approval; and

(b) An established structure for communication and delineated authority between and among municipal departments that have jurisdiction over project review, plan approval, and project construction through memoranda of understanding or an equivalent agreement.

iii. Maintenance Agreement and Transfer

(1) Prior to issuing approval for final occupancy, each Permittee shall require that all new development and redevelopment projects subject to post-construction BMP requirements, with the exception of simple LID BMPs implemented on single family residences, provide an operation and maintenance plan, monitoring plan, where required, and verification of ongoing maintenance provisions for LID practices, Treatment Control BMPs, and Hydromodification Control BMPs including but not limited to: final map conditions, legal agreements, covenants, conditions or restrictions, CEQA mitigation requirements, conditional use permits, and/ or other legally binding maintenance agreements. Permittees shall require maintenance records be kept on site for treatment BMPs implemented on single family residences.

(a) Verification at a minimum shall include the developer's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and either:

(i) A signed statement from the public entity assuming responsibility for BMP maintenance; or

(ii) Written conditions in the sales or lease agreement, which require the property owner or tenant to assume responsibility for BMP maintenance and conduct a maintenance inspection at least once a year; or

(iii) Written text in project covenants, conditions, and restrictions (CCRs) for residential properties assigning BMP maintenance responsibilities to the Home Owners Association; or

(iv) Any other legally enforceable agreement or mechanism that assigns responsibility for the maintenance of BMPs.

(b) Each Permittee shall require all development projects subject to post-construction BMP requirements to provide a plan for the operation and maintenance of all structural and treatment controls. The plan shall be submitted for examination of relevance to keeping the BMPs in proper working order. Where BMPs are transferred to Permittee for ownership and maintenance, the plan shall also include all relevant costs for upkeep of BMPs in the transfer. Operation and Maintenance plans for private BMPs shall be kept on-site for periodic review by Permittee inspectors.

iv. Tracking, Inspection, and Enforcement of Post-Construction BMPs

(1) Each Permittee shall implement a tracking system and an inspection and enforcement program for new development and redevelopment post-construction storm water no later than 60 days after Order adoption date.

(a) Implement a GIS or other electronic system for tracking projects that have been conditioned for post-construction BMPs. The electronic system, at a minimum, should contain the following information:

(i) Municipal Project ID

(ii) State WDID No.

(iii) Project Acreage

(iv) BMP Type and Description

(v) BMP Location (coordinates)

(vi) Date of Acceptance

(vii) Date of Maintenance Agreement

(viii) Maintenance Records

(ix) Inspection Date and Summary

(x) Corrective Action

(xi) Date Certificate of Occupancy Issued

(xii) Replacement or Repair Date

(b) Inspect all development sites upon completion of construction and prior to the issuance of occupancy certificates to ensure proper installation of LID measures, structural BMPs, treatment control BMPs and hydromodification control BMPs. The inspection may be combined with other inspections provided it is conducted by trained personnel.

(c) Verify proper maintenance and operation of post-construction BMPs previously approved for new development and redevelopment and operated by the Permittee. The post-construction BMP maintenance inspection program shall incorporate the following elements:

(i) The development of a Post-construction BMP Maintenance Inspection checklist

(ii) Inspection at least once every 2 years after project completion, of post-construction BMPs to assess operation conditions with particular attention to criteria and procedures for post-construction

treatment control and hydromodification control BMP repair, replacement, or re-vegetation.

(d) For post-construction BMPs operated and maintained by parties other than the Permittee, the Permittee shall require the other parties to document proper maintenance and operations.

(e) Undertake enforcement action per the established Progressive Enforcement Policy as appropriate based on the results of the inspection. See Part VI.D.2 for requirements for the development and implementation of a Progressive Enforcement Policy.

8. Development Construction Program

a. Each Permittee shall develop, implement, and enforce a construction program that:

i. Prevents illicit construction-related discharges of pollutants into the MS4 and receiving waters.

ii. Implements and maintains structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites.

iii. Reduces construction site discharges of pollutants to the MS4 to the MEP.

iv. Prevents construction site discharges to the MS4 from causing or contributing to a violation of water quality standards.

b. Each Permittee shall establish for its jurisdiction an enforceable erosion and sediment control ordinance for all construction sites that disturb soil.

c. Applicability

The provisions contained in Part VI.D.8.d below apply exclusively to construction sites less than 1 acre. Provisions contained in Part VI.D.8.e – j, apply exclusively to construction sites 1 acre or greater. The requirements contained in this part apply to all activities involving soil disturbance with the exception of agricultural activities. Activities covered by this permit include but are not limited to grading, vegetation clearing, soil compaction, paving, re-paving and linear underground/overhead projects (LUPs).

d. Requirements for Construction Sites Less than One Acre

i. For construction sites less than 1 acre, each Permittee shall:

(1) Through the use of the Permittee's erosion and sediment control ordinance or and/or building permit, require the implementation of an effective combination of erosion and sediment control BMPs from Table 12 to prevent erosion and sediment loss, and the discharge of construction wastes.

Table 12. Applicable Set of BMPs for All Construction Sites

Erosion Controls	Scheduling
	Preservation of Existing Vegetation
Sediment Controls	Silt Fence
	Sand Bag Barrier
	Stabilized Construction Site Entrance/Exit
Non-Storm Water Management	Water Conservation Practices
	Dewatering Operations
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management
	Concrete Waste Management
	Sanitary/Septic Waste Management

(2) Possess the ability to identify all construction sites with soil disturbing activities that require a permit, regardless of size, and shall be able to provide a list of permitted sites upon request of the Regional Water Board. Permittees may use existing permit databases or other tracking systems to comply with these requirements.

(3) Inspect construction sites on as needed based on the evaluation of the factors that are a threat to water quality. In evaluating the threat to water quality, the following factors shall be considered: soil erosion potential; site slope; project size and type; sensitivity of receiving water bodies; proximity to receiving water bodies; non-storm water discharges; past record of non-compliance by the operators of the construction site; and any water quality issues relevant to the particular MS4.

(4) Implement the Permittee's Progressive Enforcement Policy to ensure that construction sites are brought into compliance with the erosion and sediment control ordinance within a reasonable time period. See Part VI.D.2 for requirements for the development and implementation of a Progressive Enforcement Policy.

e. Each Permittee shall require operators of public and private construction sites within its jurisdiction to select, install, implement, and maintain BMPs that comply with its erosion and sediment control ordinance.

f. The requirements contained in this part apply to all activities involving soil disturbance with the exception of agricultural activities. Activities covered by this permit include but are not limited to grading, vegetation clearing, soil compaction, paving, re-paving and linear underground/overhead projects (LUPs).

g. Construction Site Inventory / Electronic Tracking System

i. Each Permittee shall use an electronic system to inventory grading permits, encroachment permits, demolition permits, building permits, or construction permits (and any other municipal authorization to move soil and/ or construct or destruct that involves land disturbance) issued by the Permittee. To satisfy this requirement, the use of a database or GIS system is recommended.

ii. Each Permittee shall complete an inventory and continuously update as new sites are permitted and sites are completed. The inventory / tracking system shall contain, at a minimum:

(1) Relevant contact information for each project (e.g., name, address, phone, email, etc. for the owner and contractor.

(2) The basic site information including location, status, size of the project and area of disturbance.

(3) The proximity all water bodies, water bodies listed as impaired by sediment-related pollutants, and water bodies for which a sediment-related TMDL has been adopted and approved by USEPA.

(4) Significant threat to water quality status, based on consideration of factors listed in Appendix 1 to the Statewide General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit).

(5) Current construction phase where feasible.

(6) The required inspection frequency.

(7) The project start date and anticipated completion date.

(8) Whether the project has submitted a Notice of Intent and obtained coverage under the Construction General Permit.

(9) The date the Permittee approved the Erosion and Sediment Control Plan (ESCP).

(10) Post-Construction Structural BMPs subject to Operation and Maintenance Requirements.

h. Construction Plan Review and Approval Procedures

i. Each Permittee shall develop procedures to review and approve relevant construction plan documents.

ii. The review procedures shall be developed and implemented such that the following minimum requirements are met:

(1) Prior to issuing a grading or building permit, each Permittee shall require each operator of a construction activity within its jurisdiction to prepare and submit an ESCP prior to the disturbance of land for the Permittee's review and written approval. The construction site operator shall be prohibited from commencing construction activity prior to receipt of written approval by the Permittee. Each Permittee shall not approve any ESCP unless it contains appropriate site-specific construction site BMPs that

meet the minimum requirements of a Permittee's erosion and sediment control ordinance.

(2) ESCPs must include the elements of a Storm Water Pollution Prevention Plan (SWPPP). SWPPPs prepared in accordance with the requirements of the Construction General Permit can be accepted as ESCPs.

(3) At a minimum, the ESCP must address the following elements:

(a) Methods to minimize the footprint of the disturbed area and to prevent soil compaction outside of the disturbed area.

(b) Methods used to protect native vegetation and trees.

(c) Sediment/Erosion Control.

(d) Controls to prevent tracking on and off the site.

(e) Non-storm water controls (e.g., vehicle washing, dewatering, etc.).

(f) Materials Management (delivery and storage).

(g) Spill Prevention and Control.

(h) Waste Management (e.g., concrete washout/waste management; sanitary waste management).

(i) Identification of site Risk Level as identified per the requirements in Appendix 1 of the Construction General Permit.

(4) The ESCP must include the rationale for the selection and design of the proposed BMPs, including quantifying the expected soil loss from different BMPs.

(5) Each Permittee shall require that the ESCP is developed and certified by a Qualified SWPPP Developer (QSD).

(6) Each Permittee shall require that all structural BMPs be designed by a licensed California Engineer.

(7) Each Permittee shall require that for all sites, the landowner or the landowner's agent sign a statement on the ESCP as follows:

(a) "I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/ or inaccurate information, failing to update the ESCP to reflect current conditions, or failing to properly and/ or adequately implement the ESCP may result in revocation of grading and/ or other permits or other sanctions provided by law."

(8) Prior to issuing a grading or building permit, each Permittee must verify that the construction site operators have existing coverage under

applicable permits, including, but not limited to the State Water Board's Construction General Permit, and State Water Board 401 Water Quality Certification.

(9) Each Permittee shall develop and implement a checklist to be used to conduct and document review of each ESCP.

i. BMP Implementation Level

i. Each Permittee shall implement technical standards for the selection, installation and maintenance of construction BMPs for all construction sites within its jurisdiction.

ii. The BMP technical standards shall require:

(1) The use of BMPs that are tailored to the risks posed by the project. Sites are to be ranked from Low Risk (Risk 1) to High Risk (Risk 3). Project risks are to be calculated based on the potential for erosion from the site and the sensitivity of the receiving water body. Receiving water bodies that are listed on the Clean Water Act (CWA) Section 303(d) list for sediment or siltation are considered High Risk. Likewise, water bodies with designated beneficial uses of SPWN, COLD, and MIGR are also considered to be High Risk. The combined (sediment/receiving water) site risk shall be calculated using the methods provided in Appendix 1 of the Construction General Permit. At a minimum, the BMP technical standards shall include requirements for High Risk sites as defined in Table 15.

(2) The use of BMPs for all construction sites, sites equal or greater to 1 acre, and for paving projects per Tables 14 and 16 of this Order.

(3) Detailed installation designs and cut sheets for use within ESCPs.

(4) Maintenance expectations for each BMP, or category of BMPs, as appropriate.

iii. Permittees are encouraged to adopt respective BMPs from latest versions of the ***California BMP Handbook, Construction*** or ***Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices (BMPs) Manual*** and addenda. Alternatively, Permittees are authorized to develop or adopt equivalent BMP standards consistent for Southern California and for the range of activities presented below in Tables 13 through 16.

iv. The local BMP technical standards shall be readily available to the development community and shall be clearly referenced within each Permittee's storm water or development services website, ordinance, permit approval process and/or ESCP review forms. The local BMP technical standards shall also be readily available to the Regional Water Board upon request.

v. Local BMP technical standards shall be available for the following:

Table 13. Minimum Set of BMPs for All Construction Sites

Erosion Controls	Scheduling
	Preservation of Existing Vegetation
Sediment Controls	Silt Fence
	Sand Bag Barrier
	Stabilized Construction Site Entrance/Exit
Non-Storm water Management	Water Conservation Practices
	Dewatering Operations
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management
	Concrete Waste Management
	Sanitary/Septic Waste Management

Table 14. Additional BMPs Applicable to Construction Sites Disturbing 1 Acre or More

Erosion Controls	Hydraulic Mulch
	Hydroseeding
	Soil Binders
	Straw Mulch
	Geotextiles and Mats
	Wood Mulching
Sediment Controls	Fiber Rolls
	Gravel Bag Berm
	Street Sweeping and/ or Vacuum
	Storm Drain Inlet Protection
	Scheduling
	Check Dam
Additional Controls	Wind Erosion Controls
	Stabilized Construction Entrance/ Exit
	Stabilized Construction Roadway
	Entrance/ Exit Tire Wash
Non-Storm water Management	Vehicle and Equipment Washing
	Vehicle and Equipment Fueling
	Vehicle and Equipment Maintenance
Waste Management	Material Delivery and Storage
	Spill Prevention and Control

Table 15. Additional Enhanced BMPs for High Risk Sites

Erosion Controls	Hydraulic Mulch
	Hydroseeding
	Soil Binders
	Straw Mulch

	Geotextiles and Mats
	Wood Mulching
	Slope Drains
Sediment Controls	Silt Fence
	Fiber Rolls
	Sediment Basin
	Check Dam
	Gravel Bag Berm
	Street Sweeping and/or Vacuum
	Sand Bag Barrier
	Storm Drain Inlet Protection
Additional Controls	Wind Erosion Controls
	Stabilized Construction Entrance/Exit
	Stabilized Construction Roadway
	Entrance/Exit Tire Wash
	Advanced Treatment Systems*
Non-Storm water Management	Water Conservation Practices
	Dewatering Operations (Ground water dewatering only under NPDES Permit No. CAG994004)
	Vehicle and Equipment Washing
	Vehicle and Equipment Fueling
	Vehicle and Equipment Maintenance
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management

* Applies to public roadway projects.

Table 16. Minimum Required BMPs for Roadway Paving or Repair Operation (For Private or Public Projects)

1.	Restrict paving and repaving activity to exclude periods of rainfall or predicted rainfall unless required by emergency conditions.
2.	Install gravel bags and filter fabric or other equivalent inlet protection at all susceptible storm drain inlets and at manholes to prevent spills of paving products and tack coat.
3.	Prevent the discharge of release agents including soybean oil, other oils, or diesel to the storm water drainage system or receiving waters.
4.	Minimize non storm water runoff from water use for the roller and for evaporative cooling of the asphalt.
5.	Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly.
6.	Collect liquid waste in a container, with a secure lid, for transport to a maintenance facility to be reused, recycled or disposed of properly.
7.	Collect solid waste by vacuuming or sweeping and securing in an

	appropriate container for transport to a maintenance facility to be reused, recycled or disposed of properly.
8.	Cover the "cold-mix" asphalt (i.e., pre-mixed aggregate and asphalt binder) with protective sheeting during a rainstorm.
9.	Cover loads with tarp before haul-off to a storage site, and do not overload trucks.
10.	Minimize airborne dust by using water spray or other approved dust suppressant during grinding.
11.	Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near storm water drainage system or receiving waters.
12.	Protect stockpiles with a cover or sediment barriers during a rain.

j. Construction Site Inspection

i. Each Permittee shall use its legal authority to implement procedures for inspecting public and private construction sites.

ii. The inspection procedures shall be implemented as follows:

(1) Inspect the public and private construction sites as specified in Table 17 below:

Table 17. Inspection Frequencies for Sites One Acre or Greater

Site	Inspection Frequency Shall Occur
a. All sites 1 acre or larger that discharge to a tributary listed by the state as an impaired water for sediment or turbidity under the CWA § 303(d)	(1) when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA[29], (2) within 48 hours of a ½-inch rain event and at (3) least once every two weeks
b. Other sites 1 acre or more determined to be a significant threat to water quality[30]	
c. All other construction sites with 1 acre or more of soil disturbance not meeting the criteria above	At least monthly

(2) Each Permittee shall inspect all phases of construction as follows:

(a) Prior to Land Disturbance

Prior to allowing an operator to commence land disturbance, each Permittee shall perform an inspection to ensure all necessary erosion

[29] www.srh.noaa.gov/forecast

[30] In evaluating the threat to water quality, the following factors shall be considered: soil erosion potential; site slope; project size and type; sensitivity of receiving water bodies; proximity to receiving water bodies; non-storm water discharges; past record of non-compliance by the operators of the construction site; and any water quality issues relevant to the particular MS4.

and sediment structural and non-structural BMP materials and procedures are available per the erosion and sediment control plan.

(b) During Active Construction, including Land Development[31] and Vertical Construction[32]

In accordance with the frequencies specified in Part VI.D.8.j and Table 17 of this Order, each Permittee shall perform an inspection to ensure all necessary erosion and sediment structural and non-structural BMP materials and procedures are available per the erosion and sediment control plan throughout the construction process.

(c) Final Landscaping / Site Stabilization[33]

At the conclusion of the project and as a condition of approving and/or issuing a Certificate of Occupancy, each Permittee shall inspect the constructed site to ensure that all graded areas have reached final stabilization and that all trash, debris, and construction materials, and temporary erosion and sediment BMPs are removed.

(3) Based on the required frequencies above, each construction project shall be inspected a minimum of three times.

(4) Inspection Standard Operating Procedures

Each Permittee shall develop, implement, and revise as necessary, standard operating procedures that identify the inspection procedures each Permittee will follow. Inspections of construction sites, and the standard operating procedures, shall include, but are not limited to:

(a) Verification of active coverage under the Construction General Permit for sites disturbing 1 acre or more, or that are part of a planned development that will disturb 1 acre or more and a process for referring non-filers to the Regional Water Board.

(b) Review of the applicable ESCP and inspection of the construction site to determine whether all BMPs have been selected, installed, implemented, and maintained according to the approved plan and subsequent approved revisions.

(c) Assessment of the appropriateness of the planned and installed BMPs and their effectiveness.

(d) Visual observation and record keeping of non-storm water discharges, potential illicit discharges and connections, and potential discharge of pollutants in storm water runoff.

(e) Development of a written or electronic inspection report generated from an inspection checklist used in the field.

[31] Activities include cuts and fills, rough and finished grading; alluvium removals; canyon cleanouts; rock undercuts; keyway excavations; stockpiling of select material for capping operations; and excavation and street paving, lot grading, curbs, gutters and sidewalks, public utilities, public water facilities including fire hydrants, public sanitary sewer systems, storm sewer system and/or other drainage improvement.
[32] The build out of structures from foundations to roofing, including rough landscaping.
[33] All soil disturbing activities at each individual parcel within the site have been completed.

(f) Tracking of the number of inspections for the inventoried construction sites throughout the reporting period to verify that the sites are inspected at the minimum frequencies required in Table 17 of this Order.

k. Enforcement

Each Permittee shall implement its Progressive Enforcement Policy to ensure that construction sites are brought into compliance with all storm water requirements within a reasonable time period. See Part VI.D.2 for requirements for the development and implementation of a Progressive Enforcement Policy.

l. Permittee Staff Training

i. Each Permittee shall ensure that all staff whose primary job duties are related to implementing the construction storm water program are adequately trained.

ii. Each Permittee may conduct in-house training or contract with consultants. Training shall be provided to the following staff positions of the MS4:

(1) Plan Reviewers and Permitting Staff

Ensure staff and consultants are trained as qualified individuals, knowledgeable in the technical review of local erosion and sediment control ordinance, local BMP technical standards, ESCP requirements, and the key objectives of the State Water Board QSD program. Permittees may provide internal training to staff or require staff to obtain QSD certification.

(2) Erosion Sediment Control/Storm Water Inspectors

Each Permittee shall ensure that its inspectors are knowledgeable in inspection procedures consistent with the State Water Board sponsored program QSD or a Qualified SWPPP Practitioner (QSP) or that a designated person on staff who has been trained in the key objectives of the QSD/QSP programs supervises inspection operations. Each Permittee may provide internal training to staff or require staff to obtain QSD/QSP certification. Each inspector must be knowledgeable of the local BMP technical standards and ESCP requirements.

(3) Third-Party Plan Reviewers, Permitting Staff, and Inspectors

If the Permittee utilizes outside parties to conduct inspections and/or review plans, each Permittee shall ensure these staff are trained per the requirements listed above. Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

9. Public Agency Activities Program

a. Each Permittee shall implement a Public Agency Activities Program to minimize storm water pollution impacts from Permittee-owned or operated facilities and activities and to identify opportunities to reduce storm water pollution impacts

from areas of existing development. Requirements for Public Agency Facilities and Activities consist of the following components:

i. Public Construction Activities Management

ii. Public Facility Inventory

iii. Inventory of Existing Development for Retrofitting Opportunities

iv. Public Facility and Activity Management

v. Vehicle and Equipment Wash Areas

vi. Landscape, Park, and Recreational Facilities Management

vii. Storm Drain Operation and Maintenance

viii. Streets, Roads, and Parking Facilities Maintenance

ix. Emergency Procedures

x. Municipal Employee and Contractor Training

b. Public Construction Activities Management

i. Each Permittee shall implement and comply with the Planning and Land Development Program requirements in Part VI.D.7 of this Order at Permittee-owned or operated (i.e., public or Permittee sponsored) construction projects that are categorized under the project types identified in Part VI.D.7.b of this Order.

ii. Each Permittee shall implement and comply with the appropriate Development Construction Program requirements in Part VI.D.8 of this Order at Permittee-owned or operated construction projects as applicable.

iii. For Permittee-owned or operated projects (including those under a capital improvement project plan) that disturb less than one acre of soil, each Permittee shall require an effective combination of erosion and sediment control BMPs from Table 13 (see Construction Development Program, minimum BMPs).

iv. Each Permittee shall obtain separate coverage under the Construction General Permit for all Permittee-owned or operated construction sites that require coverage.

c. Public Facility Inventory

i. Each Permittee shall maintain an updated inventory of all Permittee-owned or operated (i.e., public) facilities within its jurisdiction that are potential sources of storm water pollution. The incorporation of facility information into a GIS is recommended. Sources to be tracked include but are not limited to the following:

(1) Animal control facilities

(2) Chemical storage facilities

(3) Composting facilities

(4) Equipment storage and maintenance facilities (including landscape maintenance-related operations)

(5) Fueling or fuel storage facilities (including municipal airports)

(6) Hazardous waste disposal facilities

(7) Hazardous waste handling and transfer facilities

(8) Incinerators

(9) Landfills

(10) Materials storage yards

(11) Pesticide storage facilities

(12) Fire stations

(13) Public restrooms

(14) Public parking lots

(15) Public golf courses

(16) Public swimming pools

(17) Public parks

(18) Public works yards

(19) Public marinas

(20) Recycling facilities

(21) Solid waste handling and transfer facilities

(22) Vehicle storage and maintenance yards

(23) Storm water management facilities (e.g., detention basins)

(24) All other Permittee-owned or operated facilities or activities that each Permittee determines may contribute a substantial pollutant load to the MS4.

ii. Each Permittee shall include the following minimum fields of information for each Permittee-owned or operated facility in its inventory.

(1) Name of facility

(2) Name of facility manager and contact information

(3) Address of facility (physical and mailing)

(4) A narrative description of activities performed and potential pollution sources.

(5) Coverage under the Industrial General Permit or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.

iii. Each Permittee shall update its inventory at least once during the 5-year term of the Order. The update shall be accomplished through collection of new information obtained through field activities or through other readily available inter and intra-agency informational databases (e.g., property management, land-use approvals, accounting and depreciation ledger account, and similar information).

d. Inventory of Existing Development for Retrofitting Opportunities

i. Each Permittee shall develop an inventory of retrofitting opportunities that meets the requirements of this Part VI.9.d. Retrofit opportunities shall be identified within the public right-of-way or in coordination with a TMDL implementation plan(s). The goals of the existing development retrofitting inventory are to address the impacts of existing development through regional or sub-regional retrofit projects that reduce the discharges of storm water pollutants into the MS4 and prevent discharges from the MS4 from causing or contributing to a violation of water quality standards as defined in Part V.A, Receiving Water Limitations.

ii. Each Permittee shall screen existing areas of development to identify candidate areas for retrofitting using watershed models or other screening level tools.

iii. Each Permittee shall evaluate and rank the areas of existing development identified in the screening to prioritize retrofitting candidates. Criteria for evaluation may include but are not limited to:

(1) Feasibility, including general private and public land availability;

(2) Cost effectiveness;

(3) Pollutant removal effectiveness;

(4) Tributary area potentially treated;

(5) Maintenance requirements;

(6) Landowner cooperation;

(7) Neighborhood acceptance;

(8) Aesthetic qualities;

(9) Efficacy at addressing concern; and

(10) Potential improvements to public health and safety.

iv. Each Permittee shall consider the results of the evaluation in the following programs:

(1) The Permittee's storm water management program: Highly feasible projects expected to benefit water quality should be given a high priority to implement source control and treatment control BMPs in a Permittee's SWMP.

(2) Off-site mitigation for New Development and Redevelopment: Each Permittee shall consider high priority retrofit projects as candidates for off-site mitigation projects per Part VI.D.7.c.iii.(4).(d).

(3) Where feasible, at the discretion of the Permittee, the existing development retrofitting program may be coordinated with flood control projects and other infrastructure improvement programs per Part VI.D.9.e.ii.(2) below.

v. Each Permittee shall cooperate with private landowners to encourage site specific retrofitting projects. Each Permittee shall consider the following practices in cooperating with private landowners to retrofit existing development:

(1) Demonstration retrofit projects;

(2) Retrofits on public land and easements that treat runoff from private developments;

(3) Education and outreach;

(4) Subsidies for retrofit projects;

(5) Requiring retrofit projects as enforcement, mitigation or ordinance compliance;

(6) Public and private partnerships;

(7) Fees for existing discharges to the MS4 and reduction of fees for retrofit implementation.

e. Public Agency Facility and Activity Management

i. Each Permittee shall obtain separate coverage under the Industrial General Permit for all Permittee-owned or operated facilities where industrial activities are conducted that require coverage under the Industrial General Permit.

ii. Each Permittee shall implement the following measures for Permittee- owned and operated flood management projects:

(1) Develop procedures to assess the impacts of flood management projects on the water quality of receiving water bodies; and

(2) Evaluate existing structural flood control facilities to determine if retrofitting the facility to provide additional pollutant removal from storm water is feasible.

iii. Each Permittee shall ensure the implementation and maintenance of activity specific BMPs listed in Table 18 (BMPs for Public Agency Facilities and Activities) or an equivalent set of BMPs when such activities occur at Permittee-owned or operated facilities and field activities (e.g., project sites) including but not limited to the facility types listed in Part VI.D.9.c above, and at any area that includes the activities described in Table 18, or that have the potential to discharge pollutants in storm water.

iv. Any contractors hired by the Permittee to conduct Public Agency Activities including, but not limited to, storm and/or sanitary sewer system inspection and repair, street sweeping, trash pick-up and disposal, and street and right-of-way construction and repair shall be contractually required to implement and maintain the activity specific BMPs listed in Table 18. Each Permittee shall conduct oversight of contractor activities to ensure these BMPs are implemented and maintained.

v. Permittee-owned or operated facilities that have obtained coverage under the Industrial General Permit shall implement and maintain BMPs consistent with the associated SWPPP and are therefore not required to implement and maintain the activity specific BMPs listed in Table 18.

vi. Effective source control BMPs for the activities listed in Table 18 shall be implemented at Permittee-owned or operated facilities, unless the pollutant generating activity does not occur. Each Permittee shall require implementation of additional BMPs where storm water from the MS4 discharges to a significant ecological area (SEA, see Attachment A for definition), a water body subject to TMDL provisions in Part VI.E., or a CWA § 303(d) listed water body (see Part VI.E below). Likewise, for those BMPs that are not adequately protective of water quality standards, a Permittee may require additional site-specific controls.

Table 18. BMPs for Public Agency Facilities and Activities

General and Activity Specific BMPs	
General BMPs	Scheduling and Planning
	Spill Prevention and Control
	Sanitary/Septic Waste Management
	Material Use
	Safer Alternative Products
	Vehicle/Equipment Cleaning, Fueling and Maintenance
	Illicit Connection Detection, Reporting and Removal
	Illegal Spill Discharge Control
	Maintenance Facility Housekeeping Practices
Flexible Pavement	Asphalt Cement Crack and Joint Grinding/ Sealing
	Asphalt Paving
	Structural Pavement Failure (Digouts) Pavement Grinding and Paving
	Emergency Pothole Repairs
	Sealing Operations
Rigid Pavement	Portland Cement Crack and Joint Sealing
	Mudjacking and Drilling
	Concrete Slab and Spall Repair
Slope/ Drains/ Vegetation	Shoulder Grading
	Nonlandscaped Chemical Vegetation Control
	Nonlandscaped Mechanical Vegetation Control/

General and Activity Specific BMPs	
	Mowing
	Nonlandscaped Tree and Shrub Pruning, Brush Chipping, Tree and Shrub Removal
	Fence Repair
	Drainage Ditch and Channel Maintenance
	Drain and Culvert Maintenance
	Curb and Sidewalk Repair
Litter/ Debris/ Graffiti	Sweeping Operations
	Litter and Debris Removal
	Emergency Response and Cleanup Practices
	Graffiti Removal
Landscaping	Chemical Vegetation Control
	Manual Vegetation Control
	Landscaped Mechanical Vegetation Control/ Mowing
	Landscaped Tree and Shrub Pruning, Brush Chipping, Tree and Shrub Removal
	Irrigation Line Repairs
	Irrigation (Watering), Potable and Nonpotable
Environmental	Storm Drain Stenciling
	Roadside Slope Inspection
	Roadside Stabilization
	Stormwater Treatment Devices
	Traction Sand Trap Devices
Bridges	Welding and Grinding
	Sandblasting, Wet Blast with Sand Injection and Hydroblasting
	Painting
	Bridge Repairs
Other Structures	Pump Station Cleaning
	Tube and Tunnel Maintenance and Repair
	Tow Truck Operations
	Toll Booth Lane Scrubbing Operations
Electrical	Sawcutting for Loop Installation
Traffic Guidance	Thermoplastic Striping and Marking
	Paint Striping and Marking
	Raised/ Recessed Pavement Marker Application and Removal
	Sign Repair and Maintenance
	Median Barrier and Guard Rail Repair
	Emergency Vehicle Energy Attenuation Repair
Storm Maintenance	Minor Slides and Slipouts Cleanup/ Repair
Management and Support	Building and Grounds Maintenance
	Storage of Hazardous Materials (Working Stock)
	Material Storage Control (Hazardous Waste)

General and Activity Specific BMPs	
	Outdoor Storage of Raw Materials
	Vehicle and Equipment Fueling
	Vehicle and Equipment Cleaning
	Vehicle and Equipment Maintenance and Repair
	Aboveground and Underground Tank Leak and Spill Control

f. Vehicle and Equipment Washing

i. Each Permittee shall implement and maintain the activity specific BMPs listed in Table 18 (BMPs for Public Agency Facilities and Activities) for all fixed vehicle and equipment washing; including fire fighting and emergency response vehicles.

ii. Each Permittee shall prevent discharges of wash waters from vehicle and equipment washing to the MS4 by implementing any of the following measures at existing facilities with vehicle or equipment wash areas:

(1) Self-contain, and haul off for disposal; or

(2) Equip with a clarifier or an alternative pre-treatment device and plumb to the sanitary sewer in accordance with applicable waste water provider regulations.

iii. Each Permittee shall ensure that any municipal facilities constructed, redeveloped, or replaced shall not discharge wastewater from vehicle and equipment wash areas to the MS4 by plumbing all areas to the sanitary sewer in accordance with applicable waste water provider regulations, or self-containing all waste water/ wash water and hauling to a point of legal disposal.

g. Landscape, Park, and Recreational Facilities Management

i. Each Permittee shall implement and maintain the activity specific BMPs listed in Table 18 for all public right-of-ways, flood control facilities and open channels, lakes and reservoirs, and landscape, park, and recreational facilities and activities.

ii. Each Permittee shall implement an IPM program that includes the following:

(1) Pesticides are used only if monitoring indicates they are needed, and pesticides are applied according to applicable permits and established guidelines.

(2) Treatments are made with the goal of removing only the target organism.

(3) Pest controls are selected and applied in a manner that minimizes risks to human health, beneficial non-target organisms, and the environment.

(4) The use of pesticides, including Organophosphates and Pyrethroids, does not threaten water quality.

(5) Partner with other agencies and organizations to encourage the use of IPM.

(6) Adopt and verifiably implement policies, procedures, and/ or ordinances requiring the minimization of pesticide use and encouraging the use of IPM techniques (including beneficial insects) for Public Agency Facilities and Activities.

(7) Policies, procedures, and ordinances shall include commitments and a schedule to reduce the use of pesticides that cause impairment of surface waters by implementing the following procedures:

(a) Prepare and annually update an inventory of pesticides used by all internal departments, divisions, and other operational units.

(b) Quantify pesticide use by staff and hired contractors.

(c) Demonstrate implementation of IPM alternatives where feasible to reduce pesticide use.

iii. Each Permittee shall implement the following requirements:

(1) Use a standardized protocol for the routine and non-routine application of pesticides (including pre-emergents), and fertilizers.

(2) Ensure there is no application of pesticides or fertilizers (1) when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA[34], (2) within 48 hours of a ½-inch rain event, or (3) when water is flowing off the area where the application is to occur. This requirement does not apply to the application of aquatic pesticides described in Part VI.D.9.g.iii.(1) above or pesticides which require water for activation.

(3) Ensure that no banned or unregistered pesticides are stored or applied.

(4) Ensure that all staff applying pesticides are certified in the appropriate category by the California Department of Pesticide Regulation, or are under the direct supervision of a pesticide applicator certified in the appropriate category.

(5) Implement procedures to encourage the retention and planting of native vegetation to reduce water, pesticide and fertilizer needs; and

(6) Store pesticides and fertilizers indoors or under cover on paved surfaces, or use secondary containment.

(a) Reduce the use, storage, and handling of hazardous materials to reduce the potential for spills.

(b) Regularly inspect storage areas.

h. Storm Drain Operation and Maintenance

[34] www.srh.noaa.gov/forecast

i. Each Permittee shall implement and maintain the activity specific BMPs listed in Table 18 for storm drain operation and maintenance.

ii. Ensure that all material removed from the MS4 does not reenter the system. Solid material shall be dewatered in a contained area and liquid material shall be disposed in accordance with any of the following measures:

(1) Self-contain, and haul off for legal disposal; or

(2) Applied to the land without runoff; or

(3) Equip with a clarifier or an alternative pre-treatment device; and plumb to the sanitary sewer in accordance with applicable waste water provider regulations.

iii. Catch Basin Cleaning

(1) In areas that are not subject to a trash TMDL, each Permittee shall determine priority areas and shall update its map or list of Catch Basins with their GPS coordinates and priority:

Priority A: Catch basins that are designated as consistently generating the highest volumes of trash and/or debris.

Priority B: Catch basins that are designated as consistently generating moderate volumes of trash and/or debris.

Priority C: Catch basins that are designated as generating low volumes of trash and/or debris.

The map or list shall contain the rationale or data to support priority designations.

(2) In areas that are not subject to a trash TMDL, each Permittee shall inspect catch basins according to the following schedule:

Priority A: A minimum of 3 times during the wet season (October 1 through April 15) and once during the dry season every year.

Priority B: A minimum of once during the wet season and once during the dry season every year.

Priority C: A minimum of once per year.

Catch basins shall be cleaned as necessary on the basis of inspections. At a minimum, Permittees shall ensure that any catch basin that is determined to be at least 25% full of trash shall be cleaned out. Permittees shall maintain inspection and cleaning records for Regional Water Board review.

(3) In areas that are subject to a trash TMDL, the subject Permittees shall implement the applicable provisions in Part VI.E.

iv. Trash Management at Public Events

(1) Each Permittee shall require the following measures for any event in the public right of way or wherever it is foreseeable that substantial quantities

of trash and litter may be generated, including events located in areas that are subject to a trash TMDL:

(a) Proper management of trash and litter generated; and

(b) Arrangement for temporary screens to be placed on catch basins; or

(c) Provide clean out of catch basins, trash receptacles, and grounds in the event area within one business day subsequent to the event.

v. Trash Receptacles

(1) Each Permittee shall ensure trash receptacles, or equivalent trash capturing devices, are covered in areas newly identified as high trash generation areas within its jurisdiction.

(2) Each Permittee shall ensure that all trash receptacles are cleaned out and maintained as necessary to prevent trash overflow.

vi. Catch Basin Labels and Open Channel Signage

(1) Each Permittee shall label all storm drain inlets that they own with a legible “no dumping” message.

(2) Each Permittee shall inspect the legibility of the stencil or label nearest each inlet prior to the wet season every year.

(3) Each Permittee shall record all catch basins with illegible stencils and re-stencil or re-label within 180 days of inspection.

(4) Each Permittee shall post signs, referencing local code(s) that prohibit littering and illegal dumping, at designated public access points to open channels, creeks, urban lakes, and other relevant water bodies.

vii. Additional Trash Management Practices

(1) In areas that are not subject to a trash TMDL, each Permittee shall install trash excluders, or equivalent devices, on or in catch basins or outfalls to prevent the discharge of trash to the MS4 or receiving water no later than four years after the effective date of this Order in areas defined as Priority A (Part VI.D.9.h.iii.(1)) except at sites where the application of such BMP(s) alone will cause flooding. Lack of maintenance that causes flooding is not an acceptable exception to the requirement to install BMPs. Alternatively, each Permittee may implement alternative or enhanced BMPs beyond the provisions of this Order (such as but not limited to increased street sweeping, adding trash cans near trash generation sites, prompt enforcement of trash accumulation, increased trash collection on public property, increased litter prevention messages or trash nets within the MS4) that provide substantially equivalent removal of trash. Each Permittee shall demonstrate that BMPs, which substituted for trash excluders, provide equivalent trash removal performance as excluders. When outfall trash capture is provided, revision of the schedule for inspection and cleanout of catch basins in Part VI.D.9.h.iii.(2) shall be reported in the next year’s annual report.

viii. Storm Drain Maintenance

Each Permittee shall implement a program for Storm Drain Maintenance that includes the following:

(1) Visual monitoring of Permittee-owned open channels and other drainage structures for trash and debris at least annually.

(2) Removal of trash and debris from open channels a minimum of once per year before the wet season.

(3) Elimination of the discharge of contaminants during MS4 maintenance and clean outs.

(4) Proper disposal of debris and trash removed during storm drain maintenance.

ix. Infiltration from Sanitary Sewer to MS4/Preventive Maintenance

(1) Each Permittee shall implement controls and measures to prevent and eliminate infiltration of seepage from sanitary sewers to MS4s through thorough, routine preventive maintenance of the MS4.

(2) Each Permittee that operates both a municipal sanitary sewer system and a MS4 must implement controls and measures to prevent and eliminate infiltration of seepage from the sanitary sewers to the MS4s that must include overall sanitary sewer and MS4 surveys and thorough, routine preventive maintenance of both. Implementation of a Sewer System Management Plan in accordance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, may be used to fulfill this requirement.

(3) Each Permittee shall implement controls to limit infiltration of seepage from sanitary sewers to the MS4 where necessary. Such controls must include:

(a) Adequate plan checking for construction and new development;

(b) Incident response training for its municipal employees that identify sanitary sewer spills;

(c) Code enforcement inspections;

(d) MS4 maintenance and inspections;

(e) Interagency coordination with sewer agencies; and

(f) Proper education of its municipal staff and contractors conducting field operations on the MS4 or its municipal sanitary sewer (if applicable).

x. Permittee Owned Treatment Control BMPs

(1) Each Permittee shall implement an inspection and maintenance program for all Permittee owned treatment control BMPs, including post-construction treatment control BMPs.

(2) Each Permittee shall ensure proper operation of all treatment control BMPs and maintain them as necessary for proper operation, including all post-construction treatment control BMPs.

(3) Any residual water[35] produced by a treatment control BMP and not being internal to the BMP performance when being maintained shall be:

(a) Hauled away and legally disposed of; or

(b) Applied to the land without runoff; or

(c) Discharged to the sanitary sewer system (with permits or authorization); or

(d) Treated or filtered to remove bacteria, sediments, nutrients, and meet the limitations set in Table 19 (Discharge Limitations for Dewatering Treatment BMPs), prior to discharge to the MS4.

Table 19. Discharge Limitations for Dewatering Treatment BMPs[36]

Parameter	Units	Limitation
Total Suspended Solids	mg/L	100
Turbidity	NTU	50
Oil and Grease	mg/L	10

i. Streets, Roads, and Parking Facilities Maintenance

i. Each Permittee shall designate streets and/or street segments within its jurisdiction as one of the following:

Priority A: Streets and/or street segments that are designated as consistently generating the highest volumes of trash and/or debris.

Priority B: Streets and/or street segments that are designated as consistently generating moderate volumes of trash and/or debris.

Priority C: Streets and/or street segments that are designated as generating low volumes of trash and/or debris.

ii. Each Permittee shall perform street sweeping of curbed streets according to the following schedule:

Priority A: Streets and/or street segments that are designated as Priority A shall be swept at least two times per month.

Priority B: Streets and/or street segments that are designated as Priority B shall be swept at least once per month.

Priority C: Streets and/or street segments that are designated as Priority C shall be swept as necessary but in no case less than once per year.

[35] See Attachment A.
[36] Technology based effluent limitations.

iii. Road Reconstruction

Each Permittee shall require that for any project that includes roadbed or street paving, repaving, patching, digouts, or resurfacing roadbed surfaces, that the following BMPs be implemented for each project.

(1) Restrict paving and repaving activity to exclude periods of rainfall or predicted rainfall[37] unless required by emergency conditions.

(2) Install sand bags or gravel bags and filter fabric at all susceptible storm drain inlets and at manholes to prevent spills of paving products and tack coat;

(3) Prevent the discharge of release agents including soybean oil, other oils, or diesel into the MS4 or receiving waters.

(4) Prevent non-storm water runoff from water use for the roller and for evaporative cooling of the asphalt.

(5) Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly.

(6) Collect liquid waste in a container, with a secure lid, for transport to a maintenance facility to be reused, recycled or disposed of properly.

(7) Collect solid waste by vacuuming or sweeping and securing in an appropriate container for transport to a maintenance facility to be reused, recycled or disposed of properly.

(8) Cover the “cold-mix” asphalt (i.e., pre-mixed aggregate and asphalt binder) with protective sheeting during a rainstorm.

(9) Cover loads with tarp before haul-off to a storage site, and do not overload trucks.

(10) Minimize airborne dust by using water spray during grinding.

(11) Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near MS4 or receiving waters.

(12) Protect stockpiles with a cover or sediment barriers during a rain.

iv. Parking Facilities Maintenance

(1) Permittee-owned parking lots exposed to storm water shall be kept clear of debris and excessive oil buildup and cleaned no less than 2 times per month and/or inspected no less than 2 times per month to determine if cleaning is necessary. In no case shall a Permittee-owned parking lot be cleaned less than once a month.

j. Emergency Procedures

i. Each Permittee may conduct repairs of essential public service systems and infrastructure in emergency situations with a self-waiver of the provisions of this Order as follows:

[37] A probability of precipitation (POP) of 50% is required.

(1) The Permittee shall abide by all other regulatory requirements, including notification to other agencies as appropriate.

(2) Where the self-waiver has been invoked, the Permittee shall submit to the Regional Water Board Executive Officer a statement of the occurrence of the emergency, an explanation of the circumstances, and the measures that were implemented to reduce the threat to water quality, no later than 30 business days after the situation of emergency has passed.

(3) Minor repairs of essential public service systems and infrastructure in emergency situations (that can be completed in less than one week) are not subject to the notification provisions. Appropriate BMPs to reduce the threat to water quality shall be implemented.

k. Municipal Employee and Contractor Training

i. Each Permittee shall, no later than 1 year after Order adoption and annually thereafter before June 30, train all of their employees in targeted positions (whose interactions, jobs, and activities affect storm water quality) on the requirements of the overall storm water management program, or shall ensure contractors performing privatized/contracted municipal services are appropriately trained to:

(1) Promote a clear understanding of the potential for activities to pollute storm water.

(2) Identify opportunities to require, implement, and maintain appropriate BMPs in their line of work.

Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

ii. Each Permittee shall, no later than 1 year after Order adoption and annually thereafter before June 30, train all of their employees and contractors who use or have the potential to use pesticides or fertilizers (whether or not they normally apply these as part of their work). Training programs shall address:

(1) The potential for pesticide-related surface water toxicity.

(2) Proper use, handling, and disposal of pesticides.

(3) Least toxic methods of pest prevention and control, including IPM.

(4) Reduction of pesticide use.

iii. Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

10. Illicit Connections and Illicit Discharges Elimination Program

a. General

i. Each Permittee shall continue to implement an Illicit Connection and Illicit Discharge Elimination (IC/ID) Program to detect, investigate, and eliminate IC/IDs to the MS4. The IC/ID Program must be implemented in accordance with the requirements and performance measures specified in this Order.

ii. As stated in Part VI.A.2 of this Order, each Permittee must have adequate legal authority to prohibit IC/IDs to the MS4 and enable enforcement capabilities to eliminate the source of IC/IDs.

iii. Each Permittee's IC/ID Program shall consist of at least the following major program components:

(1) Procedures for conducting source investigations for IC/IDs

(2) Procedures for eliminating the source of IC/IDs

(3) Procedures for public reporting of illicit discharges

(4) Spill response plan

(5) IC/IDs education and training for Permittee staff

b. Illicit Discharge Source Investigation and Elimination

i. Each Permittee shall develop written procedures for conducting investigations to identify the source of all suspected illicit discharges, including procedures to eliminate the discharge once the source is located.

ii. At a minimum, each Permittee shall initiate an investigation(s) to identify and locate the source within 72 hours of becoming aware of the illicit discharge.

iii. When conducting investigations, each Permittee shall comply with the following:

(1) Illicit discharges suspected of being sanitary sewage and/or significantly contaminated shall be investigated first.

(2) Each Permittee shall track all investigations to document at a minimum the date(s) the illicit discharge was observed; the results of the investigation; any follow-up of the investigation; and the date the investigation was closed.

(3) Each Permittee shall investigate the source of all observed illicit discharges.

iv. When taking corrective action to eliminate illicit discharges, each Permittee shall comply with the following:

(1) If the source of the illicit discharge has been determined to originate within the Permittee's jurisdiction, the Permittee shall immediately notify the responsible party/parties of the problem, and require the responsible party to initiate all necessary corrective actions to eliminate the illicit discharge.

Upon being notified that the discharge has been eliminated, the Permittee shall conduct a follow-up investigation to verify that the discharge has been eliminated and cleaned-up to the satisfaction of the Permittee(s). Each Permittee shall document its follow-up investigation. Each Permittee may seek recovery and remediation costs from responsible parties or require compensation for the cost of all inspection, investigation, cleanup and oversight activities. Resulting enforcement actions shall follow the program's Progressive Enforcement Policy, per Part VI.D.2.

(2) If the source of the illicit discharge has been determined to originate within an upstream jurisdiction, the Permittee shall notify the upstream jurisdiction and the Regional Water Board within 30 days of such determination and provide all of the information collected regarding efforts to identify its source. Each Permittee may seek recovery and remediation costs from responsible parties or require compensation for the cost of all inspection, investigation, cleanup and oversight activities. Resulting enforcement actions shall follow the program's Progressive Enforcement Policy, per Part VI.D.2.

(3) If the source of the illicit discharge cannot be traced to a suspected responsible party, affected Permittees shall implement its spill response plan and then initiate a permanent solution as described in section 10.b.v below.

v. In the event the Permittee is unable to eliminate an ongoing illicit discharge following full execution of its legal authority and in accordance with its Progressive Enforcement Policy, or other circumstances prevent the full elimination of an ongoing illicit discharge, including the inability to find the responsible party/parties, the Permittee shall provide for diversion of the entire flow to the sanitary sewer or provide treatment. In either instance, the Permittee shall notify the Regional Water Board in writing within 30 days of such determination and shall provide a written plan for review and comment that describes the efforts that have been undertaken to eliminate the illicit discharge, a description of the actions to be undertaken, anticipated costs, and a schedule for completion.

c. Identification and Response to Illicit Connections

i. Investigation

Each Permittee, upon discovery or upon receiving a report of a suspected illicit connection, shall initiate an investigation within 21 days, to determine the following: (1) source of the connection, (2) nature and volume of discharge through the connection, and (3) responsible party for the connection.

ii. Elimination

Each Permittee, upon confirmation of an illicit MS4 connection, shall ensure that the connection is:

(1) Permitted or documented, provided the connection will only discharge storm water and non-storm water allowed under this Order or other individual or general NPDES Permits/WDRs, or
(2) Eliminated within 180 days of completion of the investigation, using its formal enforcement authority, if necessary, to eliminate the illicit connection.

iii. Documentation

Formal records must be maintained for all illicit connection investigations and the formal enforcement taken to eliminate illicit connections.

d. Public Reporting of Non-Storm Water Discharges and Spills

i. Each Permittee shall promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including phone numbers and an internet site for complaints and spill reporting. Each Permittee shall also provide the reporting hotline to Permittee staff to leverage the field staff that has direct contact with the MS4 in detecting and eliminating illicit discharges.

ii. Each Permittee shall implement the central point of contact and reporting hotline requirements listed in this part in one or more of the following methods:

(1) By participating in a County-wide sponsored hotline

(2) By participating in one or more Watershed Group sponsored hotlines

(3) Or individually within its own jurisdiction

(4) The LACFCD shall, in collaboration with the County, continue to maintain the 888-CLEAN-LA hotline and internet site to promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s.

iii. Each Permittee shall ensure that signage adjacent to open channels, as required in Part F.8.h.vi, include information regarding dumping prohibitions and public reporting of illicit discharges.

iv. Each Permittee shall develop and maintain written procedures that document how complaint calls are received, documented, and tracked to ensure that all complaints are adequately addressed. The procedures shall be evaluated to determine whether changes or updates are needed to ensure that the procedures accurately document the methods employed by the Permittee. Any identified changes shall be made to the procedures subsequent to the evaluation.

v. Each Permittee shall maintain documentation of the complaint calls and record the location of the reported spill or IC/ ID and the actions undertaken in response to all IC/ID complaints, including referrals to other agencies.

e. Spill Response Plan

i. Each Permittee shall implement a spill response plan for all sewage and other spills that may discharge into its MS4. The spill response plan shall clearly identify agencies responsible for spill response and cleanup, telephone numbers and e-mail address for contacts, and shall contain at a minimum the following requirements:

(1) Coordination with spill response teams throughout all appropriate departments, programs and agencies so that maximum water quality protection is provided.

(2) Initiate investigation of all public and employee spill complaints within one business day of receiving the complaint to assess validity.

(3) Response to spills for containment within 4 hours of becoming aware of the spill, except where such spills occur on private property, in which case the response should be within 2 hours of gaining legal access to the property.

(4) Spills that may endanger health or the environment shall be reported to appropriate public health agencies and the Office of Emergency Services (OES).

f. Illicit Connection and Illicit Discharge Education and Training

i. Each Permittee must continue to implement a training program regarding the identification of IC/IDs for all municipal field staff, who, as part of their normal job responsibilities (e.g., street sweeping, storm drain maintenance, collection system maintenance, road maintenance), may come into contact with or otherwise observe an illicit discharge or illicit connection to the MS4. Contact information, including the procedure for reporting an illicit discharge, must be readily available to field staff. Training program documents must be available for review by the permitting authority.

ii. Each Permittee shall ensure contractors performing privatized/contracted municipal services such as, but not limited to, storm and/or sanitary sewer system inspection and repair, street sweeping, trash pick-up and disposal, and street and right-of-way construction and repair are trained regarding IC/ID identification and reporting. Permittees may provide training or include contractual requirements for IC/ID identification and reporting training. Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

iii. Each Permittee's training program should address, at a minimum, the following:

(1) IC/ID identification, including definitions and examples,

(2) investigation,

(3) elimination,

(4) cleanup,

(5) reporting, and

(6) documentation.

iv. Each Permittee must create a list of applicable positions and contractors which require IC/ID training and ensure that training is provided at least twice during the term of the Order. Each Permittee must maintain documentation of the training activities.

v. New Permittee staff members must be provided with IC/ID training within 180 days of starting employment.

E. Total Maximum Daily Load Provisions

1. The provisions of this Part VI.E. implement and are consistent with the assumptions and requirements of all waste load allocations (WLAs) established in TMDLs for which some or all of the Permittees in this Order are responsible.

a. Part VI.E of this Order includes provisions that are designed to assure that Permittees achieve WLAs and meet other requirements of TMDLs covering receiving waters impacted by the Permittees' MS4 discharges. TMDL provisions are grouped by WMA (WMA) in Attachments L through R.

b. The Permittees subject to each TMDL are identified in Attachment K.

c. The Permittees shall comply with the applicable water quality-based effluent limitations and/or receiving water limitations contained in Attachments L through R, consistent with the assumptions and requirements of the WLAs established in the TMDLs, including implementation plans and schedules, where provided for in the State adoption and approval of the TMDL (40 CFR §122.44(d)(1)(vii)(B); Cal. Wat. Code §13263(a)).

d. A Permittee may comply with water quality-based effluent limitations and receiving water limitations in Attachments L through R using any lawful means.

2. Compliance Determination

a. General

i. A Permittee shall demonstrate compliance at compliance monitoring points established in each TMDL or, if not specified in the TMDL, at locations identified in an approved TMDL monitoring plan or in accordance with an approved integrated monitoring program per Attachment E, Part VI.C.5 (Integrated Watershed Monitoring and Assessment).

ii. Compliance with water quality-based effluent limitations shall be determined as described in Parts VI.E.2.d and VI.E.2.e, or for trash water quality-based effluent limitations as described in Part VI.E.5.b, or as otherwise set forth in TMDL specific provisions in Attachments L through R.

iii. Pursuant to Part VI.C, a Permittee may, individually or as part of a watershed-based group, develop and submit for approval by the Regional Water Board Executive Officer a Watershed Management Program that addresses all water quality-based effluent limitations and receiving water limitations to which the Permittee is subject pursuant to established TMDLs.

b. Commingled Discharges

i. A number of the TMDLs establish WLAs that are assigned jointly to a group of Permittees whose storm water and/or non-storm water discharges are or may be commingled in the MS4 prior to discharge to the receiving water subject to the TMDL.

ii. In these cases, pursuant to 40 CFR section 122.26(a)(3)(vi), each Permittee is only responsible for discharges from the MS4 for which they are owners and/or operators.

iii. Where Permittees have commingled discharges to the receiving water, compliance at the outfall to the receiving water or in the receiving water shall be determined for the group of Permittees as a whole unless an individual Permittee demonstrates that its discharge did not cause or contribute to the exceedance, pursuant to subpart v. below.

iv. For purposes of compliance determination, each Permittee is responsible for demonstrating that its discharge did not cause or contribute to an exceedance of an applicable water quality-based effluent limitation(s) at the outfall or receiving water limitation(s) in the target receiving water.

v. A Permittee may demonstrate that its discharge did not cause or contribute to an exceedance of an applicable water quality-based effluent limitation or receiving water limitation in any of the following ways:

(1) Demonstrate that there is no discharge from the Permittee's MS4 into the applicable receiving water during the time period subject to the water quality-based effluent limitation and/or receiving water limitation; or

(2) Demonstrate that the discharge from the Permittee's MS4 is controlled to a level that does not exceed the applicable water quality-based effluent limitation; or

(3) For exceedances of bacteria receiving water limitations or water quality-based effluent limitations, demonstrate through a source investigation pursuant to protocols established under California Water Code section 13178 or for exceedances of other receiving water limitations or water quality-based effluent limitations, demonstrate using other accepted source identification protocols, that pollutant sources within the jurisdiction of the Permittee or the Permittee's MS4 have not caused or contributed to the exceedance of the Receiving Water Limitation(s).

c. Receiving Water Limitations Addressed by a TMDL

i. For receiving water limitations in Part V.A. associated with water body-pollutant combinations addressed in a TMDL, Permittees shall achieve compliance with the receiving water limitations in Part V.A. as outlined in this Part VI.E. and Attachments L through R of this Order.

ii. A Permittee's full compliance with the applicable TMDL requirement(s), including compliance schedules, of this Part VI.E. and Attachments L through R constitutes compliance with Part V.A. of this Order for the specific pollutant addressed in the TMDL.

iii. As long as a Permittee is in compliance with the applicable TMDL requirements in a time schedule order (TSO) issued by the Regional Water Board pursuant to California Water Code sections 13300 and 13385(j)(3), it is not the Regional Water Board's intention to take an enforcement action for violations of Part V.A. of this Order for the specific pollutant(s) addressed in the TSO.

d. Interim Water Quality-Based Effluent Limitations and Receiving Water Limitations

i. A Permittee shall be considered in compliance with an applicable interim water quality-based effluent limitation and interim receiving water limitation for a pollutant associated with a specific TMDL if any of the following is demonstrated:

(1) There are no violations of the interim water quality-based effluent limitation for the pollutant associated with a specific TMDL at the Permittee's applicable MS4 outfall(s),[38] including an outfall to the receiving water that collects discharges from multiple Permittees' jurisdictions;

(2) There are no exceedances of the applicable receiving water limitation for the pollutant associated with a specific TMDL in the receiving water(s) at, or downstream of, the Permittee's outfall(s);

(3) There is no direct or indirect discharge from the Permittee's MS4 to the receiving water during the time period subject to the water quality-based effluent limitation and/or receiving water limitation for the pollutant associated with a specific TMDL; or

(4) The Permittee has submitted and is fully implementing an approved Watershed Management Program or EWMP pursuant to Part VI.C.

(a) To be considered fully implementing an approved Watershed Management Program or EWMP, a Permittee must be implementing

[38] An outfall may include a manhole or other point of access to the MS4 at the Permittee's jurisdictional boundary.

all actions consistent with the approved program and applicable compliance schedules, including structural BMPs.

(b) Structural storm water BMPs or systems of BMPs should be designed and maintained to treat storm water runoff from the 85th percentile, 24-hour storm, where feasible and necessary to achieve applicable WQBELs and receiving water limitations, and maintenance records must be up-to-date and available for inspection by the Regional Water Board.

(c) A Permittee that does not implement the Watershed Management Program in accordance with the milestones and compliance schedules shall demonstrate compliance with its interim water quality-based effluent limitations and/or receiving water limitations pursuant to Part VI.E.2.d.i.(1)-(3), above.

(d) Upon notification of a Permittee's intent to develop a WMP or EWMP and prior to approval of its WMP or EWMP, a Permittee's full compliance with all of the following requirements shall constitute a Permittee's compliance with provisions pertaining to interim WQBELs with compliance deadlines occurring prior to approval of a WMP or EWMP. This subdivision (d) shall not apply to interim trash WQBELs.

(1) Provides timely notice of its intent to develop a WMP or EWMP,

(2) Meets all interim and final deadlines for development of a WMP or EWMP,

(3) For the area to be covered by the WMP or EWMP, targets implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges of pollutants through the MS4 to receiving waters, to address known contributions of pollutants from MS4 discharges that cause or contribute to the impairment(s) addressed by the TMDL(s), and

(4) Receives final approval of its WMP or EWMP within 28 or 40 months, respectively.

e. Final Water Quality-based Effluent Limitations and/or Receiving Water Limitations

i. A Permittee shall be deemed in compliance with an applicable final water quality-based effluent limitation and final receiving water limitation for the pollutant(s) associated with a specific TMDL if any of the following is demonstrated:

(1) There are no violations of the final water quality-based effluent limitation for the specific pollutant at the Permittee's applicable MS4 outfall(s)[39];

(2) There are no exceedances of applicable receiving water limitation for the specific pollutant in the receiving water(s) at, or downstream of, the Permittee's outfall(s);

(3) There is no direct or indirect discharge from the Permittee's MS4 to the receiving water during the time period subject to the water quality-based effluent limitation and/or receiving water limitation for the pollutant(s) associated with a specific TMDL; or

(4) In drainage areas where Permittees are implementing an EWMP, (i) all non-storm water and (ii) all storm water runoff up to and including the volume equivalent to the 85th percentile, 24-hour event is retained for the drainage area tributary to the applicable receiving water. This provision (4) shall not apply to final trash WQBELs.

3. USEPA Established TMDLs

TMDLs established by the USEPA, to which Permittees are subject, do not contain an implementation plan adopted pursuant to California Water Code section 13242. However, USEPA has included implementation recommendations as part of these TMDLs. In lieu of inclusion of numeric water quality based effluent limitations at this time, this Order requires Permittees subject to WLAs in USEPA established TMDLs to propose and implement best management practices (BMPs) that will be effective in achieving compliance with USEPA established numeric WLAs. The Regional Water Board may, at its discretion, revisit this decision within the term of this Order or in a future permit, as more information is developed to support the inclusion of numeric water quality based effluent limitations.

a. Each Permittee shall propose BMPs to achieve the WLAs contained in the applicable USEPA established TMDL(s), and a schedule for implementing the BMPs that is as short as possible, in a Watershed Management Program or EWMP.

b. Each Permittee may either individually submit a Watershed Management Program, or may jointly submit a WMP or EWMP with other Permittees subject to the WLAs contained in the USEPA established TMDL.

c. At a minimum, each Permittee shall include the following information in its Watershed Management Program or EWMP, relevant to each applicable USEPA established TMDL:

i. Available data demonstrating the current quality of the Permittee's MS4 discharge(s) in terms of concentration and/or load of the target pollutant(s) to the receiving waters subject to the TMDL;

[39] Ibid.

ii. A detailed description of BMPs that have been implemented, and/or are currently being implemented by the Permittee to achieve the WLA(s), if any;

iii. A detailed time schedule of specific actions the Permittee will take in order to achieve compliance with the applicable WLA(s);

iv. A demonstration that the time schedule requested is as short as possible, taking into account the time since USEPA establishment of the TMDL, and technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the WLA(s);

(1) For the Malibu Creek Nutrient TMDL established by USEPA in 2003, in no case shall the time schedule to achieve the final numeric WLAs exceed five years from the effective date of this Order; and

v. If the requested time schedule exceeds one year, the proposed schedule shall include interim requirements and numeric milestones and the date(s) for their achievement.

d. Each Permittee subject to a WLA in a TMDL established by USEPA shall submit a draft of a Watershed Management Program or EWMP to the Regional Water Board Executive Officer for approval per the schedule Part VI.C.4.

e. If a Permittee does not submit a Watershed Management Program, or the plan is determined to be inadequate by the Regional Water Board Executive Officer and the Permittee does not make the necessary revisions within 90 days of written notification that plan is inadequate, the Permittee shall be required to demonstrate compliance with the numeric WLAs immediately based on monitoring data collected under the MRP (Attachment E) for this Order.

4. State Adopted TMDLs where Final Compliance Deadlines have Passed

a. Permittees shall comply immediately with water quality-based effluent limitations and/or receiving water limitations to implement WLAs in state-adopted TMDLs for which final compliance deadlines have passed pursuant to the TMDL implementation schedule.

b. Where a Permittee believes that additional time to comply with the final water quality-based effluent limitations and/or receiving water limitations is necessary, a Permittee may within 45 days of Order adoption request a time schedule order pursuant to California Water Code section 13300 for the Regional Water Board's consideration.

c. Permittees may either individually request a TSO, or may jointly request a TSO with all Permittees subject to the water quality-based effluent limitations and/or receiving water limitations, to implement the WLAs in the state-adopted TMDL.

d. At a minimum, a request for a time schedule order shall include the following:

i. Data demonstrating the current quality of the MS4 discharge(s) in terms of concentration and/or load of the target pollutant(s) to the receiving waters subject to the TMDL;

ii. A detailed description and chronology of structural controls and source control efforts, since the effective date of the TMDL, to reduce the pollutant load in the MS4 discharges to the receiving waters subject to the TMDL;

iii. Justification of the need for additional time to achieve the water quality-based effluent limitations and/or receiving water limitations;

iv. A detailed time schedule of specific actions the Permittee will take in order to achieve the water quality-based effluent limitations and/or receiving water limitations;

v. A demonstration that the time schedule requested is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the effluent limitation(s); and

vi. If the requested time schedule exceeds one year, the proposed schedule shall include interim requirements and the date(s) for their achievement. The interim requirements shall include both of the following:

(1) Effluent limitation(s) for the pollutant(s) of concern; and

(2) Actions and milestones leading to compliance with the effluent limitation(s).

5. Water Quality-Based Effluent Limitations for Trash

Permittees assigned a Waste Load Allocation in a trash TMDL shall comply as set forth below.

a. Effluent Limitations: Permittees shall comply with the interim and final water quality-based effluent limitations for trash set forth in Attachments L through R for the following Trash TMDLs:

i. Lake Elizabeth Trash TMDL (Attachment L)

ii. Santa Monica Bay Nearshore and Offshore Debris TMDL (Attachment M)

iii. Malibu Creek Watershed Trash TMDL (Attachment M)

iv. Ballona Creek Trash TMDL (Attachment M)

v. Machado Lake Trash TMDL (Attachment N)

vi. Los Angeles River Trash TMDL (Attachment O)

vii. Peck Road Park Lake Trash TMDL (Attachment O)

viii. Echo Park Lake Trash TMDL (Attachment O)

ix. Legg Lake Trash TMDL (Attachment O)

b. Compliance

i. Pursuant to California Water Code section 13360(a), Permittees may comply with the trash effluent limitations using any lawful means. Such compliance options are broadly classified as ***full capture***, ***partial capture, institutional controls,*** or ***minimum frequency of assessment and collection,*** as described below, and any combination of these may be employed to achieve compliance:

(1) Full Capture Systems:

(a) The Basin Plan authorizes the Regional Water Board Executive Officer to certify ***full capture systems***, which are systems that meet the operating and performance requirements as described in this Order, and the procedures identified in "Procedures and Requirements for Certification of a Best Management Practice for Trash Control as a Full Capture System."[40]

(b) Permittees are authorized to comply with their effluent limitations through certified ***full capture systems*** provided the requirements of paragraph (c), immediately below, and any conditions in the certification, continue to be met.

(c) Permittees may comply with their effluent limitations through progressive installation of ***full capture systems*** throughout their jurisdictional areas until all areas draining to Lake Elizabeth, Santa Monica Bay, Malibu Creek, Ballona Creek, Machado Lake, the Los Angeles River system, Legg Lake, Peck Road Park Lake, and/or Echo Park Lake are addressed. For purposes of this Order, attainment of the effluent limitations shall be conclusively presumed for any drainage area to Lake Elizabeth, Santa Monica Bay, Malibu Creek (and its tributaries), Ballona Creek (and its tributaries), Machado Lake, the Los Angeles River (and its tributaries), Legg Lake, Peck Road Park Lake, and/or Echo Park Lake where certified ***full capture systems*** treat all drainage from the area, provided that the ***full capture systems*** are adequately sized and maintained, and that maintenance records are up-to-date and available for inspection by the Regional Water Board.

[40] The Regional Water Board currently recognizes eight ***full capture systems***. These are: Vortex Separation Systems (VSS) and seven other Executive Officer certified ***full capture systems***, including specific types or designs of trash nets; two gross solids removal devices (GSRDs); catch basin brush inserts and mesh screens; vertical and horizontal trash capture screen inserts; and a connector pipe screen device. See August 3, 2004 Los Angeles Regional Water Quality Control Board Memorandum titled "Procedures and Requirements for Certification of a Best Management Practice for Trash Control as a Full Capture System.

(i) A Permittee shall be deemed in compliance with its final effluent limitation if it demonstrates that all drainage areas under its jurisdiction and/or authority are serviced by appropriate certified ***full capture systems*** as described in paragraph (1)(c).

(ii) A Permittee shall be deemed in compliance with its interim effluent limitations, where applicable:

1. By demonstrating that ***full capture systems*** treat the percentage of drainage areas in the watershed that corresponds to the required trash abatement.

2. Alternatively, a Permittee may propose a schedule for installation of ***full capture systems*** in areas under its jurisdiction and/or authority within a given watershed, targeting first the areas of greatest trash generation, for the Executive Officer's approval. The Executive Officer shall not approve any such schedule that does not result in timely compliance with the final effluent limitations, consistent with the established TMDL implementation schedule and applicable State policies. A Permittee shall be deemed in compliance with its interim effluent limitations provided it is fully in compliance with any such approved schedule.

(2) Partial Capture Devices and Institutional Controls: Permittees may comply with their interim and final effluent limitations through the installation of ***partial capture devices*** and the application of ***institutional controls***.[41]

(a) Trash discharges from areas serviced solely by ***partial capture devices*** may be estimated based on demonstrated performance of the device(s) in the implementing area.[42] That is, trash reduction is equivalent to the ***partial capture devices'*** trash removal efficiency multiplied by the percentage of drainage area serviced by the devices.

(b) Except as provided in subdivision (c), immediately below, trash discharges from areas addressed by ***institutional controls*** and/or ***partial capture devices*** (where site-specific performance data is not available) shall be calculated using a mass balance approach, based on the daily generation rate (DGR) for a representative area.[43] The DGR shall be determined from direct measurement of trash deposited in the drainage area during any thirty-day period between June 22nd and September 22nd exclusive of rain events[44], and shall be re-calculated every year thereafter unless a less frequent period for recalculation is approved by the Regional Water Board Executive Officer. The DGR

[41] While interim effluent limitations may be complied with using ***partial capture devices***, compliance with final effluent limitations cannot be achieved with the exclusive use of ***partial capture devices***.
[42] Performance shall be demonstrated under different conditions (e.g. low to high trash loading).
[43] The area(s) should be representative of the land uses and activities within the Permittees' authority and shall be approved by the Executive Officer prior to the 30-day collection period.
[44] Provided no special events are scheduled that may affect the representative nature of that collection period.

shall be calculated as the total amount of trash collected during this period divided by the length of the collection period.

DGR = (Amount of trash collected during a 30-day collection period[45] / (30 days)

The DGR for the applicable area under the Permittees' jurisdiction and/or authority shall be extrapolated from that of the representative drainage area(s). A mass balance equation shall be used to estimate the amount of trash discharged during a storm event.[46] The ***Storm Event Trash Discharge*** for a given rain event in the Permittee's drainage area shall be calculated by multiplying the number of days since the last street sweeping by the DGR and subtracting the amount of any trash recovered in the catch basins.[47] For each day of a storm event that generates precipitation greater than 0.25 inch, the Permittee shall calculate a ***Storm Event Trash Discharge***.

Storm Event Trash Discharge = [(Days since last street sweeping*DGR)] – [Amount of trash recovered from catch basins][48]

The sum of the ***Storm Event Trash Discharges*** for the storm year shall be the Permittee's calculated annual trash discharge.

Total Storm Year Trash Discharge = ∑Storm Event Trash Discharges from Drainage Area

(c) The Executive Officer may approve alternative compliance monitoring approaches for calculating total storm year trash discharge, upon finding that the program will provide a scientifically-based estimate of the amount of trash discharged from the Permittee's MS4.

(3) Combined Compliance Approaches:

Permittees may comply with their interim and final effluent limitations through a combination of ***full capture systems***, ***partial capture devices***, and ***institutional controls***. Where a Permittee relies on a combination of approaches, it shall demonstrate compliance with the interim and final effluent limitations as specified in (1)(c) in areas where ***full capture systems*** are installed and as specified in (2)(a) or (2)(b), as appropriate, in areas where ***partial capture devices*** and ***institutional controls*** are applied.

(4) Minimum Frequency of Assessment and Collection Approach:

If allowed in a trash TMDL and approved by the Executive Officer, a Permittee may alternatively comply with its final effluent limitations by

[45] Between June 22nd and September 22nd
[46] Amount of trash shall refer to the uncompressed volume (in gallons) or drip-dry weight (in pounds) of trash collected.
[47] Any negative values shall be considered to represent a zero discharge.
[48] When more than one storm event occurs prior to the next street sweeping the discharge shall be calculated from the date of the last assessment.

implementing a program for ***minimum frequency of assessment and collection*** (MFAC) in conjunction with BMPs. To the satisfaction of the Executive Officer, the MFAC/BMP program must meet the following criteria:

(a) The MFAC/BMP Program includes an initial minimum frequency of trash assessment and collection and suite of structural and/or nonstructural BMPs. The MFAC/BMP program shall include collection and disposal of all trash found in the receiving water and shoreline. Permittees shall implement an initial suite of BMPs based on current trash management practices in land areas that are found to be sources of trash to the water body. The initial minimum frequency of trash assessment and collection shall be set as specified in the following TMDLs:

  (i) Malibu Creek Watershed Trash TMDL

  (ii) Machado Lake Trash TMDL

  (iii) Legg Lake Trash TMDL

(b) The MFAC/BMP Program includes reasonable assurances that it will be implemented by the responsible Permittees.

(c) MFAC protocols may be based on SWAMP protocols for rapid trash assessment, or alternative protocols proposed by Permittees and approved by the Regional Water Board Executive Officer.

(d) Implementation of the MFAC/BMP program should include a Health and Safety Program to protect personnel. The MFAC/BMP program shall not require Permittees to access and collect trash from areas where personnel are prohibited.

(e) The Regional Water Board Executive Officer may approve or require a revised assessment and collection frequency and definition of the critical conditions under the MFAC:

  (i) To prevent trash from accumulating in deleterious amounts that cause nuisance or adversely affect beneficial uses between collections;

  (ii) To reflect the results of trash assessment and collection;

  (iii) If the amount of trash collected does not show a decreasing trend, where necessary, such that a shorter interval between collections is warranted; or

  (iv) If the amount of trash collected is decreasing such that a longer interval between collections is warranted.

(f) At the end of the implementation period, a revised MFAC/BMP program may be required if the Regional Water Board Executive Officer determines that the amount of trash accumulating between

collections is causing nuisance or otherwise adversely affecting beneficial uses.

(g) With regard to (4)(e)(i), (4)(e)(ii), or (4)(e)(iii), above, the Regional Water Board Executive Officer is authorized to allow responsible Permittees to implement additional structural or non-structural BMPs in lieu of modifying the monitoring frequency.

ii. If a Permittee is not in compliance with its applicable interim and/or final effluent limitation as identified in Attachments L through R, then it shall be in violation of this Order.

(1) A Permittee relying on ***partial capture devices*** and/or ***institutional controls*** that has violated its interim and/or final effluent limitation(s) shall be presumed to have violated the applicable limitation for each day of each storm event that generated precipitation greater than 0.25 inch during the applicable storm year, except those storm days on which it establishes that its cumulative Storm Event Trash Discharges has not exceeded the applicable effluent limitation.

(2) If a Permittee relying on ***full capture systems*** has failed to demonstrate that the ***full capture systems*** for any drainage area are adequately sized and maintained, and that maintenance records are up-to-date and available for inspection by the Regional Water Board, and that it is in compliance with any conditions of its certification, shall be presumed to have discharged trash in an amount that corresponds to the percentage of the baseline waste load allocation represented by the drainage area in question.

(a) A Permittee may overcome this presumption by demonstrating (using any of the methods authorized in Part VI.E.5.b) that the actual or calculated discharge for that drainage area is in compliance with the applicable interim or final effluent limitation.

iii. Each Permittee shall be held liable for violations of the effluent limitations assigned to their area. If a Permittee's compliance strategy includes ***full*** or ***partial capture devices*** and it chooses to install a full or partial capture device in the MS4 physical infrastructure of another public entity, it is responsible for obtaining all necessary permits to do so. If a Permittee believes it is unable to obtain the permits needed to install a full capture or partial capture device within another Permittee's MS4 physical infrastructure, either Permittee may request the Executive Officer to hold a conference with the Permittees. Nothing in this Order shall affect the right of that public entity or a Permittee to seek indemnity or other recourse from the other as they deem appropriate. Nothing in this subsection shall be construed as relieving a Permittee of any liability that the Permittee would otherwise have under this Order.

c. Monitoring and Reporting Requirements (pursuant to California Water Code section 13383)

i. Each Permittee shall submit a TMDL Compliance Report as part of its Annual Report detailing compliance with the applicable interim and/or final effluent limitations. Reporting shall include the information specified below. The report shall be submitted on the reporting form specified by the Regional Water Board Executive Officer. The report shall be signed under penalty of perjury by the Permittee's principal executive officer or ranking elected official or duly authorized representative of the officer, consistent with Part V.B of Attachment D (Standard Provisions), who is responsible for ensuring compliance with this Order. Each Permittee shall be charged with and shall demonstrate compliance with its applicable effluent limitations beginning with its December 15, 2013, TMDL Compliance Report.

(1) Reporting Compliance based on Full Capture Systems: Permittees shall provide information on the number and location of full capture installations, the sizing of each full capture installation, the drainage areas addressed by these installations, and compliance with the applicable interim or final effluent limitation, in its TMDL Compliance Report. The Los Angeles Water Board will periodically audit sizing, performance, and other data to validate that a system satisfies the criteria established for a ***full capture system*** and any conditions established by the Regional Water Board Executive Officer in the certification.

(2) Reporting Compliance based on Partial Capture Systems and/or Institutional Controls:

(a) Using Performance Data Specific to the Permittee's Area: In its TMDL Compliance Report, a Permittee shall provide: (i) site-specific performance data for the applicable device(s); (ii) information on the number and location of such installations, and the drainage areas addressed by these installations; and (iii) calculated compliance with the applicable effluent limitations.

(b) Using Direct Measurement of Trash Discharge: Permittees shall provide an accounting of DGR and trash removal via street sweeping, catch basin clean outs, etc., in a database to facilitate the calculation of discharge for each rain event. The database shall be maintained and provided to the Regional Water Board for inspection upon request. In its TMDL Compliance Report, a Permittee shall provide information on its annual DGR, calculated storm year discharge, and compliance with the applicable effluent limitation.

(3) Reporting Compliance based on Combined Compliance Approaches:

Permittees shall provide the information specified in Part VI.E.5.c.i(1) for areas where ***full capture systems*** are installed and that are specified in Part VI.E.5.c.i(2)(a) or (b), as appropriate, for areas where ***partial capture devices*** and ***institutional controls*** are applied. In its TMDL Compliance Report, a Permittee shall also provide information on compliance with the applicable effluent limitation based on the combined compliance approaches.

Santa Monica Bay
Nearshore and Offshore Debris TMDL

Final Draft: October 25, 2010

California Regional Water Quality Control Board
Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, California 90013

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Introduction

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) has developed this total maximum daily load (TMDL) to attain the water quality standards for debris in the nearshore and offshore areas of Santa Monica Bay (Santa Monica Bay Debris TMDL). The TMDL has been prepared pursuant to state and federal requirements to preserve and enhance water quality for impaired waterbodies within the Coastal Watersheds of Los Angeles and Ventura Counties.

The California Water Quality Control Plan, Los Angeles Region (Basin Plan) sets standards for surface waters and ground waters in the Coastal Watersheds of Los Angeles and Ventura Counties. These standards are comprised of designated beneficial uses for surface and ground water, numeric and narrative objectives necessary to support beneficial uses, and the state's antidegradation policy. Such standards are mandated for all waters of the state under the Porter-Cologne Water Quality Act, and for waters of the U.S. under the Federal Clean Water Act. In addition, the Basin Plan describes implementation programs to protect all waters in the region. The Basin Plan implements the Porter-Cologne Water Quality Act (also known as the "California Water Code") and serves as the State Water Quality Control Plan applicable to the Santa Monica Bay, as required pursuant to the federal Clean Water Act (CWA). The Porter-Cologne Water Quality Control Act specifically addresses preproduction plastic debris (plastic resin pellets and powdered coloring for plastics). Chapter 5.2, Section 13367, requires the State and Regional Boards to implement a program for the control of preproduction plastics from point and nonpoint sources.

Section 305(b) of the CWA mandates biennial assessment of the nation's water resources, and these water quality assessments are used to identify and list impaired waters. The resulting list is referred to as the 303(d) list. The CWA also requires states to establish a priority ranking for impaired waters and to develop and implement TMDLs. A TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and allocates pollutant loadings to point and nonpoint sources.

The United States Environmental Protection Agency (USEPA) has oversight authority for the 303(d) program and must approve or disapprove the state's 303(d) lists and each specific TMDL. USEPA is ultimately responsible for issuing a TMDL, if the state fails to do so in a timely manner.

As part of California's 1998, 2002, and 2006 303(d) list submittals, the Regional Board identified the nearshore and offshore areas of Santa Monica Bay as being impaired by debris.

A consent decree between the USEPA, the Santa Monica BayKeeper and Heal the Bay Inc., represented by the Natural Resources Defense Council (NRDC), was signed on March 22, 1999. The Consent Decree requires that all TMDLs for the Los Angeles Region be addressed within 13 years. The consent decree also prescribes schedules for

certain TMDLs. The TMDL for the nearshore and offshore areas of Santa Monica Bay corresponds to Analytical Unit #66 of the Consent Decree.

This TMDL staff report and accompanying Basin Plan amendment establish the numeric targets for trash and plastic pellet discharges, baseline and final waste load allocations for point source trash and plastic pellets, and baseline and final load allocations for nonpoint source trash, a margin of safety, a program of implementation for point and nonpoint sources, an implementation schedule, and monitoring requirements.

The Debris TMDL for the nearshore and offshore areas of Santa Monica Bay will be adopted as an amendment to the Basin Plan and is therefore subject to Public Resources Code Section 21083.9 that requires California Environmental Quality Act (CEQA) Scoping and Analysis to be conducted for Regional Projects. CEQA Scoping involves identifying a range of project/program related actions, alternatives, mitigation measures, and significant effects to be analyzed in an EIR or its Substitute Environmental Documents (SEDs). On March 23, 2010 a CEQA Scoping meeting was held at the Hyperion Treatment Plant to present and discuss the foreseeable potential environmental impacts of compliance with the Debris TMDL for the nearshore and offshore areas of Santa Monica Bay. Notice of the CEQA Scoping meeting was circulated in the Los Angeles Times on February 19, 2010 and posted on the Regional Board's website. Electronic notification was also sent to interested parties including cities and/or counties with jurisdiction in or bordering the watershed of concern. Input from all stakeholders and interested parties was solicited for consideration in the development of the CEQA documents.

The Santa Monica Bay Debris TMDL is based on existing, readily available information concerning the conditions in Santa Monica Bay and the contributing watershed areas, as well as TMDLs previously developed by the State and USEPA.

I. Problem Statement

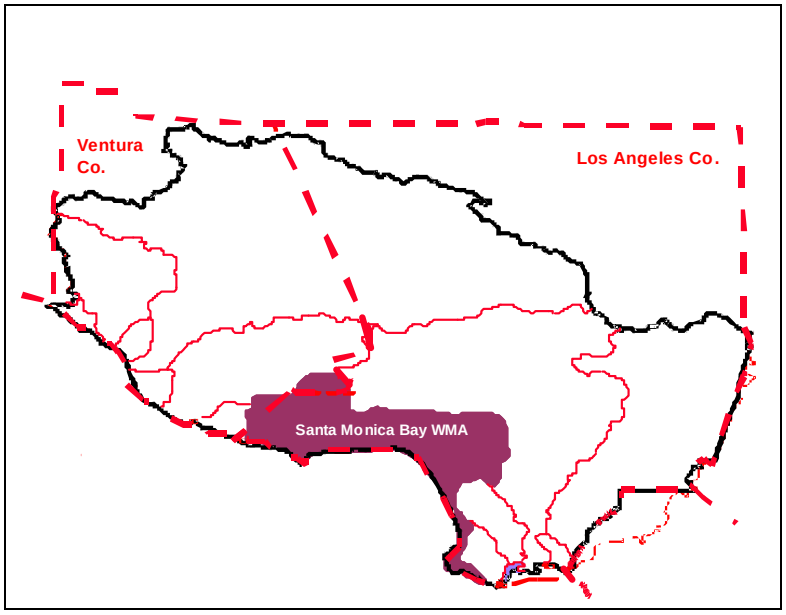
The problem statement consists of descriptions of the waterbody and watershed, the waterbody's designated beneficial uses, applicable water quality objectives, and impairments caused by debris to the nearshore and offshore areas of the Santa Monica Bay.

A. Description of the Santa Monica Bay Watershed

The Santa Monica Bay is an integral part of the larger geographic region commonly known as the Southern California Bight. It is bordered offshore by the Santa Monica Basin, to the north by the rocky headlands of Point Dume and to the south by the Palos Verdes Peninsula, and onshore by the Los Angeles Coastal Plain and the Santa Monica Mountains. The 414 square mile area of land that drains naturally to the Bay, known as the Santa Monica Bay watershed, is bordered on the north by the Santa Monica Mountains from the Ventura-Los Angeles County line to Griffith Park, extending south

and west across the Los Angeles coastal plain to include the area east of Ballona Creek and north of Baldwin Hills. South of Ballona Creek, a narrow coastal strip between Playa del Rey and the Palos Verdes Peninsula forms the southern boundary of the watershed. Figure 1 illustrates the county lines and the boundaries of the Santa Monica Bay Watershed.

Figure 1. Santa Monica Bay Watershed Management Area



The Santa Monica Bay itself is the submerged portion of the Los Angeles Coastal Plain. The continental shelf extends seaward to the shelf break about 265 feet underwater, then drops steeply to the Santa Monica Basin at about 2,630 feet.

The Debris TMDL addresses nearshore and offshore Santa Monica Bay. Nearshore Santa Monica Bay is defined by the Ocean Plan as, within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot contour, whichever is further from the shoreline. Offshore is defined as the waters between the nearshore zone and the limit of state waters. Lastly, state waters, according to section 13200 of the California Water Code, extend three nautical miles into the Pacific Ocean from the line of mean lower low water marking the seaward limits of inland waters and three nautical miles from the line of mean lower low water on the mainland and each offshore island.

The Santa Monica Bay watershed has an estimated population of 1,950,265 based on the 2000 U.S. Census. Open space represents the primary land use in the watershed (55%), while high-density residential areas represent the largest developed area (25% of the total watershed). Low-density residential constitutes 5% of the land area. Commercial, industrial and mixed urban areas cover 10%. The remaining 5% of land area is covered by transportation (1.7%), educational institutions (1.6%), agriculture (0.8%),

recreational uses (0.8%), public facilities and military installations (0.2%), and water (0.4%).

In general, the northern part of the Santa Monica Bay (northwest of Santa Monica subwatershed) is not as highly developed and urbanized as the southern part of the Bay (southeast of Santa Monica Canyon subwatershed). Subwatersheds in the northern part of the Bay have on average 85% of their land area in open space. Subwatersheds in the central and southern portion of the Bay have on average 16% of their area in open space.

A.1 Santa Monica Bay Subwatersheds

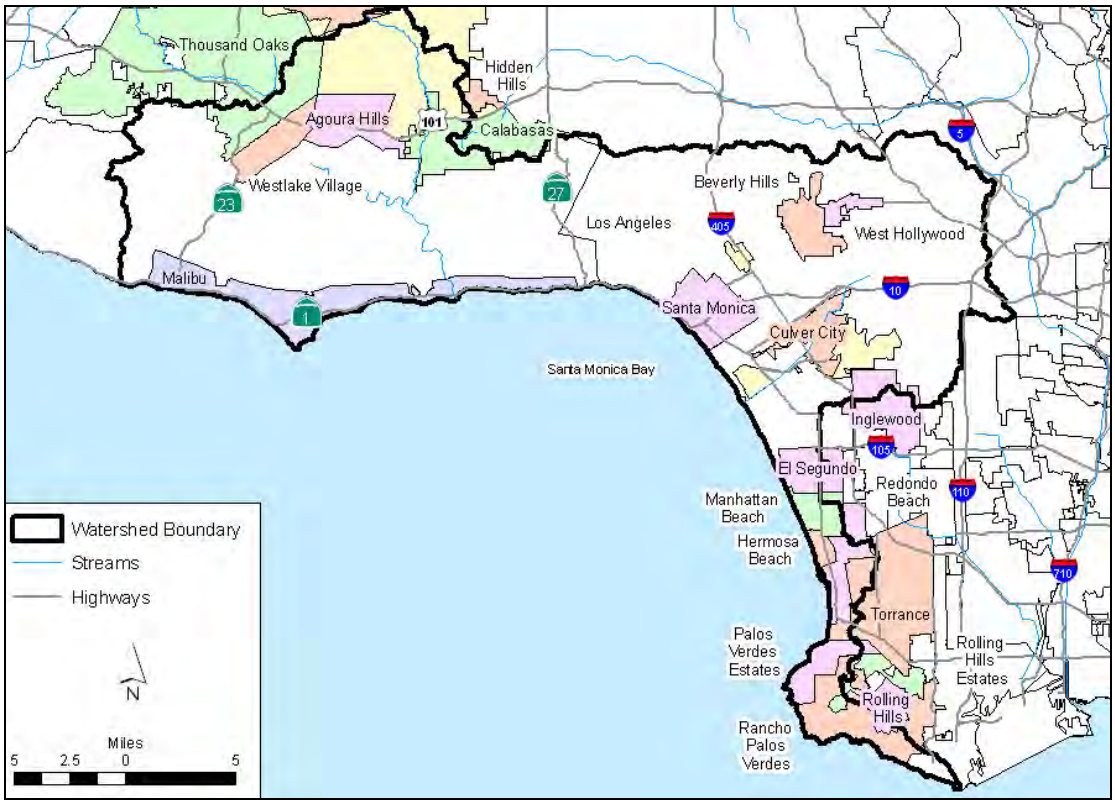
Table 1 lists the 28 separate sub-watersheds and associated cities within the larger Santa Monica Bay watershed (Figure 2). The three largest are Ballona Creek, Malibu Creek, and Topanga Canyon watershed. There are existing trash TMDLs for the Ballona Creek Watershed and the Malibu Creek Watershed. The Ballona Creek Trash TMDL became effective on August 11, 2005, and the Malibu Creek Trash TMDL became effective on March 17, 2009.

Table 1. Subwatersheds of the Santa Monica Bay

Subwatershed	City
Arroyo Sequit	Malibu, Los Angeles County Unincorporated
Ballona Creek	Culver City, Inglewood, Los Angeles, Beverly Hills, West Hollywood, Marina del Rey, Santa Monica, Los Angeles County Unincorporated
Carbon Canyon	Malibu, Los Angeles County Unincorporated
Castle Rock	Los Angeles, Los Angeles County Unincorporated
Corral Canyon	Malibu, Los Angeles County Unincorporated
Dockweiler	El Segundo, Los Angeles, Manhattan Beach, Los Angeles County Unincorporated
Encinal Canyon	Malibu, Los Angeles County Unincorporated
Escondido Canyon	Malibu, Los Angeles County Unincorporated
Hermosa	El Segundo, Hermosa Beach, Manhattan Beach, Redondo Beach
Las Flores Canyon	Malibu, Los Angeles County Unincorporated
Latigo Canyon	Malibu, Los Angeles County Unincorporated
Los Alisos Canyon	Malibu, Los Angeles County Unincorporated
Malibu Creek	Agoura Hills, Calabasas, Hidden Hills, Simi Valley, Thousand Oaks, Westlake Village, Malibu, Los Angeles County Unincorporated, Ventura County Unincorporated
Nicholas Canyon	Malibu, Los Angeles County Unincorporated
Palos Verdes	Los Angeles, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Torrance, Los Angeles County Unincorporated
Pena Canyon	Malibu, Los Angeles County Unincorporated
Piedra Gorda Canyon	Malibu, Los Angeles County Unincorporated
Pulga Canyon	Los Angeles
Ramirez Canyon	Malibu, Los Angeles County Unincorporated

Redondo	Hermosa Beach, Manhattan Beach, Redondo Beach, Torrance, Los Angeles County Unincorporated
Santa Monica	Los Angeles, Santa Monica, Los Angeles County Unincorporated
Santa Monica Canyon	Los Angeles, Santa Monica
Santa Ynez	Los Angeles
Solstice Canyon	Malibu, Los Angeles County Unincorporated
Topanga Canyon	Calabasas, Los Angeles, Los Angeles County Unincorporated
Trancas Canyon	Malibu, Los Angeles County Unincorporated
Tuna Canyon	Malibu, Los Angeles County Unincorporated
Zuma Canyon	Malibu, Los Angeles County Unincorporated

Figure 2. Cities in the Santa Monica Bay Watershed



A.1.1 Ballona Creek Subwatershed

The largest subwatershed of Santa Monica Bay is the Ballona Creek Watershed, which covers approximately 130 square miles, and is located in the coastal plain of the Los Angeles Basin (Figure 3). Its boundaries are defined by the Santa Monica Mountains to the north, the Harbor Freeway (110) to the East, and Baldwin Hills to the south. Ballona Creek Watershed includes the Cities of Beverly Hills and West Hollywood, and portions of the cities of Culver City, Inglewood, Los Angeles, Santa Monica, and unincorporated areas of Los Angeles County. The Ballona Creek Watershed is highly

developed with high-density single family residential, multiple family residential, and mixed residential areas as the primary land uses in the watershed.

Ballona Creek is a concrete-lined, open channel for just under 10 miles which flows from Los Angeles (south of Hancock Park) through Culver City, eventually transitioning to the Ballona Creek Estuary, where concrete is replaced by grouted riprap side slopes and a natural bottom. Ballona Creek Estuary empties into the Pacific Ocean at Dockweiler Beach in Playa del Rey. Ballona Creek is fed by a complex underground network of storm drains, which reaches north to Beverly Hills and West Hollywood. Tributaries of the creek and estuary include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains. Ballona Creek is designed to discharge to Santa Monica Bay approximately 71,400 cubic feet per second from a 50-year frequency storm event (LADPW).

A.1.2 Malibu Creek Subwatershed

The next largest subwatershed of the Santa Monica Bay watershed is the Malibu Creek watershed. The Malibu Creek Watershed is 109 square miles, and is located roughly 35 miles west of Los Angeles. The Malibu Creek Watershed extends north from Santa Monica Bay and through the Santa Monica Mountains to the Simi Hills and Santa Susanna Mountains. The watershed is defined by US Highway 101 (Ventura Freeway) and California Highway 1 (Pacific Coast Highway). The Malibu Creek watershed encompasses unincorporated portions of Ventura and Los Angeles Counties, and seven cities including Malibu, Calabasas, Agoura Hills, Thousand Oaks, and Westlake Village and portions of Simi Valley and Hidden Hills. The dominant land use in this subwatershed is open space. Other land uses include: agriculture, recreation, and urbanized land uses including high and low density residential areas and commercial and industrial areas. Malibu Creek State Park is located in the Malibu Creek watershed.

Malibu Creek flows year-round, beginning at Malibou Lake and ending at Malibu Lagoon, where Malibu Creek empties into the Pacific Ocean in Santa Monica Bay. Malibu Creek is approximately 11 miles long, and is a receiving water body of urban and stormwater runoff from a network of storm drains and various types of open space throughout the watershed. Tributaries of Malibu Creek start in the Santa Monica Mountains and include the following: Lindero Canyon Creek, Lake Lindero, Medea Creek, Palo Comado Canyon Creek, Cheeseboro Canyon Creek, Las Virgenes Creek, Hidden Valley Creek, Lake Sherwood, Potrero Valley Creek, Westlake Lake, Triunfo Creek, Lake Enchanto, Malibou Lake, Malibu Creek, Las Virgenes Creek, Malibu Lagoon and Cold Creek. Malibu Creek outlets to the Santa Monica Bay through Malibu Lagoon at Surfrider Beach.

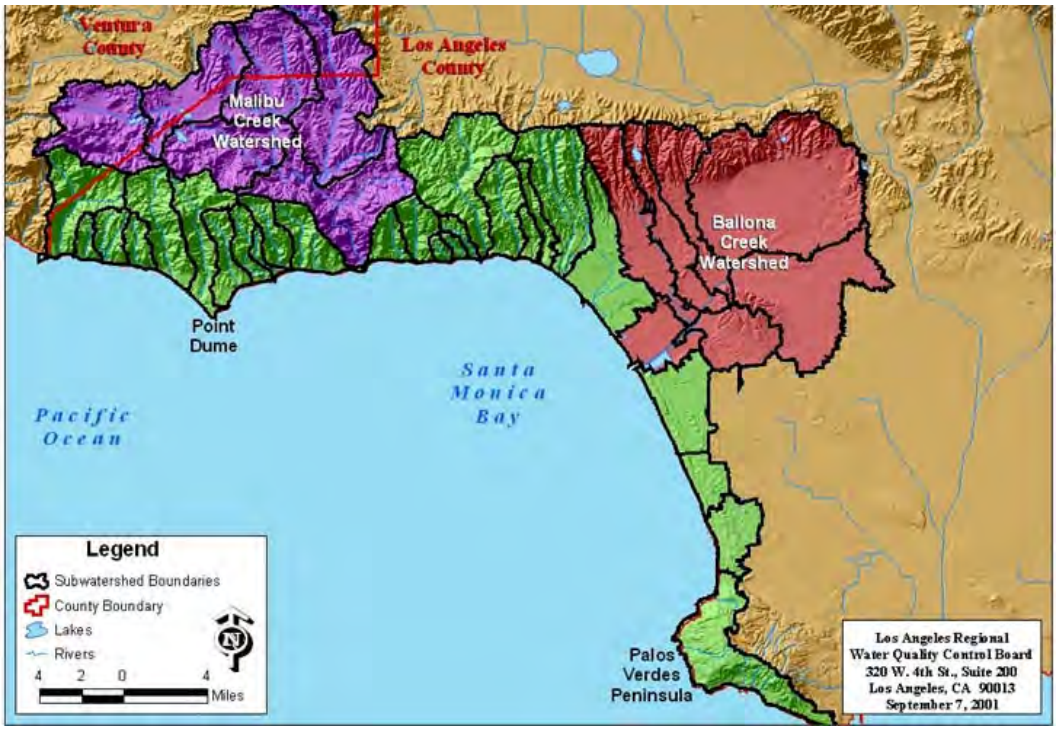
A.1.3 Topanga Canyon Subwatershed

The other major subwatershed in the Santa Monica Bay watershed is the Topanga Canyon watershed, which covers approximately 18 square miles. It is bounded on three sides by State Park or conservancy lands, and on the south by the Pacific Ocean and a small strip of Malibu, and Pacific Palisades to the east. Topanga Beach is on the coast at the outlet of Topanga Creek, just south of Malibu. Topanga Canyon contains lands of

both Topanga State Park, which is the largest park in the Santa Monica Mountains, and the Santa Monica Mountains Conservancy. Topanga State Park is part of the Santa Monica Mountains National Recreation Area. Although there are residential areas in the Topanga Canyon watershed, a large portion of the watershed is undeveloped.

Topanga Creek drains Topanga Canyon, and is one of the few remaining undammed waterways in the area. Topanga Canyon Boulevard is the main thoroughfare connecting the Ventura Freeway (US 101) with Pacific Coast Highway (SR 1). The southern portion of the boulevard largely parallels Topanga Creek.

Figure 3. Major Subwatersheds, Streams, and Lakes of the Santa Monica Bay Watershed



A.2 Santa Monica Bay Beaches

Santa Monica Bay is surrounded by fifty-five miles of shoreline and numerous public beaches. As there are differences in the characteristics and land uses of the beaches along the Santa Monica Bay, in this TMDL the beaches have been separated into north bay and south bay beaches. The north bay beaches are located north of the City of Santa Monica, while those referred to as south bay beaches are south of Santa Monica.

The north bay beaches are generally flanked by more open space and roads, as the northern Santa Monica Bay watershed is not as urbanized as the southern part of the watershed. North of Santa Monica, Pacific Coast Highway parallels the coastline and the beaches along the bay.

The beaches located in the south Santa Monica Bay area are commonly adjacent to residential areas. For example, there are high-density residences along The Strand directly adjacent to Redondo, Hermosa, and Manhattan Beach.

Dockweiler State Beach, located in mixed areas containing residences and open space, is the largest beach in both length and acreage in the south bay. It stretches 3.8 miles, and covers 255 acres (County of Los Angeles, Department of Beaches and Harbors).

There are numerous storm drains and 40 dry weather diversions and three treatment facilities that end at the beaches of the Santa Monica Bay. Refer to the point sources section of the Source Analysis chapter for a map and list of locations.

Los Angeles County Department of Beaches and Harbors, California Department of Parks and Recreation, City of Los Angeles, City of Santa Monica, and City of Hermosa Beach own and/or operate a majority of the beaches along the Santa Monica Bay, as seen in Table 2 and Figure 4.

Table 2. Management of Santa Monica Bay Beaches

Beaches Operated by Los Angeles County Department of Beaches and Harbors
Latigo Shores County Beach
Dan Blocker Memorial Beach
Malibu Lagoon (Surfrider) Beach
Las Tunas Beach
Topanga Beach
Will Rogers State Beach (owned by the State of California)
Venice Beach (owned by the City of Los Angeles)
Marina Beach
Dockweiler State Beach (owned by the State of California)
Manhattan Beach
Hermosa Beach (owned by the City of Hermosa Beach)
Redondo Beach
Torrance Beach
Royal Palms Beach
White Point Beach
Point Fermin Beach
Beach Operated by City of Santa Monica
Santa Monica State Beach (owned by the State of California)

Figure 4. Beaches owned or operated by Los Angeles County

A.3 Santa Monica Bay

Santa Monica Bay is comprised of different geological substrate types within nearshore and offshore areas: rocky intertidal, soft bottom, and hard bottom. Figure 5 shows a map of the landmarks described in the various substrate types, below. The shaded subwatersheds represent areas that are covered by the Santa Monica Bay Debris TMDL. Unshaded subwatersheds are either covered by the existing Malibu Creek and Ballona Creek Trash TMDLs, or not included in the Santa Monica Bay Debris TMDL.

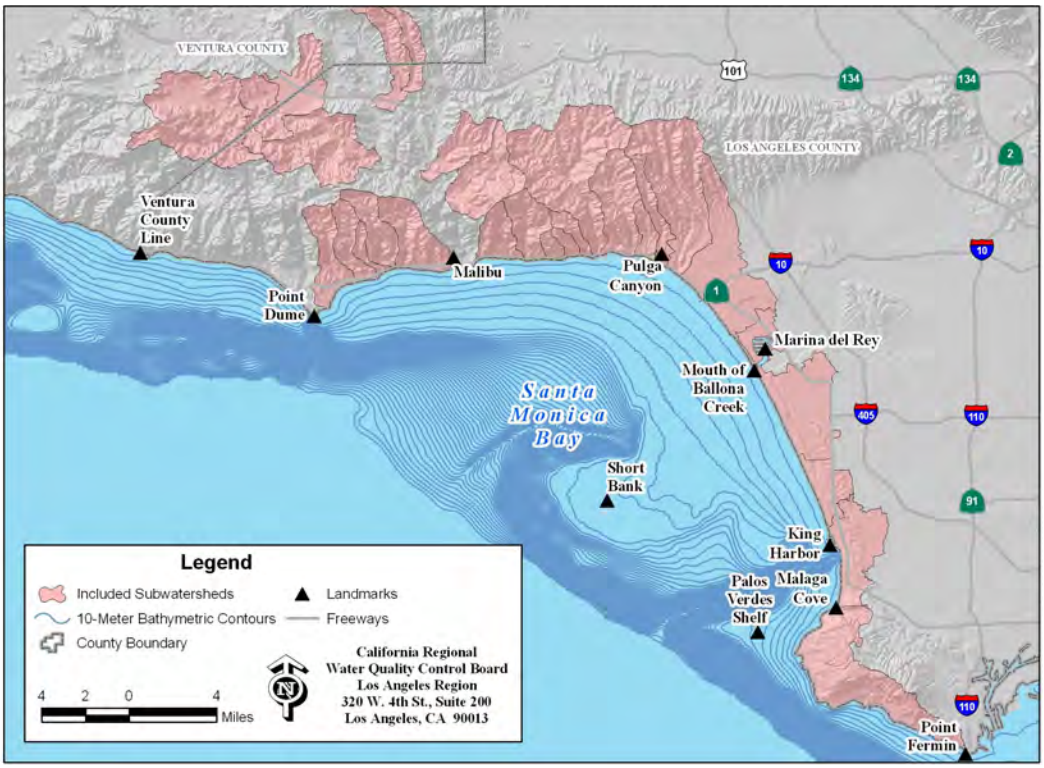
Rocky intertidal areas and areas of mixed rocky and sandy shoreline cover approximately 30% or 20 miles (32 km) of the Bay's coastline. Exposed bedrock forms the rocky intertidal from the Ventura County line to Pulga Canyon in Malibu and from Malaga Cove to Point Fermin on the Palos Verdes shelf (MBC Applied Environmental Sciences 1993). Artificial rocky intertidal—jetties, breakwater, rip rap—exist in Marina del Rey; the mouth of Ballona Creek; and King Harbor (MBC Applied Environmental Sciences 1988).

Unconsolidated, soft sediment, generally with the composition of sand, silt, and clay, makes up most of the Bay's seafloor. Silty sand is found over the central plateau and the Palos Verdes Shelf. The soft-bottom in Santa Monica Bay ranges in depth from the mean lower low water line (MLLW) to deeper than 500 meters in the outer portions of the bay and the submarine canyons (Robbins, 2006).

Hard bottom environments in Santa Monica Bay include the shallow kelp-covered areas adjacent to rocky headlands, submarine canyon walls, and the deep-water plateau called Short Bank. A large gravel bed surrounds the rocky outcrops of Short Bank.

Additionally, man-made features such as wastewater treatment plant outfall pipes, artificial reefs, and breakwaters are part of the hard bottom. (MBC Applied Environmental Sciences 1993).

Figure 5. Landmarks of the Santa Monica Bay



B. Climate

The Santa Monica Bay Watershed is located in the Southern California coastal belt and has a warm, Mediterranean climate. Summer is typically hot inland, and winter is mild. The average January air temperature is 53 degrees Fahrenheit, while the average July air temperature is 71 degrees Fahrenheit. The average annual air temperature is 61 degrees Fahrenheit with an average frost free season of 275 to 325 days.

Storm events and the resulting high stream flows are highly seasonal, grouped heavily in the months between November and April. Rainfall is rare in other months, and major storm flows historically have not been observed outside of the wet-weather season.

C. Beneficial Uses of Santa Monica Bay

The various uses of waters in the Los Angeles Region, referred as beneficial uses, are designated in the Basin Plan. These beneficial uses are the cornerstone of the State and Los Angeles Regional Water Quality Control Board's effort to protect water quality, as water quality objectives are set at levels that will protect the most sensitive beneficial use of a waterbody.

The Basin Plan for the Los Angeles Regional Board defines several beneficial uses in the Santa Monica Bay Watershed. Debris loading to the Santa Monica Bay causes impairments to beneficial uses associated with industrial service supply (IND), navigation (NAV), water contact recreation (REC-1), non-contact water recreation (REC-2), commercial and sport fishing (COMM), estuarine habitat (EST), marine habitat (MAR), preservation of biological habitats (BIOL), migration of aquatic organisms (MIGR), wildlife habitat (WILD), rare, threatened, or endangered species (RARE), spawning, reproduction, and or early development (SPWN), shellfish harvesting (SHELL), and wetland habitat (WET). These beneficial uses are summarized in Table 3.

The diverse ecosystems within the Santa Monica Bay Watershed provide a variety of habitats for more than five thousand species of plants, fish, birds, mammals, and other wildlife. The Bay's terrestrial habitats include riparian woodlands, coastal sage scrub, oak woodlands, coastal sand dunes, salt and brackish marshes, lagoons, and mudflats. Marine habitats include soft and hard bottom, sandy and rocky intertidal, pelagic, and kelp and seagrass beds (Santa Monica Bay Restoration Plan, 1994).

C.1 Santa Monica Bay

The Santa Monica Bay itself provides habitat for several different species. Below is a description of some of the specific aquatic life and recreational beneficial uses of the various marine habitats in the Bay.

C.1.1 Rocky Intertidal

The rocky intertidal areas are an important interface between the sea and the land, providing habitat for numerous and diverse species in the Bay. Various species of rockfish, such as the grass rockfish, kelp rockfish, and olive rockfish live and forage in rocky intertidal areas. In addition, the black abalone is a rocky intertidal species that has faced a rapid decline. Rocky intertidal areas can also have a recreational use, as people visit tidepools to explore and enjoy the life this habitat provides.

C.1.2 Soft Bottom Habitat

Fish use soft bottom habitat for all life stages. Soft bottom habitat supports a large number of organisms, including more than 100 species of demersal or bottom-dwelling fish, including White croaker, Queenfish, Surfperch, California halibut, and Barred sandbass. Eelgrass grows in the soft bottom habitat of Santa Monica Bay, and provides several fish species a food source and shelter (Allen 1999). Bocaccio, lingcod, California halibut, Pacific sanddab, and several species of rockfish also associate with the soft bottom habitat.

C.1.3 Hard Bottom Habitat

Although hard bottom habitat is scarce in the Bay, it supports a unique and productive ecosystem. Bocaccio, lingcod, and several species of rockfish live and forage in natural and artificial hard bottom habitats. In addition, kelp beds are associated with

hard bottom habitats. Hard bottom habitat also includes commercial and recreational uses, such as commercial and recreational fishing, and scuba diving.

C.1.4 Kelp Beds

Kelp beds extend low relief, hard bottom habitat from the seafloor to the surface, creating a vertically structured habitat. Fish may inhabit one of more of the following region of the kelp bed: holdfast, stipe, or canopy (MBC Applied Environmental Sciences). The giant kelp beds off of southern California are one of the most biodiverse communities known to exist in our world's oceans. In California, kelp beds provide protection and habitat for more than 800 species of fishes and invertebrates, many of which are uniquely adapted for life in kelp forests. One-fourth of California marine organisms depend on the kelp forests for some part of their life cycle. The survival of the threatened bocaccio, giant black sea bass, and entire industries are dependent on large, stable kelp beds (Santa Monica BayKeeper website, 2010).

Because most established kelp beds occur over hard bottom substrate, giant kelp beds in Santa Monica Bay are limited to two areas, the Palos Verdes Shelf and the area from Malibu west to Point Dume. Kelp beds grow on hard bottoms at depths ranging from 8 to 18 meters (Allen, 1985).

C.1.5 Pelagic

Pelagic, or open water, habitat is the most extensive of any of the coastal and marine habitats in the Bay. The pelagic habitat is from the sea surface to the ocean bottom, and is free of direct influence from the shore or ocean bottom.

The vast majority of life in the Bay depends either directly or indirectly on phytoplankton found in the pelagic realm. Phytoplankton forms the base of the food web – they support grazing zooplankton, fish, and marine bacteria. In the Southern California Bight, the pelagic realm is home to 40% of the total fish species. Small fish, such as northern anchovies, pacific sardines, and pacific mackerel school and reside in the pelagic realm, as well. In addition, several species of rockfish release larvae in pelagic waters. The open Bay also supports numerous species of seabirds, including the endangered California brown pelican and California least tern. Furthermore, several species of marine mammals are frequently observed in the open Bay.

C.2 Santa Monica Bay Beaches

Santa Monica Bay's sandy beaches are heavily used as a recreational resource by residents of Los Angeles and Ventura Counties, and visitors from around the world. Bay beaches attract, on average, 50-60 million visitors per year and generate significant revenue for the local economy. The intense recreational use of Santa Monica Bay's beaches has impacted both the habitat and the associated species. Sandy beaches are important foraging and nesting grounds for many shore bird species. The protection of this habitat is central to the population recovery of two endangered species, the California least tern and Western snowy plover. Although the snowy plover no longer nests along Santa Monica Bay beaches due to habitat loss/degradation as well as human disturbance,

the plover still winters on Bay beaches and is therefore still vulnerable (Santa Monica Bay Restoration Commission website, 2010).

Table 3. Beneficial Uses of Coastal Features, Santa Monica Bay.

Coastal Feature[a]	Beneficial Uses	IND	NAV	REC1	REC2	COMM	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
Los Angeles County Coastal	Hydro Unit #														
Nearshore Zone*		E	E	E	E	E		E	E	Ean	Ee	Ef	Ef	Ear	
Offshore Zone		E	E	E	E	E		E	E		Ee	Ef	Ef	E	
Escondido Beach	404.34		E	E	E	E		E	E				P	E	
Dan Blocker Memorial (Corral) Beach	404.31		E	E	E	E		E	E				P	E	
Puerco Beach	404.31		E	E	E	E		E	E				P	E	
Amarillo Beach	404.21		E	E	E	E		E	E				P	E	
Malibu Beach	404.21		E	E	E	E		E	E			E	Eas	Ear	
Malibu Lagoon	404.21		E	E	E		E	E	E		Ee	Ef	Ef		E
Carbon Beach	404.16		E	E	E	E		E	E				P	E	
La Costa Beach	404.16		E	E	E	E		E	E				P	E	
Las Flores Beach	404.15		E	E	E	E		E	E				P	E	
Las Tunas Beach	404.12		E	E	E	E		E	E				P	E	
Topanga Beach	404.11		E	E	E	E		E	E				P	E	
Topanga Lagoon	405.11		E	E	E	E	E		E		Ee	Ef	Ef		E
Will Rogers State Beach	405.13		E	E	E	E		E	E				P	E	
Santa Monica Beach	405.13		E	E	E	E		E	E			E	Eas	E	
Venice Beach	405.13		E	E	E	E		E	E		E	E	Eas	E	
Marina Del Rey				E											
Harbor	405.13		E	E	E	E		E	E					E	
Public Beach Areas	405.13		E	E	E	E		E	E		E				
All other Areas	405.13		E	P	E	E		E	E		E			E	
Entrance Channel	405.13		E	E	E	E		E	E		E			E	
Ballona Creek Estuary	405.13		E	E	E	E	E	E	E		Ee	Ef	Ef	E	
Ballona Lagoon/Venice Canals	405.13		E	E	E	E	E	E	E		Ee	Ef	Ef	E	E
Ballona Wetlands	405.13			E	E		E		E		Ee	Ef	Ef		E
Del Rey Lagoon	405.13			E	E		E		E		Ee	Ef	Ef		E
Dockweiler Beach	405.12	E	E	E	E	E		E	E				P		
Manhattan Beach	405.12		E	E	E	E		E	E				P	E	
Hermosa Beach	405.12		E	E	E	E		E	E				Eas	E	
King Harbor	405.12	E	E	E	E	E		E	E		E				
Redondo Beach	405.12	E	E	E	E	E		E	E		E	E	Eas	E	
Torrance Beach	405.12		E	E	E	E		E	E			E	Eas	E	
Point Vicente Beach	405.11		E	E	E	E		E	E				P	E	

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
a: Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries. Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.
b: Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.
e: One or more rare species utilize all ocean, bays, estuaries, and coastal wetlands for foraging and/or nesting.
f: Aquatic organisms utilize all bays, estuaries, lagoons, and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.
an: Areas of Special Biological Significance (along coast from Latigo Point to Laguna Point) and Big Sycamore Canyon and Abalone Cove Ecological Reserves and Point Fermin Marine Life Refuge.
ar: Areas exhibiting large shellfish populations include Malibu, Point Dume, Point Fermin, White Point, and Zuma Beach.
as: Most frequently used grunion spawning beaches. Other beaches may be used as well.
* Nearshore is defined as the zone bounded by the shoreline and a line 1000 feet from the shoreline or the 30-foot contour, whichever is further from the shore line.

C.3 Santa Monica Bay Subwatersheds

The Ballona Creek Subwatershed, Malibu Creek Subwatershed, and Topanga Canyon Subwatershed are all ecologically significant watersheds located within the Santa Monica Bay Watershed.

C.3.1 Ballona Creek Subwatershed

Ballona Creek, the largest subwatershed in the Santa Monica Bay watershed, is ecologically and recreationally significant. The bike path along the creek provides opportunities for recreation in the area. This path extends almost seven miles from Ballona Creek at National Boulevard in Culver City, to the end of Ballona Creek Estuary in Marina del Rey. The bike path is connected to another path along Dockweiler Beach by the Pacific Bridge, which links Marina del Rey to Playa del Rey. Biking, walking, drawing and painting are common practices that take place along the bikepath.

In addition to biking, hiking and bird watching are common practices in the watershed. About 300 bird species have been recorded in the Ballona Creek Subwatershed, including water, marsh, shore, and sea birds. Some of these birds are threatened and endangered species. For example, the California least tern is an endangered species that forages at the freshwater marsh during the breeding season, and raises its young in the sand dunes at Venice Beach. The great blue heron nests in tall trees in upland areas of Ballona, and forages along Ballona Creek. The Belding's savannah sparrow, a State listed endangered species, forages and breeds primarily in high salt marsh habitat. The least bittern, a State Species of Special Concern, breeds at the Freshwater Marsh.

C.3.2 Malibu Creek Subwatershed

The second largest of Santa Monica Bay's subwatersheds, the Malibu Creek Watershed, is the most ecologically significant watershed in Los Angeles County and the Santa Monica Mountains National Recreation Area (SMMNRA). The Malibu Creek Watershed provides a wide variety of habitats for threatened and endangered species and has long been a popular locale for public access and public recreation. Some animal species, such as the steelhead trout, tidewater goby, and brown pelican are endangered. Many others, such as the snowy plover and peregrine falcon, are threatened. As a large percentage of the Malibu Creek Watershed includes large areas of open space and natural habitat, it also provides many recreational opportunities. Hiking, mountain biking, fishing, horseback riding trails, camping, swimming and birdwatching are all common activities. In addition, Malibu Beach is a popular spot for vacationers, beachgoers, and surfers. The Malibu Creek Watershed has also been the location of many movie studio sets.

C.3.3 Topanga Canyon Subwatershed

The third largest subwatershed of the Santa Monica Bay watershed, Topanga Canyon watershed, is a favorite spot for hikers, bikers, and motorcycle riders because of its location in the Santa Monica Mountains. Biodiversity in Topanga watershed is quite high, with many species present that are rare in other areas of the Santa Monica Mountains. Sensitive plant species found in Topanga include Braunton's milkvetch, Santa Monica Mountains Dudleya, and Santa Susana Tarplant. Several sensitive animal species have been found in Topanga, including the steelhead trout, California newt, Arboreal salamander, and the California Red-legged frog.

D. Water Quality Objectives

Narrative water quality objectives are specified by the 1994 Los Angeles Regional Board Basin Plan. Water quality standards consist of a combination of beneficial uses, water quality objectives, and the State's Antidegradation Policy. Regional Board staff finds that the following narrative objectives are most pertinent to the Santa Monica Bay Debris TMDL:

Floating Materials: *"Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses."*

Solid, Suspended, or Settleable Materials: *"Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses."*

In addition, the 2005 Water Quality Control Plan for Ocean Waters of California (California Ocean Plan) establishes water quality objectives, as well. This narrative objective is applicable to both trash and plastic pellets:

"Floating particulates and grease and oil shall not be visible."

Moreover, in 2007 AB 258 was signed into law, which added Chapter 5.2 to Division 7 of the California Water Code, section 13367. Chapter 5.2 is called "Preproduction Plastic Debris Program," and requires the Regional Boards to implement a program to control the discharges of preproduction plastic pellets from point and nonpoint sources. The program requires plastic manufacturing, handling, and transportation facilities to implement best management practices to control discharges of preproduction plastics, including: appropriate containment systems; sealed containers durable enough so as not to rupture during transfer and storage; use of capture devices during loading, unloading, and transferring; and the availability of a vacuum or vacuum like system to clean up loose pellets.

State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Water" in California, known as the "Antidegradation Policy," protects high quality surface and ground waters from degradation. Any actions that can adversely affect water quality in all surface and ground waters must be consistent with the maximum benefit to the people of the state, must not unreasonably affect present and anticipated beneficial use of such water, and must not result in water quality less than that prescribed in water quality plans and policies. Furthermore, any actions that can adversely affect surface waters are also subject to the federal Antidegradation Policy (40 CFR 131.12). The proposed TMDL will not degrade water quality, and will in fact improve water quality as it is designed to achieve compliance with existing water quality standards.

E. Impairment of Beneficial Uses

The beneficial uses described above are impaired by the accumulation of suspended and settleable debris. Common items that have been observed by Regional Board staff include

plastic bags, aluminum cans, paper items, plastic and glass bottles, styrofoam, plastic pellets, cigarette butts, and construction debris. Heavier debris can also be transported during storms.

Marine debris[1] has impacted at least 267 species worldwide, primarily through ingestion and entanglement (Heal the Bay, 2007). Marine debris and beach litter kills marine wildlife, damages the Bay's aesthetic qualities, and is expensive for coastal communities to clean up. Items like fishing line and six-pack rings can entangle marine animals. Entanglement results when an animal becomes encircled or ensnared by debris. It can occur accidentally, or when the animal is attracted to the debris as part of its normal behavior or out of curiosity. Entanglement is harmful to wildlife for several reasons. Not only can it cause wounds that can lead to infections or loss of limbs; it can also cause strangulation or suffocation. In addition, entanglement can impair an animal's ability to swim, which can result in drowning, or in difficulty in moving, finding food, or escaping predators (U.S. EPA, 2001). Once entangled, animals have trouble eating, breathing or swimming, all of which can have fatal results.

For aquatic life, buoyant (floatable) elements tend to be more harmful than settleable elements, due to their ability to be transported throughout the water body and ultimately to the marine environment. Birds, fish and mammals often mistake plastic for food. With plastic filling their stomachs, animals have a false feeling of being full, and may die of starvation. Sea turtles mistake plastic bags for jellyfish, one of their favorite foods. Even gray whales have been found dead with plastic bags and sheeting in their stomachs. Smaller elements such as plastic resin pellets (a by-product of plastic manufacturing) and cigarette butts are often more harmful to aquatic life than larger elements, since they can be ingested by a large number of small organisms which can then suffer malnutrition or internal injuries. In addition to malnutrition, plastic pellets may contain chemicals that are toxic (e.g. persistent organic pollutants). These toxic substances may be additives that were intentionally mixed into the resin to achieve specific properties, or contaminants that were adsorbed by the pellets from the environment (U.S. EPA, 1992).

Ingestion of sharp objects can damage the mouth, digestive tract and/or stomach lining and cause infection or pain. Ingested items can also block air passages and prevent breathing, thereby causing death (U.S. EPA, 2001). Many of the species most vulnerable to the problems of floatable debris are endangered or threatened by extinction.

Trash and plastic pellets in waterways causes other significant water quality problems. Small and large floatables can inhibit the growth of aquatic vegetation, decreasing spawning areas and habitats for fish and other living organisms. With the exception of large items, settleables are not always obvious to the eye. This includes plastic pellets, glass, cigarette butts, rubber, construction debris, and more. Settleables can be a problem for bottom feeders and can contribute to sediment contamination.

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[1] According to the National Oceanic and Atmospheric Administration (NOAA) Marine Debris Program, debris is defined as "any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment" (NOAA 2010). In this TMDL, trash does not include naturally occurring vegetation waste. Plastic pellets, also known as plastic resin pellets, are small, round pellets that are the raw form of plastic. These pellets are melted down to form plastic products.

Persistent elements such as plastics, synthetic rubber and synthetic cloth tend to be more harmful than degradable elements such as paper or organic waste. Glass and metal are less persistent, even though they are not biodegradable, because wave action and rusting can cause them to break into smaller pieces that are less sharp and harmful. Natural rubber and cloth can degrade but not as quickly as paper (U.S. EPA, 2002).

Debris in water bodies can threaten the health of people who use them for wading or swimming. Of particular concern are the bacteria and viruses associated with diapers, medical waste (e.g., used hypodermic needles and pipettes), and human or pet waste. Additionally, beachgoers can cut themselves on glass and metal left on the beach. Such injuries can then expose a person's bloodstream to microbes in the stream's water that may cause illness. Also, some debris, such as containers or tires, can pond water and support mosquito production and associated risks of diseases such as encephalitis and the West Nile virus.

Marine debris also endangers the safety and livelihood of fishermen and recreational boaters. Nets and monofilament fishing line can obstruct propellers and plastic sheeting and bags can block cooling intakes.

Most of the effects listed above are related to the health of marine life and people. However, marine debris is also a nuisance. Debris is not aesthetically pleasing to the eye, and can also affect tourism if people do not want to spend time at a beach filled with trash and plastic pellets.

In conclusion, debris in Santa Monica Bay can adversely affect humans, fish, and wildlife. Not all water quality effects of debris are equal in severity or duration. The water quality effects of debris depend on individual items and their buoyancy, degradability, size, potential health hazard, and potential hazards to fish and wildlife. The prevention and removal of trash and plastic pellets in the Santa Monica Bay and their possible source areas will ultimately lead to improved water quality and protection of aquatic life and habitat, expansion of opportunities for recreation, enhancement of public interest in Santa Monica Bay, and public participation in restoration activities, and propagation of the vision of the watershed as a whole and enhancement of the quality of life of those who use the Bay.

F. Debris Impairments of Santa Monica Bay

F.1 Site Inspections

According to the 1998, 2002, and 2006 303(d) lists, debris is impairing beneficial uses in the Santa Monica Bay. On October 16, 2008 and August 10, 2009, Regional Board staff conducted site visits along the beaches in the southern and northern parts of the Santa Monica Bay, respectively, to document the trash problem. The Rapid Trash Assessment method was used to measure and document trash at sites in Redondo Beach, Hermosa Beach, Manhattan Beach, Dockweiler Beach, Venice Beach, Santa Monica Beach, Will Rogers State Beach, Topanga County Beach, Dan Blocker County Beach, Paradise Cove, and Zuma County Beach.

During the site inspection, trash was found at all beaches along the Santa Monica Bay. Common items found on every beach included: plastic bags, candy wrappers, cigarette butts, styrofoam, beverage containers, straws, and paper.

Areas along the beaches north of Santa Monica Beach had much more trash beside Pacific Coast Highway (PCH) and other roads. Many pocket areas were observed with no gutter or other mechanism that would catch the trash from the roadway, through the parking lots, and to the beach. Most of the trash on the roadside consisted of plastic bags, plastic and paper wrappers, and cigarette butts. Along a 100-foot stretch of PCH in Zuma Beach, 52 plastic wrappers, over 100 cigarette butts, and over 60 pieces of paper trash were counted. There were no trash cans observed in this area.

The south bay beaches (south of Santa Monica Beach) are located in more urban areas, and did not have as much trash on the roadside. Since these areas are equipped with catch basins and attached to the municipal separate storm sewer system (MS4), trash does not tend to remain on the roadside. Although there was not much trash observed along the roads, there was trash observed on all south bay beaches.

In general, there was more trash at the beaches with more visitation, such as Santa Monica by the pier, and Venice Beach by the boardwalk. Among the trash found in a 100-foot transect of Santa Monica Beach, there were 43 cigarette butts, 19 pieces of styrofoam, 18 pieces of plastic, and one diaper. There was also a considerable amount of trash found floating in the surf zone near the outfall at Dockweiler Beach, and on the beach itself.

F.2 Other Studies

Data provided by Heal the Bay from the Coastal Cleanup Day in 2009 shows the significant amount of trash that is present on coastal beaches. Volunteers collected 2,750 pounds of trash from Dockweiler State Beach, while 848 pounds were collected at Santa Monica Beach, and approximately 650 pounds at Will Rogers State Beach. At the south bay beaches, approximately 550 pounds were collected at Redondo Beach, 300 pounds at Manhattan Beach, 193 pounds at Torrance Beach, and 160 pounds at Hermosa Beach.

According to Heal the Bay, a majority of marine debris is comprised of plastic material. An estimated 60 to 80 percent of all marine debris (and 90 percent of floating debris) is plastic (Heal the Bay, 2007).

Several studies have investigated the presence of plastics in the waters off of southern California. Plastic pellets, polystyrene, hard plastic fragments, thin films, and line have all been documented in the Santa Monica Bay. A study conducted by Algalita Marine Research Foundation found that plastics were present not only at surface levels, but also in mid-water depths, and at the bottom of the Santa Monica Bay (Gwen L. Lattin et al., 2001).

Two separate studies conducted by UCLA students in 2010 quantitatively and qualitatively examined marine debris distribution on the beaches along the Santa Monica Bay. One of the studies evaluated debris among four Los Angeles County Beaches: Malibu-Surfrider Beach, Venice Beach, Dockweiler State Beach, and Redondo Beach. The other study looked at debris at Topanga Beach and Topanga Canyon Creek. Both studies found that plastics were

present in abundance on all beaches. Many plastic pieces were degraded, suggesting that they had originated in upstream waterways for a significant amount of time before accumulating on beaches. In addition to plastic, styrofoam was prevalent in the mouth of Topanga Canyon Creek and on Topanga Beach. Furthermore, the original use of most debris items found on beaches was associated with food and beverages.

The Ocean Conservancy uses annual data collected during International Coastal Cleanup (ICC), and the National Marine Debris Monitoring Program (NMDMP) to evaluate the sources of marine debris. ICC data collected over several years has indicated that over 60% of debris collected from beaches on Coastal Cleanup Day in the United States is comprised of plastic materials. The primary items from land based sources on the Pacific Coast included food wrappers, beverage containers, cigarettes, and smoking-related materials. The primary items of ocean-related debris included fishing nets and gear. The Ocean Conservancy uses the ICC data to assess the sources of the debris. Data collected during the 2004 California Coastal Cleanup Day revealed the following sources (by number of pieces): shoreline and recreational activities - 48%; Smoking-related activities - 44.2%; Ocean waterway activities - 4.5% (Gordon, 2006).

While there are numerous studies documenting visible and identifiable plastic objects, another study conducted by Algalita Marine Research Foundation and Southern California Coastal Water Research Project (SCCWRP) focused on miniscule plastic fragments, and showed that these fragments of less than 5mm in size have a mass that is 30% of the mass of the associated zooplankton in the Northern Pacific Central Gyre.

A more localized study conducted in the summer of 1998 by SCCWRP examined the composition and distribution of beach debris on Orange County beaches. The study found over 105 million pre-production plastic pellets, weighing more than 4,700 pounds.

II. Numeric Target

The numeric target is derived from the narrative water quality objectives in the Basin Plan for the Los Angeles Region and the California Ocean Plan, including:

"Floating Material"

> *"Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses";*

"Solid, suspended, or settleable materials"

> *"Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses."*

"Floating particulates"

> *"Floating particulates and grease and oil shall not be visible."*

A. Numeric Target for Trash

The numeric target for the Santa Monica Bay Debris TMDL is zero trash in Santa Monica Bay. For point sources, zero trash is defined as no trash discharged into waterbodies within the Santa Monica Bay Watershed and into Santa Monica Bay or on the shoreline of Santa Monica Bay. For nonpoint sources, zero trash is defined as no trash on the shoreline or beaches, or in harbors adjacent to Santa Monica Bay, immediately following each assessment and collection event consistent with an established Minimum Frequency of Assessment and Collection Program (MFAC Program). Regional Board staff has not found information to justify any value other than zero that would fully support the designated beneficial uses. Further, court rulings have found that a numeric target of zero trash is legally valid. The numeric target was used to calculate the Load Allocations for nonpoint sources and Waste Load Allocations for point sources, as described in the following sections of this Staff Report.

B. Numeric Target for Plastics

The numeric target for plastic pellets in the Santa Monica Bay Debris TMDL is zero plastic pellets in Santa Monica Bay. For point source dischargers of plastic pellets, zero plastic pellets is defined as no plastic pellets discharged from the premises of industrial facilities that import, manufacture, process, transport, store, recycle or otherwise handle plastic pellets. Similar to trash, this numeric target supports the designated beneficial uses, as stated above.

III. Source Analysis

Contaminants that enter the Bay may originate on land, in the air, or at sea outside of the Bay itself. Although the sources of pollutants are numerous and disparate, they are ultimately the product of all the people who live, work, and play in the region. Countless human activities directly influence the amount and types of pollutants that enter the Bay. Along the West Coast, land-based debris comprises over half of the debris observed in the marine environment followed by undetermined sources of debris, while ocean-based debris comprises only approximately one-tenth of the debris observed in the marine environment (Sheavly, 2007).

Trash Sources

The major source of trash in the Santa Monica Bay results from litter, which is intentionally or accidentally discarded by people and ends up in the Santa Monica Bay. Over 4,000 tons of trash is collected from Bay beaches annually and a 1994 survey found that one-quarter of the ocean bottom surveyed contained man-made materials (Santa Monica Bay Restoration Plan). The potential trash sources can be categorized as point sources and nonpoint sources depending on the transport mechanisms, which include:

1. Storm drains: trash that is deposited throughout the watershed is carried to the various beaches and Santa Monica Bay during and after rainstorms through storm drains. This is a point source.

2. Marine vessels/ships: trash can be deposited into the Santa Monica Bay directly from marine vessels and ships. This is a nonpoint source.

3. Wind/wave action: trash can be blown or washed into the Santa Monica Bay directly. This is a nonpoint source.

4. Direct disposal: direct dumping or littering into the Santa Monica Bay. This is a nonpoint source.

According to the characteristics of the land uses which include high and low density residential areas, open space and parks, both point and nonpoint sources contribute trash to the Santa Monica Bay.

Plastic Pellet Sources

Approximately 60 billion pounds of plastic pellets are manufactured annually in the United States, where they are frequently discharged to waterways during the transport, packaging, and processing of plastics (Heal the Bay, 2007). Like trash, the plastic pellets can reach Santa Monica Bay via storm drains, wind, or direct spills. Plastic pellets are transported through ships, trucks, and trains from plastic manufacturers to plastic industries. Once discharged, the pellets are easily blown by wind or carried by stormwater through the storm drain system and to the beaches and water of the Santa Monica Bay. Since the plastic pellets are very small (less than 5 millimeters), they will not be captured by most trash capture devices. Studies in New York, Boston, and Houston showed that combined sewer overflows and storm drains were sources of pellets in the aquatic environment (U.S. EPA, 1992).

A. Point Sources

There are several point sources that contribute to Santa Monica Bay and its watershed. Municipal storm drains and discharges from industrial facilities that manufacture, transport or otherwise handle plastic pellets will be the major focus of point sources in this Debris TMDL.

Land Based Point Sources of Trash

Trash conveyed by urban runoff and storm water through storm drains to the Santa Monica Bay is evidenced by trash accumulation at the base of storm drains discharging to the beaches and catch basins, which collect runoff from surrounding lands.

Urban and storm water runoff, carried to the Bay through the region's massive storm drain systems and streams, is a serious, year-round concern. Each year, an average of 30 billion gallons of storm water and urban runoff are discharged through more than 200 outlets. Even in dry weather, ten to 25 million gallons of water flow through storm drains into Santa Monica Bay every day. Table 4 and Figure 6 show the major storm drains that empty into Santa Monica Bay.

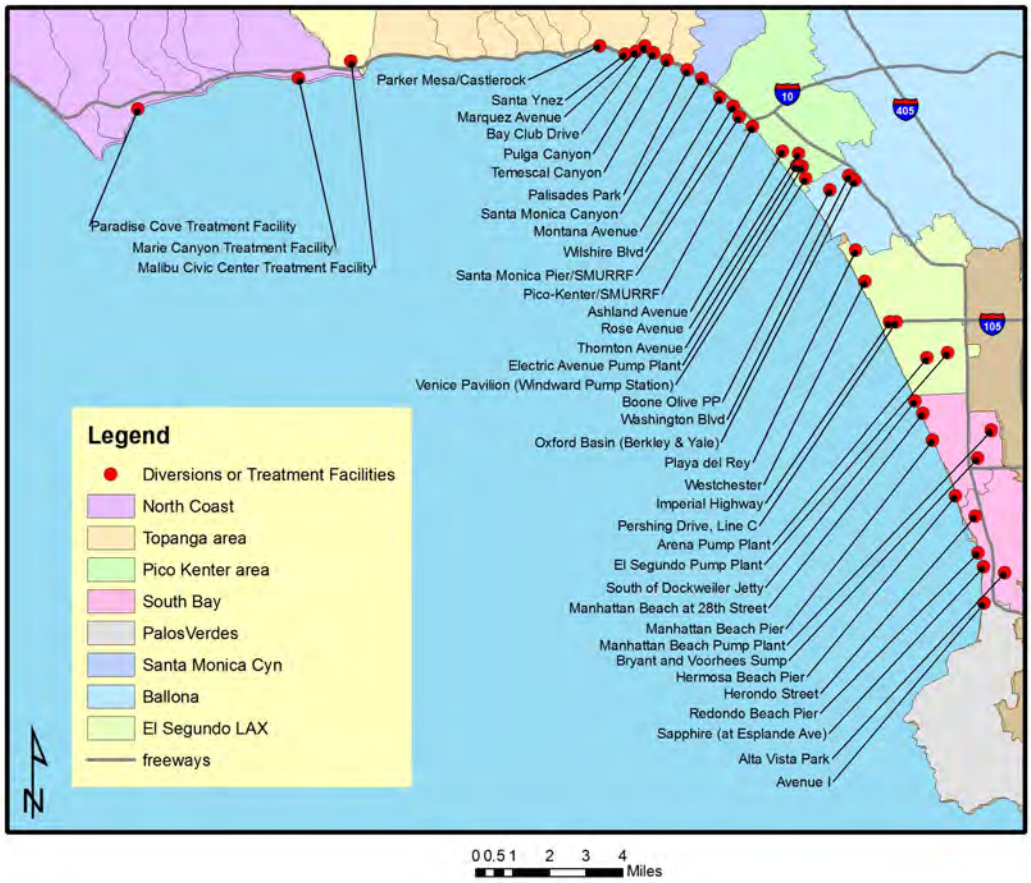
Runoff flows over rooftops, parking lots, roadways and freeways, sidewalks, commercial areas, construction sites, industrial facilities, and other impervious surfaces, picking up trash and transporting it through open channels and underground pipes directly to the Bay.

Because the region's 5,000-mile network of storm drains was built to convey flood waters to the ocean as quickly as possible, all wet-weather flows and most dry-weathers flow bypass wastewater treatment facilities and discharge directly to the Bay. However, some facilities treat runoff on-site, such as those at Malibu Lagoon, Marie Canyon, Paradise Cove and the Santa Monica Pier.

Table 4. Major creeks, open channel, and storm drains in Santa Monica Bay beach cities and Los Angeles County.

Low Flow Diversion	Subwatershed
Boone Olive PP	Ballona
Washington Blvd	Ballona
Oxford Basin (Berkley at Yale)	Ballona
Playa del Rey	El Segundo-LAX
Westchester	El Segundo-LAX
Pershing Drive, Line C	El Segundo-LAX
Arena Pump Plant	El Segundo-LAX
El Segundo Pump Plant	El Segundo-LAX
Imperial Highway	El Segundo-LAX
Malibu Civic Center Treatment Facility	Malibu
Paradise Cove Treatment Facility	North Coast
Marie Canyon Treatment facility	North Coast
Avenue I	Palos Verdes
Alta Vista Park	Palos Verdes
Rose Avenue (phase 2)	Pico Kenter
Ashland Avenue (phase 2)	Pico Kenter
Electric Avenue Pump Plant	Pico Kenter
Thornton Avenue	Pico Kenter
Venice Pavilion (Windward Ave Pump Station)	Pico Kenter
Montana Avenue	Pico Kenter
Wilshire Avenue	Pico Kenter
Santa Monica Pier	Pico Kenter
Pico-Kenter	Pico Kenter
Santa Monica Canyon	Santa Monica Cyn
Manhattan Beach Pump Plant	South Bay
Manhattan Beach at 28th Street (The Strand)	South Bay
Herondo Street	South Bay
South of Dockweiler Jetty	South Bay
Manhattan Beach Pier	South Bay
Hermosa Beach Pier	South Bay
Redondo Beach Pier	South Bay
Sapphire (at Esplanade Ave)	South Bay
Bryant and Voorhees Sump	South Bay
Parker Mesa/Castlerock	Topanga
Santa Ynez	Topanga
Pulga Canyon	Topanga
Palisades Park	Topanga
Bay Club Drive	Topanga
Temescal Canyon	Topanga
Marquez Avenue	Topanga

Figure 6. Low flow diversions and treatment facilities in the Santa Monica Bay Watershed Management Area



Extensive research has not been done on trash generation or the precise relationship between rainfall and its deposition in waterways. However, it has been found that the amount of gross pollutants entering the stormwater system is rainfall dependent but does not necessarily depend on the source (Walker and Wong, December 1999). The amount of trash which enters the stormwater system depends on the energy available to re-mobilize and transport deposited gross pollutants on street surfaces rather than on the amount of available gross pollutants deposited on street surfaces. Where gross pollutants exist, a clear relationship between the gross pollutant load in the stormwater system and the magnitude of the storm event has been established. The limiting mechanism affecting the transport of gross pollutants, in the majority of cases, appears to be re-mobilization and transport processes (i.e., stormwater rates and velocities).

Several studies conclude that urban runoff is the dominant source of trash. The large amount of trash conveyed by urban storm water to the Los Angeles River is evidenced by the trash that accumulates at the base of storm drains. The amount and type of trash that is washed into the storm drain system appears to be a function of the surrounding land use.

A number of studies (Walker and Wong, 1999, Allison, 1995), have shown that commercial land-use catchments generate more pollutants than residential land-use catchments, and as much as three times the amount generated from light industrial land-use catchments. It is generally accepted that commercial land uses tend to contribute larger loads of gross pollutants per area compared to residential and mixed land-use areas. This is in spite of the typical daily street sweeping in the commercial sub-catchment compared to the typical frequency of once every two weeks in residential and mixed land use areas.

Based on reports and research on other watersheds, the amount and type of trash washed into the storm drain system appears to be a function of the surrounding land use. The City of Long Beach has recorded trash quantity collected at the mouth of the Los Angeles River; the result suggested that the total trash amount is somewhat linearly correlated with the precipitation (see Table 5).

Table 5. Storm Debris Collection Summary for Long Beach: (Signal Hill, 2006).

Year	Trash (Tons)	Precipitation (inches)
95-96	4162	12.44
96-97	3993	12.4
97-98	9290	31.01
98-99	3091	9.09
99-00	3844	11.57
00-01	4437	17.94
01-02	1858	4.42
02-03	4630	16.42
03-04	2636	9.25
04-05	12225	37.25
05-06	1059	13.19

The City of Calabasas conducted a study for Continuous Deflective Separation (CDS) units installed in December of 1998 for runoff from Calabasas Park Hills to Las Virgenes Creek. It is assumed that this CDS unit prevented all trash from passing through. The calculated area drained by this CDS Unit is approximately 12.8 square miles. The urbanized area estimated by Regional Board staff is 0.10 square miles. The result of this clean-out, which represents approximately half of the 1998-1999 rainy season, was 2,000 gallons of sludgy water and a 64-gallon bag about two-third full of plastic food wrappers. It is assumed that part of the trash accumulated in the CDS unit over roughly half of the rainy season had decomposed in the unit due to the absence of paper products. Given the CDS unit was cleaned out after slightly more than nine months of use, it was assumed that this 0.10 square mile urbanized area produced a volume of 64 gallons of trash over one year.

To estimate trash generation rates, studies from other watersheds were analyzed by Regional Board staff. The County of Los Angeles conducted a trash baseline study in 2003-2004 in the Los Angeles River Watershed and the Ballona Creek Watershed. The study examined different land uses, such as: high-density single-family residential, low-density single-family residential, commercial, industrial, and open space/parks. The County of Los Angeles installed 250 catch basin inserts in the Los Angeles River Watershed, and 250 catch basin inserts in the Ballona Creek Watershed, with a minimum of 10 sites per land use having at least 5 catch basins per site. They also installed five Continuous Deflective Separator units. The results of the study indicated an average of 5,741.34 pounds per square mile per year

generated from the Los Angeles River Watershed, and 3,663.55 pounds per square mile per year from the Ballona Creek Watershed.

Land Based Point Sources of Plastic Pellets

Industries that manufacture, store, process, and otherwise handle plastic pellets as raw material are sources of pellets in the environment. Although the plastic pellets ultimately make their way to the beaches of Santa Monica Bay through storm drain systems, they originate on the premises of the plastic industries and discharges from these facilities are regulated through separate regulatory mechanisms. When industries release plastic pellets onto the ground and adjacent areas of the site, they are responsible for ensuring that the plastic pellets are not transported off-site via runoff and stormwater.

Marine Based Point Sources of Plastic Pellets

Researchers have suggested possible sources of plastic pellets in the marine environment, which include direct discharges and improper waste water disposal by the plastics industry, spillage from ships during loading, transport, and unloading, and improper use of pellets (i.e., for bearings to facilitate movement of cargo boxes and heavy objects). Other studies showed spillage at loading and shipping docks as a source of plastic pellets to the marine environment (U.S. EPA, 1992).

B. Nonpoint Sources

Nonpoint source pollution is commonly caused by a wide range of activities including urban development, agriculture, and recreation. The trash deposited in the Santa Monica Bay resulting from nonpoint sources is a function of transport mechanisms including wind, wave action, stormwater, and visitation, as they relate to open space, beaches, state parks, harbors and marinas, boating, and roadways.

There are limited studies, particularly to define the relationship between the strength of winds and movement of trash from a land surface to a waterbody. Lighter trash with a sufficient surface area to sail with the wind, such as plastic bags and pellets, beverage containers, paper or plastic convenient food containers are easily lifted and carried to the Santa Monica Bay. Also, as described in the point source section, stormwater carries trash from shore areas and beaches to waterbodies. Transportation of pollutants from one location to another is determined by the energy of wind, wave action, stormwater, and visitation.

Land Based Nonpoint Sources of Trash

In consideration of transport mechanisms, existing trash in the environment near the Santa Monica Bay is a fundamental cause of nonpoint sources trash loading. Based on observation, land use can be generally divided into categories of low density single-family residential, open space/parks, and beach areas. Residents may accidentally discard trash to the backyard, grass, or roads along the beach, which initiates the journey of trash to the Santa Monica Bay via wind or stormwater. Different uses of the open space may be responsible for different degrees of trash impairment. For example, areas with picnic tables closer to the bay

have a higher likelihood of having more trash on the ground near the water than in parking lots. Visitation rates also appear to be correlated with the amount of trash from nonpoint sources.

Large areas such as beaches and parks are especially prone to transport mechanisms such as wind and wave action. Pier fishermen and beach visitors generate trash that, if not properly disposed of, can be blown or washed directly into the Bay. In addition, trash can be blown or taken out of trash receptacles by birds if they are not covered.

Review of beach clean up data provided by Heal the Bay shows that the three most common trash types found on beaches surrounding the Santa Monica Bay are: plastic, styrofoam, and cigarette butts. Site visits support this data, and suggest that a large portion of the trash found on beaches is directly deposited by beach visitors. The areas that have high visitation tend to have more trash. Venice Beach by the board walk and Santa Monica Beach by the Santa Monica Pier are two examples.

Harbors and the marinas located within them are large areas that attract recreational and commercial boaters. Wind and stormwater can sweep any nearby trash into the harbor waters, if there is trash present in adjacent areas. Table 6 lists the marinas and yacht clubs in the Santa Monica Bay.

Table 6. Marinas and Yacht Clubs in Santa Monica Bay

Marinas, Anchorages, and Yacht Clubs Managed by County of Los Angeles Department of Beaches and Harbors
Anchorage 47
Bar Harbor Marina
Bay Club Marina
Boat Yard
Burton Chace Park Transient Boat Docks
California Yacht Club
Del Rey Yacht Club
Dolphin Marina
Esprit (formerly Deauville Marina)
Holiday Harbor Marina
Marina City Club
Marina del Rey Marina
Marina Harbor Anchorage
Mariner's Bay Anchorage
Neptune Marina
Pier 44 Marina
Public Boat Launch Ramp
Tahiti Marina
Villa del Mar Marina
Windward yacht Repair
Marina Venice Yacht Club
Pacific Mariner's Yacht Club
Santa Monica Windjammers Yacht Club
South Coast Corinthian Yacht Club
Marina del Rey Sportfishing
Marina Fuels and Service
Marinas Managed by City of Redondo Beach Harbor Department
King Harbor Marina
California Yacht Marina
Portofino Marina
Redondo Beach Marina
King Harbor Yacht Club

Marine Based Nonpoint Sources of Trash

Commercial and recreational fishing boats, sailboats, cruise ships, and import/export container ships are also nonpoint sources. In addition to trash being blown overboard, the passengers on these vessels may be depositing trash into the Bay. According to a study conducted as part of the Southern California Bight Pilot Project, entitled "Distribution of Anthropogenic and Natural Debris on the Mainland Shelf to the Southern California Bight," anthropogenic debris was most commonly found in the urbanized regions, on the outer shelf, and in areas near publicly owned treatment works (POTWs). Fishing gear was the most common type of anthropogenic debris in the urban and outer shelf zone, whereas glass bottles and plastic were most common in POTW areas. Glass bottles and cans are too large to pass through the screens covering POTW outfall pipes, so it was concluded that they were not discharged from this source. However, these outfall pipes are essentially artificial reefs, and are popular fishing spots for recreational anglers. As a result, the study suggested that marine vessels and fishing activities are a likely source of anthropogenic debris in the Santa Monica Bay (Moore, Shelly L. and Allen, M. James, 1994).

Land Based Nonpoint Sources of Plastic Pellets

Although plastic industries are the primary point source for plastic pellets, it is likely that any spills that happen during transport, transfer, or handling may release loose plastic pellets to the MS4 and eventually to the beach and the Santa Monica Bay. Any such spills will be addressed by the previously mentioned land based point source of plastic pellets or the MS4 Permittees.

IV. Linkage Analysis

This TMDL is based on numeric targets derived from narrative water quality objectives for floating materials and particulates and solid, suspended, or settleable materials. The narrative objectives prescribe that waters shall not contain these materials in concentrations that cause nuisance or adversely affect beneficial uses. Based on these targets, staff finds the capacity of the Santa Monica Bay to accumulate trash is zero. Similarly, the Santa Monica Bay should accumulate no plastic pellets.

V. Waste Load and Load Allocations

Waste Load and Load Allocations for Trash

Both point sources and nonpoint sources are identified as sources of trash in the Santa Monica Bay. For point sources, the strategy for attaining water quality standards focuses on assigning Waste Load Allocations (WLAs) to the Permittees of the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit, and the Ventura County MS4 Permit (hereinafter referred to as Responsible Jurisdictions). The WLAs will be implemented through permit requirements. For nonpoint sources, the strategy for attaining water quality standards focuses on assigning Load Allocations (LAs) to municipalities, and agencies having jurisdiction over the beaches, harbors, parks and open space, and the vicinities surrounding these beaches

and harbors. Final WLAs and LAs are zero trash. The LAs will be implemented through regulatory mechanisms that implement the State Board's 2004 Nonpoint Source Policy, which may include but are not limited to conditional waivers, waste discharge requirements, or prohibitions.

WLAs and LAs are based on a phased reduction from the Baseline Waste Load and Load Allocation, estimated as the current discharge, over an eight-year period for point source trash reduction compliance, and a five-year period for nonpoint source trash reduction compliance by using a program of minimum frequency of trash assessment and collection (MFAC) program discussed below. Responsible agencies and jurisdictions assigned a WLA may achieve WLAs through the use of full capture systems, partial capture systems, institutional controls, nonstructural BMPs, or any other lawful methods. Responsible agencies and jurisdictions assigned a LA may achieve LAs through implementation of a Regional Board Executive Officer approved MFAC program in conjunction with BMPs.

Waste Load Allocations for trash are assigned to the California Department of Transportation (Caltrans, permittee for Statewide National Pollutant Discharge Elimination System (NPDES) Storm Water Permit, No. 99-06-DWQ); Los Angeles County, and the Cities of Agoura Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Torrance, and Westlake Village (co-permittees within the Santa Monica Bay WMA under the Los Angeles County MS4 NPDES Permit); and County of Ventura, and City of Thousand Oaks (co-permittees within the Santa Monica Bay WMA under the Ventura County MS4 NPDES Permit No. CAS 004002).

Responsible agencies and jurisdictions covered by the Ballona Creek Watershed Trash TMDL including Caltrans, County of Los Angeles, and the Cities of Beverly Hills, Culver City, Inglewood, Los Angeles, Santa Monica, and West Hollywood, and responsible agencies and jurisdictions identified in the Malibu Creek Trash TMDL including Caltrans, Los Angeles County, Ventura County, Ventura County Watershed Protection District, and the Cities of Agoura Hills, Calabasas, Hidden Hills, Malibu, Thousand Oaks, and Westlake Village are also responsible for point source discharges of trash into the Santa Monica Bay via open channels and storm drains. The WLA applicable to MS4 Permittees that is established in the Santa Monica Bay Debris TMDL, and the associated requirements for these responsible agencies and jurisdictions shall be addressed through the Ballona Creek Trash TMDL (Regional Board Resolution No. R01-014 and any amendments thereto) and the Malibu Creek Trash TMDL (Regional Board Resolution No. R08-007 and any amendments thereto). Therefore, compliance with the existing Malibu Creek and Ballona Creek Trash TMDLs will constitute compliance with the trash related requirements of the Santa Monica Bay Debris TMDL.

The Regional Board's approach to regulating trash in the context of a TMDL is unique and unlike that used for other pollutants. Trash is generally visible and easily containable, and these attributes make it a pollutant that is readily controllable within its area of origin through proper and frequent collection and disposal by municipalities and the public. Also, the feasibility of containing this pollutant allows for determining compliance within a jurisdiction prior to discharge to the MS4. The LA Region trash TMDLs take this into account in identifying responsible jurisdictions and agencies and their points of compliance, and in assigning waste load allocations.

The TMDL is designed to assign all responsibility for trash generated within a land area to the responsible jurisdictional agency. The intent of the TMDL is to control the trash prior to its being discharged to the MS4 and from there to impaired waters. In this manner, responsible jurisdictions within the watershed are assigned waste load allocations and should be responsible for controlling all potential trash discharges from their area. The flood control districts are not assigned waste load allocations. However, the Regional Board recognizes the flood control districts' authority over the MS4 and the fact that some of the key compliance strategies for the trash TMDL rely on installations within the flood control districts' infrastructure. Because of this, flood control districts may be held responsible with a jurisdiction and/or agency for non-compliance where the flood control district has either:

(i) without good cause denied entitlements or other necessary authority to a responsible jurisdiction or agency for the timely installation and/or maintenance of full and/or partial capture trash control devices for purposes of TMDL compliance in parts of the MS4 physical infrastructure that are under its authority, or

(ii) not fulfilled its obligations regarding proper BMP installation, operation and maintenance for purposes of TMDL compliance within the MS4 physical infrastructure under its authority,

thereby causing or contributing to a responsible jurisdiction and/or agency to be out of compliance with its interim or final Waste Load Allocations.

Under these circumstances, the flood control district's responsibility shall be limited to non-compliance related to the drainage area(s) within the jurisdiction where the flood control district has authority over the relevant portions of the MS4 physical infrastructure.

The WLA may be assigned to additional responsible jurisdictions discharging urban runoff and stormwater in the future under Phase II of the National Stormwater Permitting Program, or other applicable regulatory programs.

On January 16, 2008, Los Angeles Regional Board staff conducted a site inspection in response to the City of Simi Valley's request brought during the CEQA Scoping meeting for the Malibu Creek Watershed Trash TMDL. The City of Simi Valley requested that Regional Board staff evaluate the responsibilities of the City as a responsible jurisdiction. Based on geographical information system (GIS) data, Simi Valley has approximately 118 acres of property within the upper Las Virgenes Creek Subwatershed. According to the 1991 land use data published by the Southern California Association of Governments (SCAG), all of the subject land area is undeveloped open space. Access to the area is limited to two fire roads, and is restricted because the entrance is within gated private properties. During the inspection, there was no trash found along the road and within the range of visibility. Given these findings, the Regional Board staff did not include Simi Valley on the list of Responsible Jurisdictions for the Malibu Creek Watershed Trash TMDL, since the responsibility of Simi Valley is minimal, if any. The area within the City of Simi Valley that is part of the watershed addressed by this TMDL continues to have the same consideration. Therefore, the City of Simi Valley is not included as a responsible jurisdiction in this Santa Monica Bay Debris TMDL. However, if there are any changes in land use in the portion of the City within this TMDL, the Los Angeles

Regional Board reserves the right to reconsider the City's responsibility under this TMDL, and to impose TMDL requirements on Simi Valley to ensure that water quality is protected.

Load Allocations are assigned to jurisdictions that own and/or manage beaches and harbors along Santa Monica Bay, which include California Department of Parks and Recreation, County of Los Angeles Department of Beaches and Harbors, Cities of Hermosa Beach, Los Angeles, Santa Monica, and Redondo Beach.

The National Park Service, California Department of Parks and Recreation, County of Los Angeles, County of Ventura, and State Lands Commission, which have jurisdiction over non-beach open space and/or parks are assigned LAs. The LA may be assigned to additional responsible jurisdictions and/or agencies in the future under appropriate regulatory programs.

Waste Load Allocations for Plastic Pellets

The WLA for plastic pellets is zero discharge from the premises of industrial facilities that import, manufacture, process, transport, store, recycle or otherwise handle plastic pellets. The WLA is consistent with Cal. Water Code § 13367 and 40 CFR 122.26(b)(12).

For point sources of plastic pellets, the strategy for attaining water quality standards focuses on assigning WLAs to industries engaged in the manufacture, transport or handling of plastic pellets. The WLAs will be implemented through permit requirements.

WLAs for plastic pellets are assigned to permittees of the Industrial Storm Water General Permit (Order No. 97-03-DWQ, and NPDES Permit No. CAS 000001) within the Santa Monica Bay WMA. The Standard Industry Classification (SIC) codes associated with industrial activities involving plastic pellets may include, but are not limited to, 282X, 305X, 308X, 39XX, 25XX, 3261, 3357, 373X, and 2893. Additionally, industrial facilities with the term "plastic" in the facility or operator name, regardless of the SIC code, may be subject to the WLA for plastic pellets. Other industrial permittees within the Santa Monica Bay WMA that fall within the above categories, but are regulated through other general permits and/or individual industrial storm water permits are also required to comply with the WLA for plastic pellets.

A. Waste Load Allocations

A.1 Baseline Waste Load Allocation for Trash for MS4 Responsible Jurisdictions

The Baseline Waste Load Allocation for any single permittee is the sum of the products of each land use area multiplied by the Waste Load Allocation for the land use area, as shown below:

$$WLA = \sum \text{for each city} \left(\text{area by land uses} \bullet \text{allocations for this land use} \right)$$

Southern California Association of Governments (SCAG) classified twelve types of land uses for every city and unincorporated area in the watershed. The land use categories are: (1) high density residential, (2) low density residential, (3) commercial and services, (4) industrial, (5) public facilities, (6) educational institutions, (7) military installations, (8) transportation, (9) mixed urban, (10) open space and recreation, (11) agriculture, and (12) water.

Data collected during implementation of the Trash Monitoring and Reporting Plan can be used to establish specific site trash generation rates for various or all land uses. The land use categories relevant to the Santa Monica Bay are:

- High density residential,
- Low density residential,
- Commercial,
- Industrial,
- Military,
- Public Facilities,
- Transportation,
- Agriculture,
- Educational institutions, and
- Open space and recreation.

Transportation land use under Caltrans' jurisdiction will be covered under Caltrans' permit. Caltrans will be required to submit a monitoring plan for that land use, and will be assigned a Waste Load Allocation. Major boulevards that are currently under Caltrans' jurisdiction, but are affected by trash generated on municipal sites will be addressed by the cities concerned.

All different land uses may be assumed to have the same litter generation rate unless data is collected separately for specific land uses.

Responsible jurisdictions may provide acreage of above mentioned land uses within their jurisdiction in order to revise their contributions from their assigned Baseline Waste Load Allocations. The Baseline Waste Load Allocations for responsible jurisdictions are presented in Table 9. For responsible jurisdictions that are only partially located in the watershed, the square mileage indicated is for the portion in the watershed only. The values shown are uncompressed volume in gallons. A more detailed breakdown along land uses is provided in Appendix II.

A.1.1 Baseline WLAs for Trash for MS4 Responsible Jurisdictions North and West of the Malibu Creek Watershed

The Santa Monica Bay Debris TMDL includes some jurisdictions that have been identified as responsible jurisdictions under the existing Malibu Creek Trash TMDL. The Malibu Creek Trash TMDL only addresses limited reaches in the Malibu Creek Watershed. However, the remaining part of the Malibu Creek Watershed is to be incorporated into this TMDL. To be consistent, responsible jurisdictions in the Malibu Creek Watershed and areas at the west end of the Santa Monica Bay Watershed will be assigned the same Waste Load

Allocation that was established in the Malibu Creek Trash TMDL. The Waste Load Allocation is 640 gallons of trash per square mile per year.

As discussed in the Problem Statement chapter of this report, the northern portion of the Santa Monica Bay Watershed is characteristically different from the southern portion of the watershed. The Malibu Creek Subwatershed and the areas north and west of the Malibu Creek Subwatershed are typically not as developed, and have more open space than the areas to the south and east. As the City of Calabasas is located in the Malibu Creek Subwatershed, which is in the northern part of the Santa Monica Bay Watershed and is characteristically similar to other areas north and west of the Malibu Creek Subwatershed, Regional Board staff concludes that it is appropriate for the jurisdictions north and west of the Malibu Creek Subwatershed to have a Baseline Waste Load Allocation based on the trash generation rate derived from the City of Calabasas study.

A.1.2 Baseline WLAs for Trash for MS4 Responsible Jurisdictions South and East of the Malibu Creek Watershed

The area of the Santa Monica Bay Watershed to the south and east of the Malibu Creek Subwatershed is highly developed and urbanized. In 2003 and 2004, the County of Los Angeles documented the trash generation rates in the Ballona Creek Watershed to fulfill the requirements of the Ballona Creek Trash TMDL. The data collected from the Ballona Creek Watershed, which was from multiple land uses, is appropriate as the Baseline Waste Load Allocation. The Waste Load Allocation from this study is 807 gallons per square mile per year.

Municipal stormwater permittees may implement their TMRPs to obtain site specific trash generation rates during the first two years of the implementation period and, if approved by the Regional Board's Executive Officer, ultimately use these data to define the trash Baseline Waste Load Allocations. The TMRP will derive a representative trash generation rate from various land uses of responsible agencies and jurisdictions discharging stormwater to the Santa Monica Bay. This TMRP shall include, but is not limited to, assessment and quantification of trash collected from responsible jurisdiction land areas where urban runoff and stormwater discharges to the MS4, which leads to the beaches and the Santa Monica Bay. The monitoring plan shall provide details of the frequency, location, and reporting of trash monitoring. Responsible jurisdictions shall propose a metric (e.g., weight, volume, pieces of trash) to measure the amount of trash accumulated in the MS4 from the surrounding land areas. The derived trash generation rate may be used to refine the Waste Load Allocation when the TMDL is reconsidered.

A.2 Baseline Waste Load Allocations for Caltrans Stormwater Permit

During the 1998/1999 and 1999/2000 rain seasons, a Litter Management Pilot Study (LMPS) was conducted by Caltrans to evaluate the effectiveness of several litter management practices in reducing litter that is discharged from Caltrans storm water conveyance systems. The LMPS employed four field study sites; at each site, the amount of trash produced using

different BMPs was measured. The average total loads for each site normalized by the total area of control catchments is presented in Table 7, adapted from the LMPS report:

Table 7. Preliminary weight and volume for freeways by Litter Management Pilot Study (LMPS).

Weight lbs/sq mi/year	Volume cu ft/sq mi/year	Volume gal/sq mi/year
7,479.36	892.64	6,677.39

Subsequently, Caltrans launched a Gross Solid Removal Devices (GSRDs) Pilot Program to study trash removal efficiencies of various systems installed along freeways in 2000. Three preliminary designs for different GSRDs which are the Linear Radial, the Inclined Screen, and the Baffle Box were developed. These GSRDs fulfill the criteria of being certified as Full Capture Systems, to be drained within 72 hours, requiring cleanup once a year, and needing no maintenance throughout the storm season.

The Linear Radial utilizes a casing with louvers to serve as screens or mesh screen. Flows are routed through the louvers and into a vault. The Inclined Screen uses wedge-wire screen with the slotting perpendicular or parallel to the direction of flow. This device is configured with an influent trough to allow solids to settle. The Baffle Box applies a two-chamber concept: the first chamber utilizes an underflow weir to trap floatable solids, and the second chamber uses a bar rack to capture material. All of these designs were certified as Full Capture Systems by the Executive Officer of the Regional Board on October 7, 2004.

Table 8 below summarizes the annual trash loads normalized with the drainage areas at multiple sites for years 2000-2001 and 2001-2002.

Table 8. Average weight and volume for trash for freeways by Caltrans Phase I Gross Solids Removal Devices Pilot Study at Year 2000 through 2002.

Year	Weight lbs/sq mi/year*	Volume cu ft/sq mi/year	Volume gal/sq mi/year
2000-2001	157,240	4,184	31,298.41
2001-2002	146,280	4,760	35,607.18
Average	151,760	4,472	33,452.8

*The trash weight was measured after drip drying.

According to the GSRD phase I study, the baseline WLA for Caltrans is 4,472 $ft^3/mi^2/yr$, or 33,452.8 $gallons/mi^2/yr$. The GSRD study has more recent data, and is applicable to the Santa Monica Bay Watershed based on the land use, population density, and average daily traffic conditions.

A.3 Baseline Waste Load Allocation Assignments for Trash

Table 9 shows the Baseline WLAs for all point source dischargers, in gallons per year, assuming a trash generation rate of 640 $gallons/mi^2/yr$ in the Malibu Creek Subwatershed and areas north and west of the Malibu Creek Subwatershed, or 806.9 $gallons/mi^2/yr$ in areas south and east of the Malibu Creek Watershed. If the MS4 Permittees use their respective TMRPs to derive site specific trash generation rates, the Baseline WLAs will be calculated by multiplying the point source areas by the derived trash generation rates. The Baseline WLA for Caltrans

was based on a trash generation rate of 33,452.8 gallons/mi^2/yr, as determined by the GSRD study.

Table 9. Baseline Waste Load Allocations for trash, assuming corresponding trash generation rates.

Responsible Parties	Point Source Area (Mile^2)	Baseline WLA (gals/year)
County of Los Angeles	6.37	5,137.8
County of Ventura	1.11	710.1
Caltrans	1.08	36,129.0
Cities of:		
Agoura Hills	1.63	1,044.0
Calabasas	2.59	1656.4
Thousand Oaks	7.25	4,640.4
Westlake Village	4.89	3,130.9
Malibu	9.08	5,809.4
Culver City	0.06	51.9
Los Angeles	31.12	25,112.2
Santa Monica	7.03	5,671.5
El Segundo	3.39	2,732.2
Manhattan Beach	3.10	2,501.4
Hermosa Beach	1.38	1,117.3
Redondo Beach	3.96	3,196.9
Torrance	3.08	2,483.6
Palos Verdes Estates	4.15	3,345.8
Rancho Palos Verdes	8.99	7,254.3
Rolling Hills Estates	0.45	364.7
Rolling Hills	0.64	515.1

B. Load Allocations

Load Allocations (LAs) for nonpoint sources follow phased reduction from Baseline Load Allocations. According to the State's Nonpoint Source Policy, Load Allocations may be addressed by the Statewide General Permits, conditional waivers of WDRs, or individual WDRs among other implementation mechanisms.

Responsible jurisdictions shall monitor the trash quantity deposited in the vicinities of the Santa Monica Bay and its beaches to comply with Baseline Load Allocation. Data collected through the Trash Monitoring and Reporting Plan may define the quantity of trash migrating from land to the Bay.

B.1 Load Allocation for Nonpoint Source Areas Excluding Beaches

The areas adjacent to the Santa Monica Bay, or defined as nonpoint sources, are composed of multiple land uses. There are parking lots, recreational areas, picnic areas, and hiking areas in the open space/park areas under the jurisdictions of Los Angeles County, Ventura County, National Park Service, California Department of Parks and Recreation, and California State Lands Commission. By applying the similar concept that is applied for the Waste Load Allocation calculation, the Load Allocation for any designated nonpoint source area

is the sum of the products of each land use subarea multiplied by the Load Allocation for the land use subarea, as shown below:

$$LA = \sum \text{ for each Nonpoint source} \left(\text{subarea by land uses} \bullet \text{allocations for this land use} \right)$$

It may be appropriate to assume the same trash generation rate or allocation for different types of land uses.

By applying the study by the City of Calabasas, the trash generation rate from nonpoint sources areas for open space and parks areas is 640 gallons per square mile per year. Table 10 represents the baseline load allocations for nonpoint source areas of parks and open space in the Santa Monica Bay Watershed. Responsible Jurisdictions may propose and implement the Regional Board Executive Officer approved TMRPs to obtain site-specific trash generation rates for the first two years of the implementation period. The data collected including, but not limited to, the details of the frequency, location, and reporting of trash monitoring, as well as a metric (e.g., weight, volume, pieces of trash) to measure the amount of trash in the nonpoint source areas of the Santa Monica Bay may be used to refine the trash Baseline Load Allocations when the TMDL is reconsidered. Data collected shall include the trash accumulated on the open space and park areas, which could possibly be carried directly to Santa Monica Bay by sheetflow, wind or wave action, or human activities.

Table 10. Baseline Load Allocations for nonpoint source areas of parks and open space (excluding beaches), assuming a trash generation rate of 640 (gallons of uncompressed litter).

Responsible Parties	Nonpoint Source Area ($Mile^2$)	Baseline Load Allocation (gals/year)
County of Los Angeles	47.32	30,287.0
Ventura County	8.53	5,459.1
National Park Service	11.72	7,498.1
California Department of Parks and Recreation	19.05	12,190.9
State Lands Commission	1.37	879.8

B.2 Load Allocations for Beaches

The load allocation for beaches is zero trash. Current practices employed by the Los Angeles County Department of Beaches and Harbors (LACDBH) and the City of Santa Monica include daily cleanup on the beaches in their respective jurisdictions. Based on the quantity of trash collected by LACDBH, the daily cleanup has reduced approximately 8.4 million pounds of trash per year from the beaches managed by LACDBH. Additional cleanup schedules or BMPs may be necessary to achieve the load allocation. As such, responsible jurisdictions for beaches will instead be assigned a benchmark.

B.2.1 Benchmark for Beaches

The 55-miles of beaches along Santa Monica Bay, with parking lots, bike paths, and recreational parks, are major nonpoint source areas for trash. According to Los Angeles County Department of Beaches and Harbors staff, current practices include collecting trash and cleaning

beaches in their jurisdiction daily in the morning. These practices involve both heavy equipment and manual labor. In the past 20 years, Los Angeles County Department of Beaches and Harbors has collected more than 84,000 tons of debris with the most trash littered after July 4th weekend in 1992 (101 tons). Environmental groups host annual Coastal Cleanup Day activities, in which volunteers help to collect trash and debris along stretches of selected beaches in the Santa Monica Bay. Although LACDBH cleans the beach daily in the morning, visitors continue to litter on the beach throughout the day. As the Coastal Cleanup Day activities were usually conducted after LACDBH's daily cleanup for the rest of the day, the data may represent the trash that is deposited on the beach within a day. In determining the benchmark for beaches in the Santa Monica Bay, Regional Board staff considered the current practices of the Los Angeles County Department of Beaches and Harbors, and efforts put forth by volunteers and environmental organizations. As such, the Regional Board has used four years of Coastal Cleanup data from 2006-2009 to analyze the trash load to the beach by normalizing the pounds of trash collected per miles of beach that were cleaned per day, and extrapolating it to the pounds of trash per miles of beach per year (Table 11). The benchmark for beaches based on the Coastal Cleanup data is 113,150 lbs/mi/yr, or 24,941.91 gal/mi/yr.

Table 11. Average volume of trash collected from Coastal Cleanup Day from year 2006-2009.

Year	Trash Collected (pounds)	Length of Beach Cleaned (miles)	Pounds Collected/mile of Beach/day	Pounds Collected/ mile/year	Gallons Collected/ mile/year
2006	7,428	27	275.11		
2007	16,727	40.75	410.48		
2008	7,102	32.35	219.53		
2009	8,463	25	335.03		
Average			310.04	113,150	24,941.91

Table 12 summarizes the beaches and the tentative benchmarks for responsible jurisdictions, assuming a trash generation rate of 24,941.91 gal/mi/yr for beaches. The length of the beaches is determined based on Geographic Information Systems (GIS) data, and the Load Allocation is calculated by multiplying the length of the beach with 24,941.91 gal/mi/yr, or 113,150 lbs/mi/yr. In some cases, certain beaches are owned by one entity, and managed by another. Agencies and jurisdictions that own and/or manage the beach are jointly responsible to achieve LAs.

Table 12. Benchmarks for beaches, assuming a trash generation rate of 24,941.91 gal/mi/yr.

Responsible Parties	Nonpoint Source Area ($Mile^2$)	Baseline Load Allocation (gals/year)
Los Angeles County Department of Beaches and Harbors (joint responsibility is denoted below per individual beach, where applicable)		
Latigo Shores	0.04	997.7
Dan Blocker	1.05	26,147.3
Malibu	0.87	21,731.0
Las Tunas	1.40	34,935.0
Topanga	0.96	24,013.0
Will Rogers State Beach (Jointly responsible with California Department of Parks and Recreation)	2.62	65,227.8
Venice (Jointly responsible with the City of Los Angeles)	2.74	68,294.2
Marina Beach	0.28	6,978.6
Dockweiler State Beach (Jointly responsible with California Department of Parks and Recreation)	4.46	111,249.1
Manhattan Beach	2.04	50,922.8
Hermosa Beach (Jointly responsible with the City of Hermosa Beach)	1.90	47,321.2
Redondo Beach	1.57	39,066.4
Torrance	0.74	18,526.8
Royal Palms Beach	1.09	27,186.7
White Point Beach	0.60	14,965.1
Point Fermin Park Beach	0.25	6,235.5
City of Santa Monica (joint responsibility is denoted below)		
Santa Monica Beach (Jointly responsible with California Department of Parks and Recreation)	3.05	76,019.3

VI. Margin of Safety

A margin of safety (MOS) accounts for uncertainties in the TMDL analysis. The MOS can be expressed as an explicit mass load that is not allocated to responsible parties, or included implicitly in the WLAs and LAs that are allocated. Because this TMDL sets WLAs and LAs as zero trash and plastic pellets, staff finds the TMDL includes an implicit MOS and that an explicit MOS is not necessary for this TMDL.

VII. Critical Conditions

Critical conditions for the Santa Monica Bay Watershed are based on three conditions that correlate with loading conditions:

- Major Storm (as proposed by responsible jurisdictions and responsible parties in the Trash Monitoring and Reporting Plan and approved by the Executive Officer);

- Wind advisories issued by the National Weather Service or by the California Highway Patrol;

- High visitation – On weekends and holidays year-round, and on days with special events scheduled at the beach.

Critical conditions must be considered when developing plans for monitoring, assessment and collection for trash and plastic pellet discharges.

VIII. TMDL Implementation and Compliance

This section describes TMDL implementation programs for compliance with the TMDL. Compliance with the TMDL is based on the Numeric Target and the Waste Load and Load Allocations which are defined as zero trash in and on the shorelines of the Santa Monica Bay, and no plastic pellets discharged from plastic manufacturers and facilities.

TMDL compliance is assessed in accordance with Dischargers' implementation of programs for point and nonpoint source trash and plastic pellet abatement, and attainment of the progressive trash reductions in accordance with the schedules below (Tables 13 and 14).

A. Implementation and Compliance for Trash

Compliance with the Santa Monica Bay Debris TMDL is based on installation of structural best management practices such as full capture or partial capture systems, institutional controls, or any best management practices, to attain a progressive reduction in the amount of trash in the Santa Monica Bay.

For responsible jurisdictions and agencies that are also listed in the Malibu Creek or Ballona Creek Trash TMDLs, compliance with the existing Trash TMDLs will constitute compliance with the trash related requirements of the Santa Monica Bay Debris TMDL.

Nonpoint source trash dischargers may propose a program for a minimum frequency of assessment and collection in conjunction with best management practices (MFAC/BMP program). The MFAC/BMP program is required to attain a progressive reduction in the amount of trash collected from the water surface and shorelines through routine trash removal and

implementation of BMPs. Dischargers may implement structural and/or nonstructural BMPs as required to attain a progressive reduction in the amount of trash and in the Santa Monica Bay. The TMDL Implementation Plan provides separate schedules for responsible jurisdictions to achieve zero trash for point sources by implementing full capture systems or other structural and/or nonstructural BMPs, and for nonpoint sources by using MFAC/BMP programs. Key provisions of the Implementation Plan include:

- Trash monitoring to provide data to revise Baseline Waste Load and Load Allocations, assess the effectiveness of BMPs and trash abatement programs, and assess the levels of trash on the Santa Monica Bay shorelines and its source area;
- TMDL Reconsideration by the Regional Board to revise Baseline Waste Load and Load Allocations and the minimum frequency of the MFAC program, if warranted.

The TMDL includes monitoring based on a Trash Monitoring and Reporting Plan (TMRP) developed by responsible jurisdictions and approved by the Executive Officer of the Regional Board. The minimum requirement for trash monitoring includes the assessment and quantification of trash collected from source areas of the Santa Monica Bay. The monitoring plan shall provide details on the frequency, location, and reporting of trash monitoring. Responsible jurisdictions shall propose a metric (e.g., weight, volume, pieces of trash) to measure the amount of trash in storm drains, and on the surrounding land areas. Responsible jurisdictions may include other metrics to provide data for revision of the Baseline Waste Load and Load Allocations, determine effectiveness of BMPs, and assess compliance with the TMDL. Responsible Jurisdictions may coordinate their trash monitoring activities for the Santa Monica Bay Watershed. Monitoring requirements are described in greater detail in Section IX and X.

If responsible jurisdictions do not use their TMRP to derive a new trash generation rate and accept Baseline Waste Load and Load Allocations, the WLAs and LAs may be based on appropriate data, either from the City of Calabasas, or the County of Los Angeles, normalized to the subwatershed area. The City of Calabasas study quantified trash recovered from a continuous deflector system. The County of Los Angeles study quantified trash collected from catch basin inserts and Continuous Deflective Separator (CDS) units in the Ballona Creek Watershed. The data that is referenced is based on historical trash generation rates at an existing monitoring location most similar to the Santa Monica Bay Watershed, where an amount of trash discharged to the Santa Monica Bay is permitted initially under the TMDL schedule.

Site-specific conditions for the Santa Monica Bay Watershed may differ from conditions of the Calabasas Study or the Ballona Creek Watershed study. As a result, responsible jurisdictions may use the data from their TMRP in order to derive a site-specific trash generation rate and Baseline Waste Load and Load Allocations. The Baseline Waste Load and Load Allocations are used as the basis for the progressive reduction of trash in the storm drains and tributaries for both point and nonpoint sources and represent the maximum amount of trash that can be discharged in conjunction with partial capture systems, institutional controls, or any other BMPs for point sources and the programs for minimum frequency of assessment and collection for nonpoint sources.

Implementation of Load and Waste Load Allocations for Trash

TMDL implementation may require BMPs to meet the progressive trash schedule. BMPs may be implemented through stormwater permits or through a variety of mechanisms such as a general WDR, a conditional waiver from waste discharge requirements, an individual WDR, prohibitions, among others for nonpoint source dischargers. Point source dischargers will implement BMPs in accordance with Waste Load Allocations incorporated into MS4 permits. Point sources may implement full capture systems, partial capture systems or any other structural or non-structural BMPs (e.g. institutional controls) to achieve Waste Load Allocations.

A.1 Point Sources Trash

Discharge of trash from stormdrains and conveyances to the Santa Monica Bay will be regulated through the MS4 NPDES Permits for Los Angeles County and for Ventura County, and the Caltrans Statewide Stormwater Permit.

There are alternatives for responsible jurisdictions to achieve compliance with waste load allocations. As established in the Los Angeles River Trash TMDL, point source dischargers can implement full capture systems to comply with the TMDL. Point source dischargers may also implement other structural and/or non-structural BMPs, sometimes referred to as partial capture systems and institutional controls.

A.1.1 Full Capture Treatment Systems

The amount of trash discharged to the Santa Monica Bay by an area serviced by a full-capture system will be considered to be in compliance with the final Waste Load Allocation for the drainage area, provided that the Full Capture Systems are adequately sized, maintained and maintenance records are available for inspection by the Regional Board.

A full capture system is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate Q resulting from a one-year, one-hour storm in the subdrainage area. The Rational equation is used to compute the peak flow rate: $Q = C \times I \times A$, where Q = design flow rate (cubic feet per second, cfs); C = runoff coefficient (dimensionless); I = design rainfall intensity (inches per hour). Compliance with the TMDL schedule for full capture systems will be based on the percentage of the Santa Monica Bay watershed area that is outfitted with full capture systems. Alternatively, compliance will be based on the percentage of total catch basins outfitted with full capture systems. The TMDL Implementation Plan provides a total of eight years to install full capture systems. Compliance with the final Waste Load Allocation will be assumed wherever Full Capture Systems are installed in the storm drains discharging to Santa Monica Bay. The installation of a Full Capture System by a discharger does not establish any presumption that the system is adequately sized or maintained, and the Regional Board will review sizing and other data in the future to validate that a system satisfies the criteria established in this TMDL for a Full Capture System.

A.1.2 Structural and/or Non-structural Best Management Practices (BMPs)

Compliance with the final waste load allocations may also be attained by implementing other structural and/or non-structural BMPs. Responsible jurisdictions shall propose structural and/or non-structural BMPs which will be identified in the Regional Board Executive Officer approved TMRP. These BMPs should be applied to prevent trash from entering the Santa Monica Bay (Figure 7). For example, street sweeping or partial capture systems installed in the catch basins or stormdrains or their combination, can be used to prevent trash from being discharged into the Santa Monica Bay at levels that exceed the Baseline Waste Load Allocation. Progressive reductions in trash will be achieved over eight years.

Measuring the effectiveness of partial-capture systems and institutional controls is more complicated. The discharge resulting from an area addressed by partial capture and/or institutional controls will be estimated using a mass balance approach, based on the daily generation rate (DGR) for the specific area. [Note: The DGR should not be confused with the trash generation rates obtained during baseline monitoring. The baseline monitoring program is designed to obtain "typical" trash generation rates for a given land use. Those values are then used to calculate a Permittee's baseline load allocation. The DGR is the average amount of trash deposited within a specified drainage area over a 24-hour period. The DGR will be used in a mass balance equation to estimate the amount of trash discharged during a rain event.]

Annual re-calculation of the DGR will serve as a measure of the effectiveness of source reduction measures including public education, enforcement of litter laws, etc. Source reduction measures will be accredited based on an annual recalculation of the DGR to allow for progressive improvement and/or to account for backsliding.

The DGR will be determined from direct measurement of trash deposited in the drainage area during any 30-day period from June 22nd to September 22nd of a given year[2], and recalculated every year thereafter. This three-month period was assumed to be a time characterized by high outdoor activity when trash is most likely to be deposited on the ground. The recommended method for measuring trash during this time period is to close the catch basins in a manner that prevents trash from being swept into the catch basins and then to collect trash on the ground via street sweeping, manual pickup, or other comparable means. The DGR will be calculated as the total amount of trash collected divided by 30 (the required duration of trash collection).

Accounting of DGR and trash removal via street sweeping, catch basin clean outs, etc. will be tracked in a central spreadsheet or database to facilitate the calculation of discharge for each rain event. The spreadsheet and/or database will be available to the Regional Board for inspection during normal working hours. The database/spreadsheet system will allow for the computation of calculated discharges and can be coordinated with enforcement. This database will be developed by cities or groups of cities.

The Executive Officer may approve alternative compliance monitoring programs other than those described above, upon finding that the program will provide a scientifically-based estimate of the amount of trash discharged from the storm drain system.

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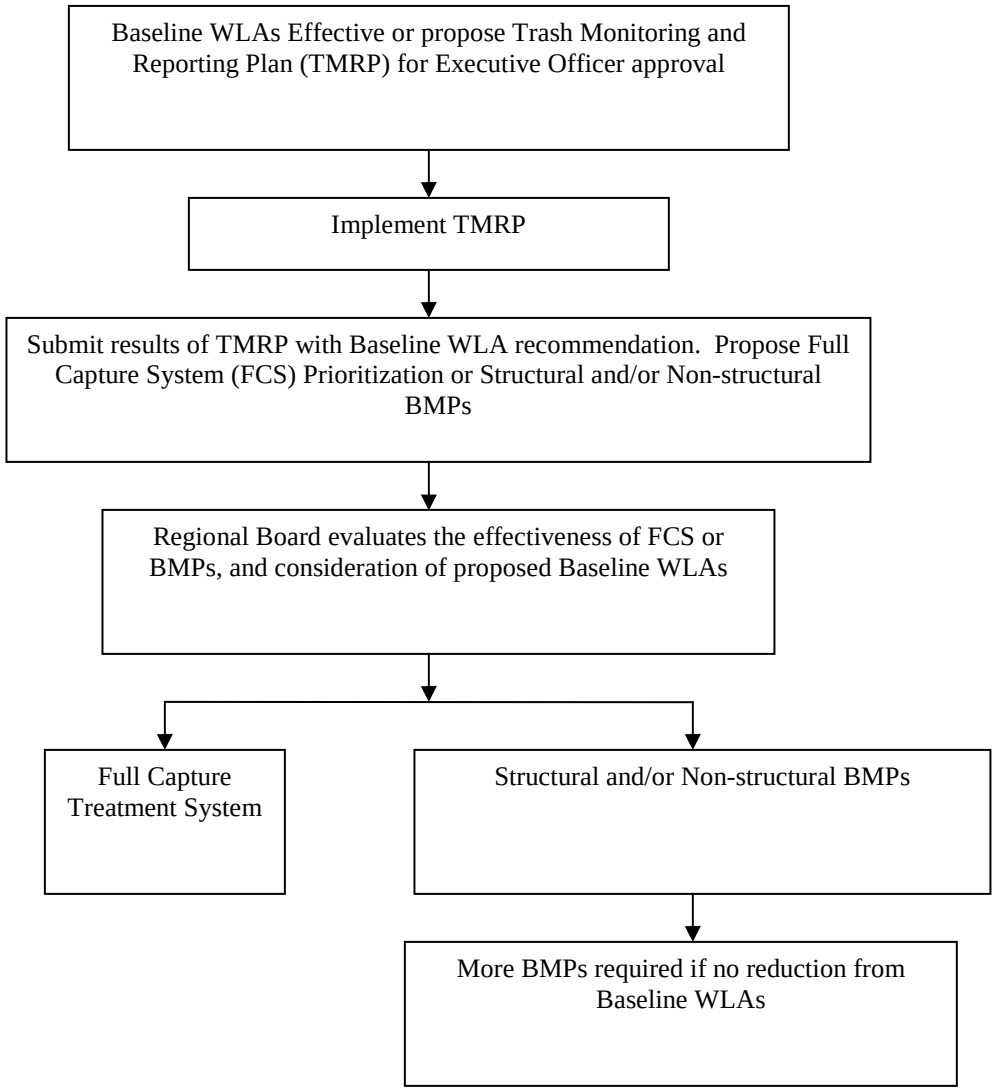
[2] Provided no special events are schedule that may affect the representative nature of this period.

Baseline Waste Load Allocations will apply at the effective date of the Santa Monica Bay Debris TMDL. Alternatively, responsible jurisdictions may propose a TMRP for Regional Board Executive Officer approval, which will collect site specific trash generation data to establish Baseline Waste Load Allocations. The first compliance point will be at the end of the fourth year with Waste Load Allocations equal to a 20% reduction of the amount of trash from the Baseline Waste Load Allocation. Compliance thereafter will be evaluated at the end of each successive storm season with Waste Load allocations equal to successive 20% reductions of the Baseline Waste Load Allocation (Table 14).

Responsible jurisdictions will be deemed in compliance with the final Waste Load Allocation upon results of the trash monitoring and reporting plan demonstrating that no trash greater than 5 mm in size is discharged to the Santa Monica Bay through point sources. If the amount of trash from point sources does not progressively decrease, then responsible jurisdictions must implement additional structural and/or non-structural BMPs to ensure reductions.

The Regional Board may revise the TMDL schedule and the Executive Officer approved TMRP based on the results of the trash monitoring and reporting program.

Figure 7. Flowchart for Point Source Implementation for Trash.



A.2 Nonpoint Source Trash

Two primary federal statutes establish framework in California for addressing nonpoint source (NPS) water pollution: Section 319 of the Clean Water Act (CWA) of 1987 and Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA). In accordance with these statutes, the state assesses water quality associated with nonpoint source pollution (NPS) and develops programs to address NPS. In 2004, The State Water Resource Control Board (SWRCB), in its continuing efforts to control NPS pollution in California, adopted the Plan for California's Nonpoint Source Pollution Control Program (NPS Program Plan). The NPS Program Plan prescribes implementation and monitoring of Best Management Practices to address nonpoint source pollution.

LAs shall be implemented consistent with the Statewide Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program through a general waiver of

waste discharge requirements (WDR), individual waivers, a general WDR, an individual WDR, a memorandum of understanding (MOU), a cleanup and abatement order, or any other appropriate order or orders, provided the program is consistent with the assumptions and requirements of the reductions described in Table 7-34.3, below.

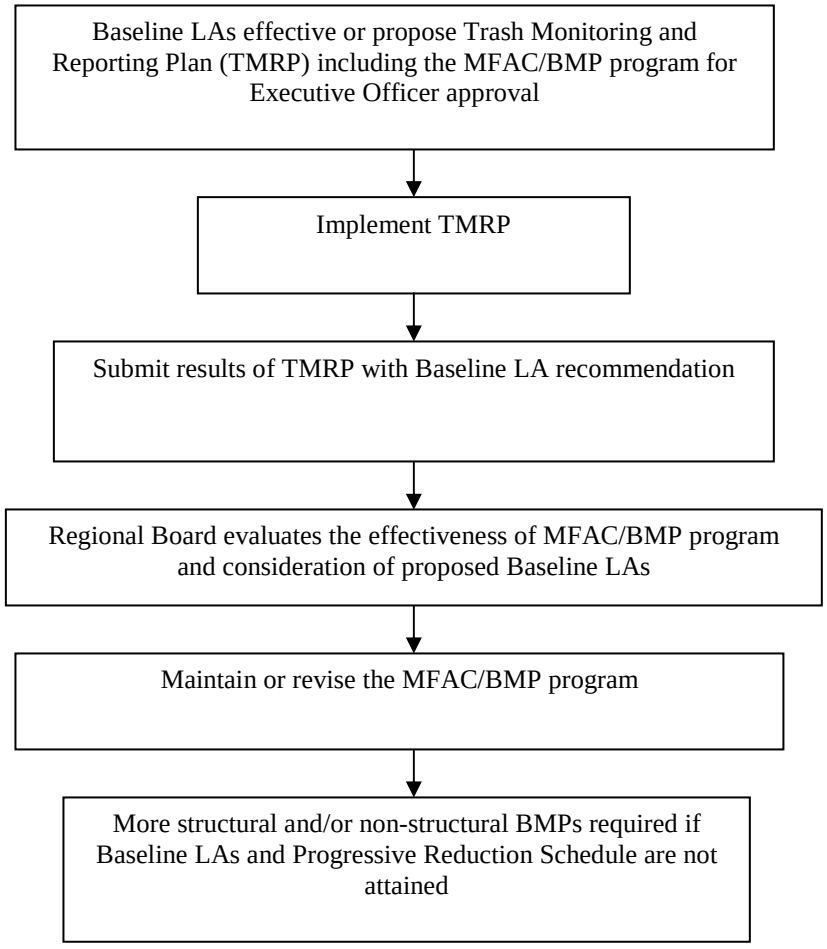
Nonpoint source dischargers may achieve the LAs by implementing an MFAC/BMP program approved by the Executive Officer. Responsible jurisdictions will be deemed in compliance with the LAs if an MFAC/BMP program, approved by the Executive Officer, demonstrates that there is no accumulation of trash, as defined in "Numeric Targets". The MFAC/BMP Program must include an initial minimum frequency of trash assessment and collection and suite of structural and/or nonstructural BMPs. The MFAC/BMP program shall include collection and disposal of all trash found in the source areas and along the shoreline. Responsible jurisdictions shall implement an initial suite of BMPs based on current trash management practices in land areas that are found to be sources of trash to waterbodies within the Santa Monica Bay WMA and to Santa Monica Bay.

The report submitted as a result of implementing the Trash Monitoring and Reporting Plan by responsible jurisdictions (also see Table 16) will provide data that may be used to propose an appropriate Baseline Load Allocation. Nonpoint source dischargers will be considered in compliance of attaining zero trash if trash does not accumulate in a deleterious amount on the surface and the shorelines to adversely affect the beneficial uses and cause nuisance to the Santa Monica Bay.

Responsible jurisdictions shall propose their initial minimum frequencies for clean up events in their respective Trash Monitoring and Reporting Plans, which must be approved by the Executive Officer of the Regional Board. In subsection A.2, below, cleanup frequencies are prescribed for open space and parks areas. In addition, as a general guideline for cleanup frequencies of beach and harbor areas, the Regional Board recommends the initial minimum frequencies for each responsible jurisdiction.

LAs will be implemented through a regulatory structure that provides for continued monitoring and iterative implementation of BMPs to attain zero trash within the TMDL Implementation Schedule (Figure 8). Based on the trash generation rate derived from the TMRP during the first two years of implementation, the Regional Board will consider the proposal of a site specific Load Allocation for individual waterbodies in the Santa Monica Bay Watershed (Table 14).

Figure 8. Implementation Schematic for Nonpoint Sources.



A.2.1 Responsible Jurisdictions for Non-Beach Open Space/Parks in the Santa Monica Bay Watershed

For each responsible jurisdiction, the initial minimum frequency shall be set as follows:

County of Los Angeles, County of Ventura, National Park Service, California Department of Parks and Recreation, and State Lands Commission are required to identify locations where the most trash is littered and accumulated within their jurisdictional areas in the proposed TMRP. These identified locations shall be cleaned with a frequency of no less than once per month throughout the year. The identified locations shall also be cleaned within 72 hours after critical conditions when safety hazards are removed, and immediately after special events held on the grounds of any responsible jurisdiction.

A.2.2 Beaches Along Santa Monica Bay

California Department of Parks and Recreation, Los Angeles County Department of Beaches and Harbors and the Cities of Hermosa Beach, Los Angeles, Santa Monica, and

Redondo Beach may achieve compliance with the Load Allocations by implementing an MFAC/BMP program approved by the Executive Officer. The MFAC/BMP Program includes an initial minimum frequency of trash assessment and collection and suite of structural and/or non-structural BMPs. The MFAC/BMP program shall include collection and disposal of all trash found on the shoreline and beach parking lots, or in areas close enough in proximity to the Santa Monica Bay such that wind or stormwater runoff may carry the trash into the bay.

For the beaches along the Santa Monica Bay, the Regional Board recommends that the Los Angeles County Department of Beaches and Harbors, and City of Santa Monica, together with the respective owners of specific beaches, including California Department of Parks and Recreation, and the Cities of Hermosa Beach, and Los Angeles:

1. Remove trash on the shorelines, beach and areas adjacent to Santa Monica Bay on a daily basis throughout the entire year.
2. Clean the shorelines, beach and areas adjacent to Santa Monica Bay immediately after critical conditions and after special events held at the beach, when no safety hazards are present.

Compliance Assessments

Assessment will be conducted at accessible areas as defined in the approved Trash Monitoring and Reporting Plan. Collection is defined as picking up 100% of trash and depositing it in a trash receptacle for proper disposal. All trash collected during the implementation of the MFAC, including trash from any beach raking and sanitizing operations, will be disposed of properly according to existing policies and regulations.

Compliance will be measured by quantifying trash left on the beaches between the high water line and the water immediately following the collection event. Zero trash must be demonstrated following collection events in order to be in compliance with the Santa Monica Bay Debris TMDL. Regional Board staff suggests that monitoring, based on the Rapid Trash Assessment protocol developed by the Storm Water Ambient Monitoring Program (SWAMP), be done once per beach per year during the hot season at a minimum of three locations per beach. Prioritization of the monitoring locations should be made by the responsible jurisdiction based on possible "hot spots" where trash may have a tendency to collect.

Afternoon Evaluations

In addition to compliance monitoring immediately following the collection event, the Regional Board recommends that the responsible jurisdictions for beaches also monitor twelve beaches per year (at least three locations per beach) at a given time in the afternoon to determine whether trash is showing a decreasing trend on the beaches. The same afternoon evaluation also applies to the beach under the management of the City of Santa Monica. Similar to the compliance monitoring following cleanup events, the locations chosen by the responsible jurisdiction will be prioritized based on possible "hot spots" where trash tends to collect on the beach. These monitoring events will include the shoreline and parking lots, or areas close enough in proximity to the Santa Monica Bay. If the afternoon monitoring does not show a decreasing trend of trash left on the beach, the responsible jurisdiction must implement further BMPs in order to remain in compliance with the Santa Monica Bay Debris TMDL.

The trash quantity collected from representative beaches in the afternoon is to compare with the benchmark established by data from Coastal Cleanup Days. The temporal data shall exhibit a decreasing trend which indicates the effectiveness of implementing structural or non-structural BMPs. If a decreasing trend is not observed, the responsible jurisdiction shall implement additional BMPs.

A.2.3 Harbors in the Santa Monica Bay

The State Water Resources Control Board is currently developing a statewide Marina Permit, which intends to regulate marinas and mooring fields in coastal regions of California that contain slips or mooring locations for 10 or more boats. The tentative requirements may be applied to discharges from general marina operations that result in the deposition of debris on the ground and light enough to be swept away by flowing storm water and/or air currents into marina waters. The Santa Monica Bay Debris TMDL will be consistent with the final requirements of the Statewide Marina Permit. Responsible jurisdictions shall fulfill the requirements set forth in this Santa Monica Bay Debris TMDL and continue to comply with both the TMDL and permit requirements once the permit becomes effective.

Los Angeles County Department of Beaches and Harbors and the City of Redondo Beach are responsible jurisdictions for harbors in the Santa Monica Bay. The responsible jurisdictions can achieve compliance with the Santa Monica Bay Debris TMDL by implementing an MFAC/BMP program that shall include collection and disposal of all trash found on harbor property (land) in areas close enough in proximity to the Santa Monica Bay such that wind or stormwater sheet flow may carry the trash into the bay, and in the water where it is accessible and safe to collect trash.

For harbors in the Santa Monica Bay, the Regional Board recommends that the Los Angeles County Department of Beaches and Harbors and the City of Redondo Beach:

1. Remove trash from the land areas of the harbors that are adjacent to the Santa Monica Bay on a daily basis throughout the year.
2. Remove trash on the accessible water areas of the harbors on a weekly basis throughout the year.
3. Clean the land areas of the harbors that are adjacent to the Santa Monica Bay, and clean accessible water areas of the harbors immediately after critical conditions and after special events held at the harbors, when no safety hazards are present.

The TMRP will define accessible areas where the assessment will take place, both on the water, and on the land areas of the harbors. Collection is defined as picking up and properly disposing of 100% of the trash.

Los Angeles County Department of Beaches and Harbors and the City of Redondo Beach shall also conduct compliance assessment and afternoon evaluations for harbors as described in A.2.2.

At the end of the implementation period, a revised MFAC/BMP program may be required if the Executive Officer determines that the amount of trash accumulating between collections is causing nuisance or otherwise adversely affecting beneficial uses. Specifically, the Executive Officer may approve or require a revised assessment and collection frequency and definition of the critical conditions:

(a) To prevent trash from accumulating in deleterious amounts that cause nuisance or adversely affect beneficial uses between collections;
(b) To reflect the results of trash assessment and collection;
(c) If the amount of trash collected does not show a decreasing trend, where necessary, such that a shorter interval between collections is warranted; or
(d) If the amount of trash collected is decreasing such that a longer interval between collections is warranted.

With regard to (a), (b) or (c), above, the Executive Officer is authorized to allow responsible jurisdictions to implement additional structural and/or non-structural BMPs in lieu of modifying the monitoring frequency.

Alternatively, responsible jurisdictions may propose, or the Regional Board may impose, an alternative program, provided the program is consistent with the assumptions and requirements of the reductions described in Table 16, below.

B. Implementation and Compliance for Plastic Pellets

As the Debris TMDL is inclusive of plastic pellets, industries that manufacture, store, transport, or otherwise handle plastic pellets as raw material must comply with a WLA of zero plastic pellets. The zero WLA for the plastic pellets requires that no plastic pellets are allowed to be released, found, or accumulated outside of the premises of the industries or in any stormwater capture device that may be connected with the MS4. Consistent with California Water Code § 13367 and 40 CFR 122.26(b)(12). WLAs for plastic pellets are assigned to permittees of the Industrial Storm Water General Permit (Order No. 97-03-DWQ, and NPDES Permit No. CAS 000001) within the Santa Monica Bay WMA. The Standard Industry Classification (SIC) codes associated with industrial activities involving plastic pellets may include, but are not limited to, 282X, 305X, 308X, 39XX, 25XX, 3261, 3357, 373X, and 2893. Additionally, industrial facilities with the term “plastic” in the facility or operator name, regardless of the SIC code, may be subject to the WLA for plastic pellets. Other industrial permittees within the Santa Monica Bay WMA that fall within the above categories, but are regulated through other general permits and/or individual industrial storm water permits are also required to comply with the WLA for plastic pellets.

Industries must comply with the Statewide Industrial Permit or other general or individual industrial permits, which require a Stormwater Pollution Prevention Plan (SWPPP) to be prepared and kept onsite at all times. The SWPPP should address the areas where pellets tend to spill, as well as an overall plan to keep plastic pellets from being released off of the premises. The SWPPP shall incorporate structural and nonstructural BMPs that are implemented to keep pellets on site, including specific practices that are used to clean up incidental or large spills.

Jurisdictions and agencies identified as responsible jurisdictions for point sources of trash in this Santa Monica Bay Debris TMDL and in the existing Malibu Creek and Ballona Creek Trash TMDLs shall either prepare a Plastic Pellet Monitoring and Reporting Plan (PMRP), or demonstrate that a PMRP is not required under certain circumstances. The PMRP will serve to monitor the amount of plastic pellets being discharged from the MS4, establish triggers for a possible need to increase industrial facility inspections and enforcement of SWPPP requirements for industrial facilities identified as responsible for the plastic pellet WLA, and address possible plastic pellet spills. In the event of a plastic pellet spill, the Regional Board shall be notified by the agency or jurisdiction within 24 hours of the responsible agency or jurisdiction becoming aware of the spill. The PMRP shall include protocols for a timely and appropriate response to possible plastic pellets spills within their jurisdictional area, and a comprehensive plan to ensure that plastic pellets are contained.

Responsible jurisdictions that have industrial facilities or activities related to the manufacturing, handling, or transportation of plastic pellets within their jurisdiction must prepare a PMRP.

Responsible jurisdictions that have no industrial facilities or activities related to the manufacturing, handling, or transportation of plastic pellets may not be required to conduct monitoring at MS4 outfalls, but must have a response plan in place to address plastic pellet spills. If satisfactory documentation is provided that shows there are no industrial facilities or activities related to plastic pellets within the jurisdiction, the responsible jurisdiction may be excused of the requirement to monitor MS4 outfalls.

Responsible jurisdictions that only have residential areas within their respective jurisdictions, and have limited commercial or industrial transportation corridors (including railways and roadways), may be exempted from the requirements of preparing a PMRP. In order for a responsible jurisdiction to be exempted from this requirement, sufficient documentation including municipal zoning plans must be submitted to the Regional Board and approved by the Executive Officer.

If a jurisdiction changes its zoning and land use plans, or issues operating licenses to industries that import, manufacture, process, transport, store, recycle, or otherwise handle plastic pellets within its jurisdiction, then it must submit a PMRP within 90 days of the above actions.

The foreseeable methods of compliance with the plastic pellet Waste Load Allocation assigned to industrial permittees, include the implementation of best management practices such as appropriate containment systems, sealed containers, vacuum devices for cleaning, and frequent inspection and cleaning at operational areas and outlets of water discharge, to effectively control and prevent discharges of pre-production plastics pellets. In addition, necessary best management practices shall be exercised to eliminate spillage of plastic pellets during transportation that could be later mobilized and transported to waters of the State. These BMPs are discussed further in Sections F and G, below.

The TMDL implementation plan provides a total of five years from the effective date of the TMDL for industrial facilities with the given SIC codes or any facilities that handle plastic pellets to comply with the final Waste Load Allocation. The requirements of the California Water Code, Chapter 5.2, section 13367 (discussed in section I, D) have been in place for almost three years (since January 1, 2008), and given their nature (i.e., installation of containment, capture, and cleanup systems), Regional Board staff find that it is appropriate to limit the implementation schedule for compliance with the plastic pellet WLA to no more than five years from the effective date of the TMDL.

C. Coordinated Compliance

Responsible jurisdictions for this TMDL include both point source and nonpoint source dischargers. Compliance with the TMDL may be based on a coordinated Monitoring and Reporting work plan that outlines TMDL responsibilities for each responsible jurisdiction. Dischargers interested in coordinated compliance shall submit a Coordinated Monitoring and Reporting Compliance plan that outlines BMPs that will be implemented and the schedule for implementing the BMPs and MFAC program.

D. Structural BMPs

A wide variety of methods that can reduce and eliminate trash impairment in Santa Monica Bay are listed below. Structural full capture systems can be put in areas that are extensively drained by municipal separate stormwater sewer systems.

D.1 Structural BMPs for Trash

Catch Basins and Catch Basin Inserts

A catch basin or storm drain inlet is an inlet to the storm drain system that typically includes a grate or curb opening where stormwater enters the catch basin and a sump to capture sediment, debris and associated pollutants. They are also used in combined sewer watersheds to capture floatables and settle some solids. Catch basins act as pretreatment for other treatment practices by capturing large particles. The performance of catch basins at removing sediment and other pollutants depends on the design of the catch basin, and routine maintenance to retain the storage available in the sump to capture sediment.

Within a catch basin a "catch basin insert," may also be used to filter runoff entering the catch basin. There are several types of catch basin inserts. Catch basin and storm drain inserts may rely on screens, filters, bags, trays, and diversion chambers to collect and divert trash and debris.

Vortex Separation Systems

Vortex Separation Systems (VSS) units capture almost all trash deposited into a storm drain system. A VSS unit diverts the incoming flow of storm water and pollutants into a pollutant separation and containment chamber. Solids within the separation chamber are kept in continuous motion, and are prevented from blocking the screen so that water can pass through the screen and flow downstream. Solid pollutants including trash, debris and coarse sediments are retained in a centrally located solids catchment chamber with the heavier solids ultimately

settling into the base of the unit or sump. This is a permanent device that can be retrofitted for oil separation as well. Outfitting a large drainage with a number of large VSS units may be less costly than using a larger number of small VSS units.

Trash Nets

Trash nets are devices using the natural energy of the flow to trap trash, floatables and solids in disposable mesh nets. Trash nets can be placed in different ways, such as a retrofit on the end of an outfall, in line with an outfall pipe (underground), or floating at the end of an outfall.

"Release nets" are a relatively economical way to monitor trash loads from municipal drainage systems. However, in general, they can only be used to monitor or intercept trash at the end of a pipe and are considered to be partial capture systems, as the nets are usually sized at a 1/2" to 1" mesh. These nets are attached to the end of pipe systems. The nets remain in place on the end of the drain until water levels upstream of the net rise sufficiently to release a catch that holds the net in place. The water level may rise from either the bag being too full to allow sufficient water to pass, or from a disturbance during very high flows. When the nets release they are attached to the side of the pipe by a steel cable and as they are washed downstream (a yard or so) are tethered off so that no pollutants from within the bags are washed out.

Preliminary observations suggest that the nets rarely fill sufficiently to cause the bags to release. And therefore, if they are cleaned after a storm event, the entire quantity of material is captured and can be measured for monitoring purposes using two bags per trap. This makes it easy to replace the full or partially full bag with an empty one, so that the first bag can be taken to a laboratory for analysis without manual handling of the material it contains.

The nets are valid devices because of the ease of maintenance and also because the devices can be relocated after a set period at one location (provided the pipe diameters are the same).

Gross Solids Removal Devices

Several Gross Solids Removal Devices (GSRDs) were developed by the California Department of Transportation (Caltrans) to be retrofitted into existing highway drainage systems or implemented in future highway drainage systems. GSRDs are structures that remove litter and solids 5 mm (0.25 inch nominal) and larger from the stormwater runoff using various screening technologies. Overflow devices are incorporated, and the usual design of the overflow release device is based upon the design storm for the roadway. Though designed to capture litter, the devices can also capture some of the vegetative debris.

The Caltrans' GSRD Pilot Program consists of multiple phases with each phase representing one pilot study. A pilot study generally consists of one or more devices that are developed from concept, advanced through design and installation, and placed in service for two years of testing to evaluate overall performance. Three types of GSRDs have been shown the most promising: linear radial and two versions using an inclined screen.

Harbor Trash Skimmer Units

A harbor trash skimmer is a unit that is partially submerged in the water, and anchored to a dock. It uses a motor to displace water, and traps floating trash and debris, as it is sucked into the unit. The unit retains floating trash, and must be emptied.

Marine Trash Skimmer Boats

Marine trash skimmer boats consist of a catamaran type, twin hull vessel on which are mounted hydraulically powered and controlled open mesh conveyor systems to move materials. Twin, over-the-rear hydraulically powered propellers are used to clear debris without the need to take the vessel out of the water. A front mounted continuous conveyor can be lowered into the water and is capable of skimming floating debris off the surface to depths of up to 2-1/2 feet below the surface, 16 feet wide.

Debris coming up the main pickup conveyor dumps into the vessel's storage area which, with its sidewalls, can retain and store up to 12,000 pounds or 700 cubic feet of material. Once fully loaded, the vessel heads back to shore, where the operator offloads the material into dumpsters or dump trucks for off-site disposal.

D.2 Structural BMPs for Plastic Pellets

Plastic industries can utilize BMPs to ensure the complete containment of plastic pellets on site.

Containment Systems

Appropriate containment systems can be installed at all onsite storm drain discharge locations that are down-gradient of areas where preproduction plastic is present or transferred. A containment system can be a device or series of devices that traps all particles retained by a one millimeter mesh screen and has a design treatment capacity of not less than the peak flowrate resulting from a one-year, one-hour storm in each of the down-gradient drainage areas.

Capture Devices

At all points of storage and transfer of preproduction plastic, capture devices can be put in place under transfer valves and devices used in loading, unloading, or other transfer of preproduction plastic.

D.2.1 Landscape BMPs

Catch Basin Inserts

Most existing curb inlets can be retrofitted with filters to catch debris. Although many catch basin inserts capture particles larger than 5 millimeters, some technologies have been developed that will capture everything larger than fine sand. The screen creates a shearing action, and water flows across the surface which has small openings. The water can penetrate through, and the dewatered debris gets filtered out into a debris compartment.

Grading/Berms

Grading floors and parking lots of the facilities, or adding berms can ensure that plastic pellets will not be discharged. These BMPs keep pellets on site by not allowing them to be taken by stormwater or wind across a large area, where they can be dispersed and end up in the MS4. Berms and grading can allow the pellets to be directed and stormwater to flow to a smaller area, where they can be filtered out by other BMPs.

Retaining Walls

Short retaining walls can keep pellets on site. Similarly to grading and berms, retaining walls can enclose a facility and keep a specific area open, where other BMPs can catch and filter out plastic pellets.

E. Non-Structural BMPs

A wide variety of methods to address the trash impairment in Santa Monica Bay are listed below. Responsible jurisdictions shall propose the monitoring plan as well as the mitigation measures incorporating an individual method or combinations to progressively reduce nonpoint source trash. Non-structural BMPs may provide advantages over structural full capture systems in areas that are not extensively drained by municipal separate stormwater sewer systems. Foremost, institutional controls offer other societal benefits associated with reducing litter in our city streets, parks and other public areas. The capital investment required to implement non-structural BMPs is generally less than that for structural BMPs.

E.1 Non-structural BMPs for Trash

Litter Control

It is noted that ordinances which prohibit littering are already in place, listed below:

- County of Los Angeles (12.80.440 Littering and other discharge of polluting or damaging substances prohibited.)

  "No Person shall cause any refuse, rubbish, food waste, garbage, or any other discarded or abandoned objects to be littered, thrown, deposited, placed, left, accumulated, maintained or kept in or upon any street, alley, sidewalk, storm drain, inlet, catch basin, conduit, drainage structure, place of business, or upon any public or private property except when such materials are placed in containers, bags, recycling bins, or other lawfully established waste disposal facilities protected from stormwater or runoff."

- City of Ventura (i.e., San Buenaventura), Sec. 8.250.030. Littering; fine; picking up litter (Code 1971, § 4362)

  "It is unlawful to litter or cause to be littered in or upon any public or private property, or in any container, as described in this chapter, of another person without their permission."

- Ventura County (6923 Litter.)

"No Person shall throw, deposit, leave, maintain, keep, or permit to be thrown, deposited, kept, or maintained, in or upon any public or private driveway, parking area, street, alley, sidewalk, or component of the Storm Drain System or any Watercourse, any refuse, rubbish, garbage, litter, or other discarded or abandoned objects, articles, accumulations, and/or Pollutants so that the same may cause or contribute to pollution. Any Owner or Occupant of the property or responsible person who fails to remove pollutants within a reasonable time, as determined by the Director, may be charged with a violation of this Chapter."

- California Vehicle Code

  Throwing Substances on Highways or Adjoining Areas
  23111. No person in any vehicle and no pedestrian shall throw or discharge from or upon any road or highway or adjoining area, public or private, any lighted or nonlighted cigarette, cigar, match, or any flaming or glowing substance. This section shall be known as the Paul Buzzo Act. (Amended Ch. 1548, Stats. 1970. Effective November 23, 1970)

  Throwing, Depositing, or Dumping Matter on Highway
  23112. (a) No person shall throw or deposit, nor shall the registered owner or the driver, if such owner is not then present in the vehicle, aid or abet in the throwing or depositing upon any highway any bottle, can, garbage, glass, nail, offal, paper, wire, any substance likely to injure or damage traffic using the highway, or any noisome, nauseous, or offensive matter of any kind.
  (b) No person shall place, deposit or dump, or cause to be placed, deposited or dumped, any rocks, refuse, garbage, or dirt in or upon any highway, including any portion of the right-of-way thereof, without the consent of the state or local agency having jurisdiction over the highway. (Amended Ch. 74, Stats. 1980. Effective January 1, 1981)

- Fish and Game Code (Division 6, Part 1, Chapter 2, Article 1)

  5650. …It is unlawful to deposit in, permit to pass into, or place where it can pass into the waters of this state any of the following:
  (1) Any petroleum, acid, coal or oil tar, lampblack, aniline, asphalt, bitumen, or residuary product of petroleum, or carbonaceous material or substance.
  (2) Any refuse, liquid or solid, from any refinery, gas house, tannery, distillery, chemical works, mill, or factory of any kind.
  (3) Any sawdust, shavings, slabs, or edgings.
  (4) Any factory refuse, lime, or slag.
  (5) Any cocculus indicus.
  (6) Any substance or material deleterious to fish, plant life, or bird life.

  5652. It is unlawful to deposit, permit to pass into, or place where it can pass into the waters of the state, or to abandon, dispose of, or throw away, within 150 feet of the high-water mark of the waters of the state, any cans, bottles, garbage, motor vehicle or parts thereof, rubbish, or the viscera or carcass of any dead mammal, or the carcass of any dead bird.

<u>Boating Laws</u>

- International Treaty to Prevent Pollution from Ships (MARPOL Annex V)
  All ships of 400 gross tonnage and above and every ship certified to carry 15 persons or more will have to carry a Garbage Management Plan, to include written procedures for collecting, storing, processing and disposing of garbage, including the use of equipment on board. The Garbage Management Plan should designate the person responsible for carrying out the plan and should be in the working language of the crew.

  Every ship of 12 metres or more in length must also display placards notifying passengers and crew of the disposal requirements of the regulation; the placards should be in the official language of the ship's flag State and also in English or French for ships travelling to other States' ports or offshore terminals.

- 1899 Rivers and Harbors Act/Federal Refuse Act (1899 33 U.S.C. §407)
  Prohibits discharging or depositing any refuse matter of any kind into United States waters. Refuse includes: garbage, trash, oil and other liquid pollutants.

- Marine Plastic Pollution Research and Control Act

  33 CFR 151.57. Requires all oceangoing vessels 40 feet or more in length used in commerce or equipped with a galley and berthing to have a written waste management plan. The Master or person in charge of the vessel is responsible for ensuring that a written waste management plan is on board, and that each person handling garbage follows that plan. The plan must describe the vessel's procedures for collecting, processing, storing and discharging garbage, and designate the person who is in charge of carrying out the plan. Garbage (including food wastes) may not be thrown overboard on inland waters or in the ocean within three miles of land. Plastic may not be thrown overboard anywhere.

  33 CFR 151.59. Requires all vessels, 26 feet or longer to display, in a prominent place where the crew and the passengers can read it, an informational placard that notifies the reader of the following:

  (1) The discharge of plastic or garbage mixed with plastic into any waters is prohibited.

  (2) The discharge of all garbage is prohibited in the navigable waters of the United States and, in all other waters, within three nautical miles of the nearest land.

  (3) The discharge of dunnage, lining, and packing materials that float is prohibited within 25 nautical miles of the nearest land.

- California Health and Safety Code Section 117475-117500 (Pollution of navigable waters)
  117480. Every person who places, deposits, or dumps any garbage in or upon the navigable waters of this state, or who places, deposits, or loads it upon any vessel, with intent that it shall be dumped or deposited in or upon the navigable waters of this state, or at any point in the ocean within twenty miles of any point on the coast line of the state, is guilty of a misdemeanor.

- California Health and Safety Code Section 117550-117560 (Prohibited Waste Disposal)

117555. A person who places, deposits, or dumps, or who causes to be placed, deposited, or dumped, or who causes or allows to overflow, sewage, sludge, cesspool or septic tank effluent, accumulation of human excreta, or solid waste, in or upon a street, alley, public highway, or road in common use or upon a public park or other public property other than property designated or set aside for that purpose by the governing board or body having charge of the property, or upon private property without the owner's consent, is guilty of a misdemeanor.

Trash Receptacles

Most trash disposed of on the ground may result from the lack of trash receptacles. Installing trash receptacles can reduce nonpoint source trash loadings. The receptacles shall be visible and conveniently reachable for all park users. During the picnic seasons, sufficient trash and hot coal receptacles in the picnic area should be provided. Receptacles shall be equipped with lids to prevent wildlife from digging through trash or the wind from re-mobilizing the trash inside. Receptacles may be decorated but shall not cause visual intrusion to the background environment.

Varieties of land uses determine the proper locations and necessary density of the trash receptacles. More receptacles are needed along trails, near park entrances and exits, adjacent to picnic areas or areas with higher activity frequencies. Sanitation should be maintained to avoid nuisances.

Smoking Bans

- Santa Monica Municipal Code (Article 4, Chapter 4.44, Regulation of Smoking)

  "It is unlawful to smoke in the following places:…Any public beach; anywhere on the Santa Monica Pier; except in designated areas;…"

  "Disposal of Smoking Waste. No person shall dispose of any cigarette, cigar or tobacco, or any part of a cigarette or cigar, in any place where smoking is prohibited under this Chapter, except in a designated waste disposal container."

- City of Malibu Municipal Code (12.08.035 Smoking prohibited on beaches.) (Ord. 265 § 1, 2004)

  "Notwithstanding the provisions of Section 12.08.020(A), it is unlawful to smoke on any public beach or any area of the Malibu Pier not designated for smoking within the city of Malibu. For the purpose of this section, "smoking" means inhaling, exhaling, burning, or carrying any lighted cigarette, cigar or pipe. For the purpose of this section, beach shall not include parking lots or roadways."

Plastic Bag Bans

- City of Malibu Municipal Code (9.28.020 Plastic shopping bags prohibited.) (Ord. 323 § 1 (part), 2008)

"A. No affected retail establishment, restaurant, vendor or nonprofit vendor shall provide plastic bags or compostable plastic bags to customers.
B. Nothing in this section shall be read to preclude affected retail establishments, vendors and nonprofit vendors from making recyclable paper bags available to customers.
C. No person shall distribute plastic bags or compostable plastic bags at any city facility or any event held on city property.
D. This chapter shall apply only to plastic bags or compostable plastic bags provided at the point of sale for the purpose of carrying away goods. This chapter shall not apply to single-use plastic produce bags distributed in a grocery store exclusively for the purpose of transporting produce to the point of sale."

Polystyrene Bans

- City of Malibu Municipal Code (9.24.020 Food packaging prohibitions.)
  (Ord. 286 § 1 (part), 2005)

  "A. No restaurant, food packager, retail food vendor, vendor or nonprofit food provider shall provide prepared food to its customers in any food packaging that utilizes expanded polystyrene.
  B. The city of Malibu shall prohibit the use of expanded polystyrene food packaging at all city facilities. The city of Malibu shall not purchase or acquire expanded polystyrene food packaging.
  C. The use or distribution of expanded polystyrene food packaging at special events sponsored or co-sponsored by the city of Malibu shall be prohibited. This prohibition shall apply to the event organizers, agents of the event organizers, event food vendors and any other party (including nonprofit organizations) who enter into an agreement with one or more of the co-sponsors of the event to sell prepared food at the event or otherwise provide an event-related service.
  D. All facility rental agreements for any city-owned property or facility shall include a provision requiring contracting parties to assume responsibility for preventing the utilization and/or distribution of expanded polystyrene food packaging at the associated function. The facility rental agreement shall indicate that the violating contractor's security deposit will be forfeited if the parks and recreation director, or his or her designee, determines that expanded polystyrene food packaging was utilized in violation of the rental agreement."

Enforcement of Litter Laws

The existing litter laws shall be posted in the prominent location for visitors or resident to understand the regulations. It is to be noted that ordinances that prohibit litter are already in place in most cities because cities recognize that trash has become a pollutant in the storm drain system when exposed to storm water or any runoff, and prohibit the disposal of trash on public land.

Patrolling or designated personnel shall have authorities to illustrate, execute, and enforce the litter laws. The effectiveness of enforcement should be monitored.

Garbage Collection

Increasing the frequency of garbage collection may keep trash cans and receptacles from overflowing. An overflowing trash may cause the lid to be propped open, or may prevent a lid

from being used to cover the trash can. This can lead to trash being blown away, or wildlife taking trash out of the receptacles. An increase in the frequency of collection would help to ensure that trash was not accessible to wind or wildlife.

Street Sweeping

Street sweeping is one of most effective methods to keep debris, vegetation wastes, and trash away from catch basins. Although the correlation between street sweeping frequency and amount of trash collected in the waterbody has not been confirmed in the Santa Monica Bay Watershed area, it is convincing that more street sweeping will prevent more trash from being flushed by stormwater to the catch basins, and from being discharged to the waterbodies of concern.

Most municipalities have been undergoing or have had contracts with Los Angeles County and Ventura County for street sweeping programs. In the counties' unincorporated areas, street sweeping frequency may be increased to reduce trash loading.

Public Education

Public education refers to posting information, giving a presentation, or conducting direct or indirect communication with individuals. This outreach should be applied to public entities such as city halls, schools, community centers, senior centers, and to private meeting/activity locations.

The educational materials should include the relevant ordinances, the importance of protecting the environment, possible environmental and biological impacts from pollution, and the necessary response if pollution occurs.

Community Involvement

Involving communities may be more effective in promoting the importance of protecting water quality and the environment. The bonding between residents in the community makes the community more influential in educating residents about right concepts. Communities can organize activities to illustrate that environmental protection involves every individual's continuous efforts.

Beach Cleanups/Coastal Cleanup Day

Organizations such as Heal the Bay host voluntary beach cleanups throughout the year. The cleanups are hands-on opportunities for volunteers to take ownership and directly improve the condition of Santa Monica Bay beaches.

Recycling Program

A recycling program shall be developed to minimize trash sources in the vicinity of the Santa Monica Bay.

Reporting System

Patrol personnel, park and beach users, or residents should report accumulation of trash or illegal disposal of trash to the waterbodies and their adjacent areas. Information with a toll-free number and communication devise shall be conveniently available near the waterbodies for timely reporting. Responsible jurisdictions, after receiving reports, should conduct inspections to formulate proper cleanup actions.

Stenciling

Stencils are to remind the residents and park users of the importance of maintaining water quality and of the existing ordinances. Signs should be placed in prominent locations where most people will view them, and should contain appropriate symbols as well as clear written messages, and cite the appropriate federal, state and county codes including the largest possible penalty amount for violation of codes.

Consideration of Picnic Area Relocation

Trash found in the waterbodies may be the result of stormwater flushing or wind re-mobilizing trash originally disposed of around picnic areas. If stormwater or wind is the dominant factor causing trash impairment, and trash is constantly found near picnic areas, it may be a solution to reconsider the proper location of picnic area.

The further the picnic area away from waterbodies, the longer time or more mobilization energy it needs from stormwater or wind to carry trash to waterbodies of concerns. Trash may be cleaned before reaching waterbodies. A proper monitoring period to analyze the cause of trash is necessary prior to considering this option.

Imposition of Trash Tax

Trash often discovered on source areas in the Santa Monica Bay Watershed is paper or plastic food or beverage containers, plastic bottles, paper plates, aluminum cans, or plastic bags. This trash shares the same characteristics as packaging utilized in the fast food stores. The evidence of trash causing the Santa Monica Bay trash impairment may be used to justify an increase in the retail price of disposable food or beverage packaging to compensate for the potential environmental impacts. The additional tax income can contribute to preventive or cleanup actions for the Santa Monica Bay.

The City of Oakland enacted the first tax on fast food restaurants and convenience stores in the nation. They are using the money they raise from the litter tax to hire crews to clean up litter.

Cooperation of Potential Sources of Trash

Stores carrying goods considered potential sources of trash to the waterbody or its adjacent areas can advise their patrons to handle the packaging, residuals or any trash parts in an environmentally friendly manner. Similar to the stencils, signs with clear language containing ordinances, and a penalty of violation should be posted near the cashier, exit and parking lot.

Surveillance Camera

Surveillance cameras can be installed to monitor the water quality and any illegal disposal which may require immediate cleanup. They can also be used to enforce the littering laws if necessary.

Programs of Adopting Waterbodies, Parks, etc.

This concept is adapted from the “adopt a highway” program. The participation from industries in the Santa Monica Bay Watershed will help the responsible jurisdictions to maintain the cleanliness of the environment, and increase the cleaning frequency. Industries or any entities that contribute resources, time, or efforts to keep the environment clean may be encouraged by being acknowledged publicly or financially.

E.2 Non-structural BMPs for Plastic Pellets

- Zero Pellet Loss Programs

  Operation Clean Sweep is a program developed by the Society of the Plastics Industry and the American Plastics Council. The program focuses on zero pellet loss, and involves BMP training and education for industries. Issues that may be addressed in these programs include:

  Education and Training in the Workplace

  Plastic industries can hold training for new employees and refresher courses for existing employees every year, which address specific non-structural BMPs that should be applied in the workplace. At the end of the training, employees could sign agreements that ensure that they will carry out these BMPs on a daily basis.

  Sweeping, Vacuuming

  Industries should have the proper equipment present and in working order so that employees can clean large or incidental plastic pellet spills as they occur. For example, brooms, dust pans, and vacuums with the proper attachments should be available and utilized immediately after each transfer of pellets or anytime there are pellets released onto the premises.

  Bins and Trays to Catch Pellets

  Placing bins or trays underneath transfer points while transferring pellets can ensure that no loose pellets fall onto the ground. Plastic pellets that are spilled will be caught in the bins or on the trays.

  Sealing and Double Bagging Pellets

  Keeping plastic pellets double bagged and sealed during transport or when stored will keep pellets from being unnecessarily spilled. In addition, at all points of preproduction plastic storage and transfer, measures can be taken to prevent discharge by making sure that sealed containers or bags are durable enough so as not to rupture under typical loading and unloading activities.

  Sealing Transport Cars/Carriers

  When plastic pellets are being transported, completely sealing railroad cars and trucks will keep pellets from escaping.

F. Implementation Schedule

The TMDL Implementation Schedule is designed to provide responsible jurisdictions flexibility to implement structural and non-structural BMPs to address trash and plastic pellets in the source areas of the Santa Monica Bay Watershed. Implementation consists of implementing a suite of the aforementioned BMPs and development of monitoring plans by responsible jurisdictions and implementation of the Executive Officer approved Trash Monitoring and Reporting Plan.

Table 13. Implementation Schedule for Point Sources for Trash

Task No.	Task	Responsible Jurisdiction	Date
1	Submit Trash Monitoring and Reporting Plan (TMRP), including a plan for defining the trash baseline WLA, a proposed definition of "major rain event," and either a Plastic Pellet Monitoring and Reporting Plan (PMRP) for monitoring plastic pellet discharges from the MS4, increased industrial facility inspections and enforcement, and response to possible plastic pellet spills, or a demonstration that a PMRP is not required[3].	California Department of Transportation, Los Angeles County Flood Control District, Los Angeles County, Ventura County Watershed Protection District, County of Ventura, and Cities of Agoura Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Thousand Oaks, Torrance, and Westlake Village. For PMRP ONLY[4] The Cities of Beverly Hills, Inglewood, West Hollywood, and Hidden Hills.	6 months from effective date of TMDL. If a plan is not approved by the Executive Officer within 9 months, the Executive Officer will establish appropriate monitoring plans.
2	Implement TMRP and PMRP.	California Department of Transportation, Los Angeles County Flood Control District, Los Angeles County, Ventura County Watershed Protection District, County of Ventura, and Cities of Agoura Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Thousand Oaks, Torrance, and Westlake Village. For PMRP ONLY[4] The Cities of Beverly Hills, Inglewood, West Hollywood, and Hidden Hills.	6 months from receipt of letter of approval from Regional Board Executive Officer, or the date a plan is established by the Executive Officer.
3	Submit results of implementing TMRP and	California Department of Transportation, Los Angeles	Twenty (20) months from

[3] The responsible jurisdictions and agencies shall provide documentation as specified in Table 7-34.1.
[4] The monitoring and reporting requirements under the Ballona Creek Trash TMDL and Malibu Creek Trash TMDL for areas within those subwatersheds fulfill the requirement herein to prepare and implement a TMRP. Therefore, only a PMRP is required from these jurisdictions.

	PMRP, recommend trash baseline WLA, and propose prioritization of Full Capture System installation or implementation of other measures to attain the required trash and plastic pellet reduction.	County Flood Control District, Los Angeles County, Ventura County Watershed Protection District, County of Ventura, and Cities of Agoura Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Thousand Oaks, Torrance, and Westlake Village. For PMRP ONLY[4] The Cities of Beverly Hills, Inglewood, West Hollywood, and Hidden Hills.	receipt of letter of approval for the Trash Monitoring and Reporting Plan and PMRP from Regional Board Executive Officer, and annually thereafter.
4	Installation of Full Capture Systems or other measures to achieve 20% reduction of trash from Baseline WLA[5].	California Department of Transportation, Los Angeles County, County of Ventura, and Cities of Agoura Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Thousand Oaks, Torrance, and Westlake Village.[6]	Four years from effective date of TMDL.

[5] Compliance with percent reductions from the Baseline WLA will be assumed wherever properly-sized full capture systems are installed and properly operated and maintained in corresponding percentages of the conveyance discharging to waterbodies within the Santa Monica Bay Watershed or directly to Santa Monica Bay.
[6] Each responsible jurisdiction and agency, identified above, shall comply with the interim or final Waste Load Allocations for trash assigned to it and, therefore, should utilize all compliance strategies within its authority to achieve these allocations.

Flood control districts, such as the Los Angeles County Flood Control District or Ventura County Watershed Protection District, may be held responsible with a jurisdiction and/or agency for non-compliance where the flood control district has either:

(i) without good cause denied entitlements or other necessary authority to a responsible jurisdiction or agency for the timely installation and/or maintenance of full and/or partial capture trash control devices for purposes of TMDL compliance in parts of the MS4 physical infrastructure that are under its authority, or
(ii) not fulfilled its obligations regarding proper BMP installation, operation and maintenance for purposes of TMDL compliance within the MS4 physical infrastructure under its authority,

thereby causing or contributing to a responsible jurisdiction and/or agency to be out of compliance with its interim or final Waste Load Allocations.

5	Installation of Full Capture Systems or other measures to achieve 40% reduction of trash from Baseline WLA[5].	California Department of Transportation, Los Angeles County, County of Ventura, and Cities of Agoura Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Thousand Oaks, Torrance, and Westlake Village.[6]	Five years from effective date of TMDL.
6	Compliance with General or Individual Industrial NPDES permit requirements to achieve the plastic pellet WLA.	Permittees of the Industrial Storm Water General Permit (NPDES Permit No. CAS 000001), other general permits, or individual industrial storm water permits for industrial activities with SIC codes that may include, but are not limited to, 282X, 305X, 308X, 39XX, 25XX, 3261, 3357, 373X, 2893, or with the term "plastic" in the facility or operator name, regardless of SIC code.	Five years from the effective date of TMDL.
7	1. Evaluate the effectiveness of Full Capture Systems or other measures to achieve trash WLA, 2. Evaluate BMPs implemented at industrial facilities for effectiveness in achieving plastic pellet WLA, 3. Reconsider the trash and plastic pellet WLAs, if warranted, and 4. Consider extension of final compliance deadline for municipalities if local ordinances banning the	Regional Board.	Five years from effective date of TMDL.

Under these circumstances, the flood control district's responsibility shall be limited to non-compliance related to the drainage area(s) within the jurisdiction where the flood control district has authority over the relevant portions of the MS4 physical infrastructure.

	use of the most commonly found types of trash are adopted and in effect within five (5) years from adoption of this TMDL.		
8	Installation of Full Capture Systems or other measures to achieve 60% reduction of trash from Baseline WLA[5].	California Department of Transportation, Los Angeles County, County of Ventura, and Cities of Agoura Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Thousand Oaks, Torrance, and Westlake Village.[6]	Six years from effective date of TMDL.
9	Installation of Full Capture Systems or other measures to achieve 80% reduction of trash from Baseline WLA[5].	California Department of Transportation, Los Angeles County, County of Ventura, and Cities of Agoura Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Thousand Oaks, Torrance, and Westlake Village.[6]	Seven years from effective date of TMDL.
10	Installation of Full Capture Systems or other measures to achieve 100% reduction of trash from Baseline WLA[5].	California Department of Transportation, Los Angeles County, County of Ventura, and Cities of Agoura Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Thousand Oaks, Torrance, and Westlake Village.[6]	Eight years from effective date of TMDL.

Minimum Frequency of Assessment and Collection Program[7] - Trash from Nonpoint Sources

Task No.	Task	Responsible Jurisdiction	Date
1	Submit a TMRP including an MFAC/BMP Program.	National Park Service, California Department of Parks and Recreation, County of Los Angeles, County of Ventura, State Lands Commission for open space and parks, and California Department of Parks and Recreation, Los Angeles County Department of Beaches and Harbors, Cities of Hermosa Beach, Los Angeles, Santa Monica and Redondo Beach for beaches and harbors.	Six months from TMDL effective date. If a plan is not approved by the Executive Officer within 9 months, the Executive Officer will establish an appropriate monitoring plan.
2	Implement the TMRP and the MFAC/BMP Program.	National Park Service, California Department of Parks and Recreation, County of Los Angeles, County of Ventura, State Lands Commission for open space and parks, and California Department of Parks and Recreation, Los Angeles County Department of Beaches and Harbors, Cities of Hermosa Beach, Los Angeles, Santa Monica and Redondo Beach for beaches and harbors.	6 months from receipt of letter of approval from Regional Board Executive Officer, or the date a plan is established by the Executive Officer.
3	Achieve LA immediately after each collection and assessment event.	National Park Service, California Department of Parks and Recreation, County of Los Angeles, County of Ventura, State Lands Commission for open space and parks, and California Department of Parks and Recreation, Los Angeles County Department of Beaches and Harbors, Cities of Hermosa Beach, Los Angeles, Santa Monica and Redondo Beach for beaches and harbors.	6 months from receipt of letter of approval from Regional Board Executive Officer, or the date a plan is established by the Executive Officer.
4	Submit annual TMRP reports including proposal for revising MFAC/BMP for Executive	National Park Service, California Department of Parks and Recreation, County of Los Angeles, County of Ventura, State	Twenty (20) months from receipt of letter of approval for the

[7] Based on annual reports, the Executive Officer may adjust the minimum frequency of assessment and collection as necessary to ensure compliance between the required trash assessment and collection events.

Task No.	Task	Responsible Jurisdiction	Date
	Officer approval.	Lands Commission for open space and parks, and California Department of Parks and Recreation, Los Angeles County Department of Beaches and Harbors, Cities of Hermosa Beach, Los Angeles, Santa Monica and Redondo Beach for beaches and harbors.	Trash Monitoring and Reporting Plan from Regional Board Executive Officer, and annually thereafter.
5	Demonstrate full compliance by achieving LA between required trash collection and assessment events.	National Park Service, California Department of Parks and Recreation, County of Los Angeles, County of Ventura, State Lands Commission for open space and parks, and California Department of Parks and Recreation, Los Angeles County Department of Beaches and Harbors, Cities of Hermosa Beach, Los Angeles, Santa Monica and Redondo Beach for beaches and harbors.	Five years from effective date of TMDL.
6	Reconsider the TMDL based on evaluation of effectiveness of MFAC/BMP program, if warranted, and consider extending final compliance deadline for municipalities if local ordinances banning the use of the most commonly found types of trash are adopted and in effect within five (5) years from adoption of this TMDL.	Regional Board.	Five years from effective date of TMDL.

(4) Reporting Compliance based on an MFAC/BMP Approach:

The MFAC/BMP Program includes a Trash Monitoring and Reporting Plan, and a requirement that the responsible Permittees will self-report any non-compliance with its provisions. The results and report of the Trash Monitoring and Reporting Plan must be submitted to Regional Water Board with the Permittee's Annual Report.

ii. Violation of the reporting requirements of this Part shall be punishable pursuant to, inter alia, California Water Code section 13385, subdivisions (a)(3) and (h)(1), and/or section 13385.1.

Appendix 7-C: Dominguez Gap Spreading Grounds West Basin Percolation Enhancements Supporting Documents

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Dominguez Gap Spreading Grounds West Basin Percolation Enhancements Project
Water Conservation Benefits

Data from Oct 1996-Oct 2012			
	16 yr total	yearly average	
Conserved from Percolation without project (actual)	7800.20	487.51	AF
Conserved from Percolation with project (theor)	26,938.51	1,683.66	AF
Additional water conserved due to project		**1,196.14**	AF

Data from Oct 2005-Oct 2010 (AVERAGE WATER YEAR)			
	5 yr total	yearly average	
Conserved from Percolation without project (actual)	2815.29	563.06	AF
Conserved from Percolation with project (theor)	8,330.18	1,666.04	AF
Additional water conserved due to project		1,102.98	AF

Data from Oct 2004-Oct 2005 (WET YEAR 04-05)			
		yearly average	
Conserved from Percolation without project (actual)		541.51	AF
Conserved from Percolation with project (theor)		1,665.12	AF
Additional water conserved due to project		1,123.61	AF

Analysis of the Energy Intensity of Water Supplies for West Basin Municipal Water District

March, 2007

Robert C. Wilkinson, Ph.D.

Note to Readers

This report for West Basin Municipal Water District is an update and revision of an analysis and report by Robert Wilkinson, Fawzi Karajeh, and Julie Mottin (Hannah) conducted in April 2005. The earlier report, *Water Sources "Powering" Southern California: Imported Water, Recycled Water, Ground Water, and Desalinated Water*, was undertaken with support from the California Department of Water Resources, and it examined the energy intensity of water supply sources for both West Basin and Central Basin Municipal Water Districts. This analysis focuses exclusively on West Basin, and it includes new data for ocean desalination based on new engineering developments that have occurred over the past year and a half.

Principal Investigator: Robert C. Wilkinson, Ph.D.

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Overview

Southern California relies on imported and local water supplies for both potable and non-potable uses. Imported water travels great distances and over significant elevation gains through both the California State Water Project (SWP) and Colorado River Aqueduct (CRA) before arriving in Southern California, consuming a large amount of energy in the process. Local sources of water often require less energy to provide a sustainable supply of water. Three water source alternatives which are found or produced locally and could reduce the amount of imported water are desalinated ocean water, groundwater, and recycled water. Groundwater and recycled water are significantly less energy intensive than imports, while ocean desalination is getting close to the energy intensity of imports.

Energy requirements vary considerably between these four water sources. All water sources require pumping, treatment, and distribution. Differences in energy requirements arise from the varying processes needed to produce water to meet appropriate standards. This study examines the energy needed to complete each process for the waters supplied by West Basin Municipal Water District (West Basin).

Specific elements of energy inputs examined in this study for each water source are as follows:

- Energy required to **import water** includes three processes: pumping California SWP and CRA supplies to water providers; treating water to applicable standards; and distributing it to customers.
- **Desalination of ocean water** includes three basic processes: 1) pumping water from the ocean or intermediate source (e.g. a powerplant) to the desalination plant; 2) pre-treating and then desalting water including discharge of concentrate; and 3) distributing water from the desalination plant to customers.
- **Groundwater** usage requires energy for three processes: pumping groundwater from local aquifers to treatment facilities; treating water to applicable standards; and distributing water from the treatment plant to customers. Additional injection energy is sometimes needed for groundwater replenishment.
- Energy required to **recycle water** includes three processes: pumping water from secondary treatment plants to tertiary treatment plants; tertiary treatment of the water, and distributing water from the treatment plant to customers.

The energy intensity results of this study are summarized in the table on the following page. They indicate that recycled water is among the least energy-intensive supply options available, followed by groundwater that is naturally recharged and recharged with recycled water. Imported water and ocean desalination are the most energy intensive water supply options in California. East Branch State Water Project water is close in energy intensity to desalination figures based on current technology, and at some points along the system, SWP supplies exceed estimated ocean desalination energy intensity. The following table identifies energy inputs to each of the water supplies including estimated energy requirements for desalination. Details describing the West Basin system operations are included in the water source sections. Note that the Title 22 recycled water energy figure reflects only the *marginal* energy required to treat secondary effluent wastewater which has been processed to meet legal discharge requirements, along with the energy to convey it to user

Energy Intensity of Water Supplies for West Basin Municipal Water District

	af/yr	Percentage of Total Source Type	kWh/af Conveyance Pumping	kWh/af MWD Treatment	kWh/af Recycled Treatment	kWh/af Groundwater Pumping	kWh/af Groundwater Treatment	kWh/af Desalination	kWh/af WBMWD Distribution	Total kWh/af	Total kWh/year
Imported Deliveries											
State Water Project (SWP) [1]	57,559	43%	3,000	44	NA	NA	NA	NA	0	3,044	175,209,596
Colorado River Aqueduct (CRA) [1] (other that replenishment water)	76,300	57%	2,000	44	NA	NA	NA	NA	0	2,044	155,957,200
Groundwater[2]											
natural recharge	19,720	40%	NA	NA	NA	350	0	NA	0	350	6,902,030
replenished with (injected) SWP water [1]	9,367	19%	3,000	44	NA	350	0	NA	0	3,394	31,791,598
replenished with (injected) CRA water [1]	11,831	24%	2,000	44	NA	350	0	NA	0	2,394	28,323,432
replenished with (injected) recycled water	8,381	17%	205	0	790	350	0	NA	220	1,565	13,116,278
Recycled Water											
West Basin Treatment, Title 22	21,506	60%	205	NA	0	NA	NA	NA	285	490	10,537,940
West Basin Treatment, RO	14,337	40%	205	NA	790	NA	NA	NA	285	1,280	18,351,360
Ocean Desalination	20,000	100%	200	NA	NA	NA	NA	3,027	460	3,687	82,588,800

Notes:

NA Not applicable

[1] Imported water based on percentage of CRA and SWP water MWD received, averaged over an 11-year period. Note that the figures for imports do not include an accounting for system losses due to evaporation and other factors. These losses clearly exist, and an estimate of 5% or more may be reasonable. The figures for imports above should therefore be understood to be conservative (that is, the actual energy intensity is in fact higher for imported supplies than indicated by the figures).

[2] Groundwater values include entire basin, West Basin service area covers approximately 86% of the basin. Groundwater values are specific to aquifer characteristics, including depth, within the basin.

Energy Intensity of Water

Water treatment and delivery systems in California, including extraction of "raw water" supplies from natural sources, conveyance, treatment and distribution, end-use, and wastewater collection and treatment, account for one of the largest energy uses in the state.[1] The California Energy Commission estimated in its 2005 Integrated Energy Policy Report that approximately 19% of California's electricity is used for water related purposes including delivery, end-uses, and wastewater treatment.[2] The total energy embodied in a unit of water (that is, the amount of energy required to transport, treat, and process a given amount of water) varies with location, source, and use within the state. In many areas, the energy intensity may increase in the future due to limits on water resource extraction, and regulatory requirements for water quality, and other factors.[3] Technology improvements may offset this trend to some extent.

> ***Energy intensity*** is the total amount of energy, calculated on a whole-system basis, required for the use of a given amount of water in a specific location.

The Water-Energy Nexus

Water and energy systems are interconnected in several important ways in California. Water systems both provide energy – through hydropower – and consume large amounts of energy, mainly through pumping. Critical elements of California's water infrastructure are highly energy-intensive. Moving large quantities of water long distances and over significant elevation gains, treating and distributing it within the state's communities and rural areas, using it for various purposes, and treating the resulting wastewater, accounts for one of the largest uses of electrical energy in the state.[4]

Improving the efficiency with which water is used provides an important opportunity to increase related energy efficiency. ("*Efficiency*" as used here describes the useful work or service provided by a given amount of water.) Significant potential economic as well as environmental benefits can be cost-effectively achieved in the energy sector through efficiency improvements in the state's water systems and through shifting to less energy intensive local sources. The California Public Utilities Commission is currently planning to include water efficiency improvements as a means of achieving energy efficiency benefits for the state.[5]

Overview of Energy Inputs to Water Systems

There are four principle energy elements in water systems:

1. primary water extraction and supply delivery (imported and local)
2. treatment and distribution within service areas
3. on-site water pumping, treatment, and thermal inputs (heating and cooling)

4. wastewater collection, treatment, and discharge

Pumping water in each of these four stages is energy-intensive. Other important components of embedded energy in water include groundwater pumping, treatment and pressurization of water supply systems, treatment and thermal energy (heating and cooling) applications at the point of end-use, and wastewater pumping and treatment.[6]

1. Primary water extraction and supply delivery
Moving water from near sea-level in the Sacramento-San Joaquin Delta to the San Joaquin-Tulare Lake Basin, the Central Coast, and Southern California, and from the Colorado River to metropolitan Southern California, is highly energy intensive. Approximately 3,236 kWh is required to pump one acre-foot of SWP water to the end of the East Branch in Southern California, and 2,580 kWh for the West Branch. About 2,000 kWh is required to pump one acre foot of water through the CRA to southern California.[7] Groundwater pumping also requires significant amounts of energy depending on the depth of the source. (Data on groundwater is incomplete and difficult to obtain because California does not systematically manage groundwater resources.)

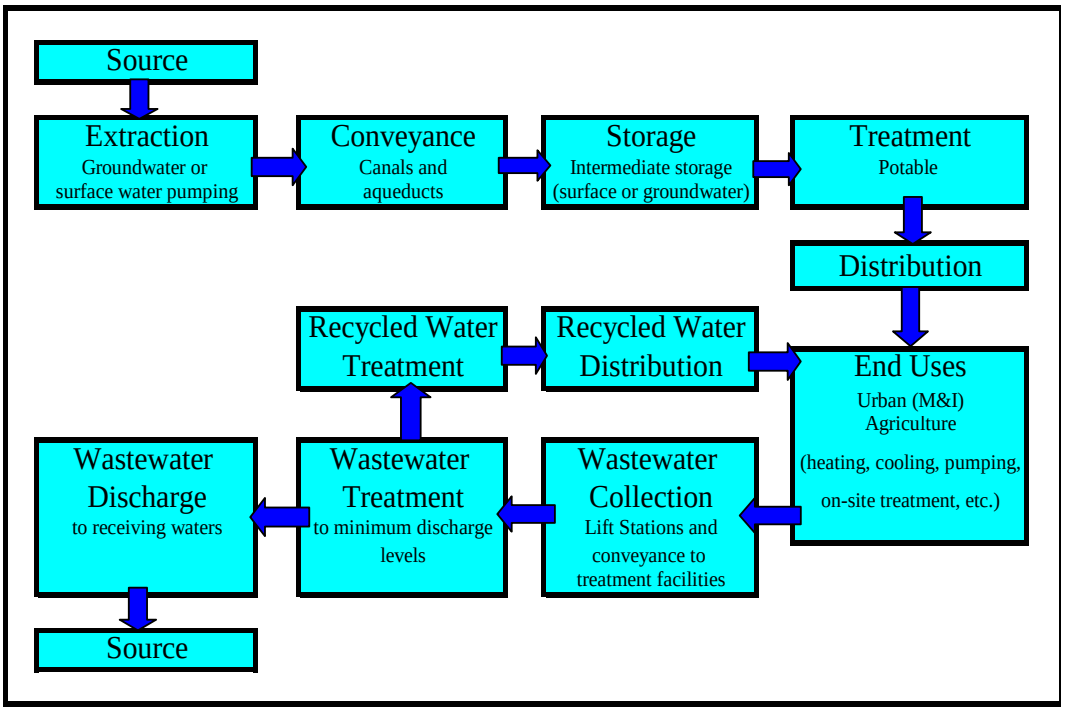
2. Treatment and distribution within service areas
Within local service areas, water is treated, pumped, and pressurized for distribution. Local conditions and sources determine both the treatment requirements and the energy required for pumping and pressurization.

3. On-site water pumping, treatment, and thermal inputs
Individual water users use energy to further treat water supplies (e.g. softeners, filters, etc.), circulate and pressurize water supplies (e.g. building circulation pumps), and heat and cool water for various purposes.

4. Wastewater collection, treatment, and discharge
Finally, wastewater is collected and treated by a wastewater authority (unless a septic system or other alternative is being used). Wastewater is often pumped to treatment facilities where gravity flow is not possible, and standard treatment processes require energy for pumping, aeration, and other processes. (In cases where water is reclaimed and re-used, the calculation of total energy intensity is adjusted to account for wastewater as a *source* of water supply. The energy intensity generally includes the additional energy for treatment processes beyond the level required for wastewater discharge, plus distribution.)

The simplified flow chart below illustrates the steps in the water system process. A spreadsheet computer model is available to allow cumulative calculations of the energy inputs embedded at each stage of the process. This methodology is consistent with that applied by the California Energy Commission in its analysis of the energy intensity of water.

Simplified Flow Diagram of Energy Inputs to Water Systems



Source: Robert Wilkinson, UCSB[8]

Calculating Energy Intensity

Total energy intensity, or the amount of energy required to facilitate the use of a given amount of water in a specific location, may be calculated by accounting for the summing the energy requirements for the following factors:

- imported supplies
- local supplies
- regional distribution
- treatment
- local distribution
- on-site thermal (heating or cooling)
- on-site pumping
- wastewater collection
- wastewater treatment

Water pumping, and specifically the long-distance transport of water in conveyance systems, is a major element of California's total demand for electricity as noted above. Water use (based on embedded energy) is the next largest consumer of electricity in a typical Southern California home after refrigerators and air conditioners. Electricity required to support water service in the typical home in Southern California is estimated at between 14% to 19% of total residential energy demand.[9] If air conditioning is not a factor the figure is even higher. Nearly three quarters of this energy demand is for pumping imported water.

Interbasin Transfers

Some of California's water systems are uniquely energy-intensive, relative to national averages, due to the pumping requirements of major conveyance systems which move large volumes of water long distances and over thousands of feet in elevation lift. Some of the interbasin transfer systems (systems that move water from one watershed to another) are net energy producers, such as the San Francisco and Los Angeles aqueducts. Others, such as the SWP and the CRA require large amounts of electrical energy to convey water. On *average*, approximately 3,000 kWh is necessary to pump one AF of SWP water to southern California,[10] and 2,000 kWh is required to pump one AF of water through the CRA to southern California.[11]

Total energy savings for reducing the full embedded energy of *marginal* (e.g. imported) supplies of water used indoors in Southern California is estimated at about 3,500 kWh/af.[12] Conveyance over long distances and over mountain ranges accounts for this high marginal energy intensity. In addition to avoiding the energy and other costs of pumping additional water supplies, there are environmental benefits through reduced extractions from stressed ecosystems such as the delta.

Imported Water:
The State Water Project and the Colorado River Aqueduct

Water diversion, conveyance, and storage systems developed in California in the 20th century are remarkable engineering accomplishments. These water works move millions of AF of water around the state annually. The state's 1,200-plus reservoirs have a total storage capacity of more than 42.7 million acre feet (maf).[13] West Basin receives imported water from Northern California through the State Water Project and Colorado River water via the Colorado River Aqueduct. The Metropolitan Water District of Southern California delivers both of these imported water supplies to the West Basin.

California's Major Interbasin Water Projects

The State Water Project

The State Water Project (SWP) is a state-owned system. It was built and is managed by the California Department of Water Resources (DWR). The SWP provides supplemental water for agricultural and urban uses.[14] SWP facilities include 28 dams and reservoirs, 22 pumping and generating plants, and nearly 660 miles of aqueducts.[15] Lake Oroville on the Feather River, the project's largest storage facility, has a total capacity of about 3.5 maf.[16] Oroville Dam is the tallest and one of the largest earth-fill dams in the United States.[17]

Water is pumped out of the delta for the SWP at two locations. In the northern Delta, Barker Slough Pumping Plant diverts water for delivery to Napa and Solano counties through the North Bay

Aqueduct.[18] Further south at the Clifton Court Forebay, water is pumped into Bethany Reservoir by the Banks Pumping Plant. From Bethany Reservoir, the majority of the water is conveyed south in the 444-mile-long Governor Edmund G. Brown California Aqueduct to agricultural users in the San Joaquin Valley and to urban users in Southern California. The South Bay Pumping Plant also lifts water from the Bethany Reservoir into the South Bay Aqueduct. [19]

The State Water Project is the largest consumer of electrical energy in the state, requiring an average of 5,000 GWh per year.[20] The energy required to operate the SWP is provided by a combination of DWR's own hydroelectric and other generation plants and power purchased from other utilities. The project's eight hydroelectric power plants, including three pumping-generating plants, and a coal-fired plant produce enough electricity in a normal year to supply about two-thirds of the project's necessary power.

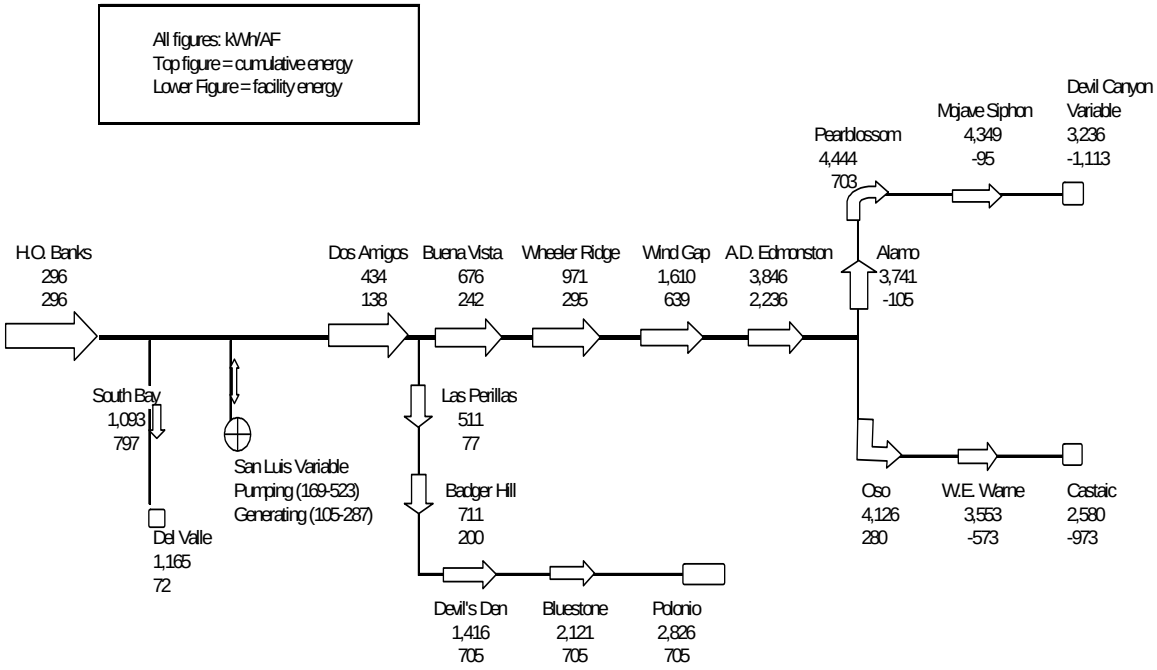
Energy requirements would be considerably higher if the SWP was delivering full contract volumes of water. The project delivered an average of approximately 2.0 mafy, or half its contracted volumes, throughout the 1980s and 1990s.[21] Since 2000 the volumes of imported water have generally increased.

The following map indicates the location of the pumping and power generation facilities on the SWP.

Names and Locations of Primary State Water Delivery Facilities

The following schematic shows each individual pumping unit on the State Water Project, along with data for both the individual and cumulative energy required to deliver an AF of water to that point in the system. Note that the figures include energy recovery in the system, but they do not account for losses due to evaporation and other factors. These losses may be in the range of 5% or more. While more study of this issue is in order, it is important to observe that the energy intensity numbers are conservative (e.g. low) in that they assume that all of the water originally pumped from the delta reaches the ends of the system without loss.

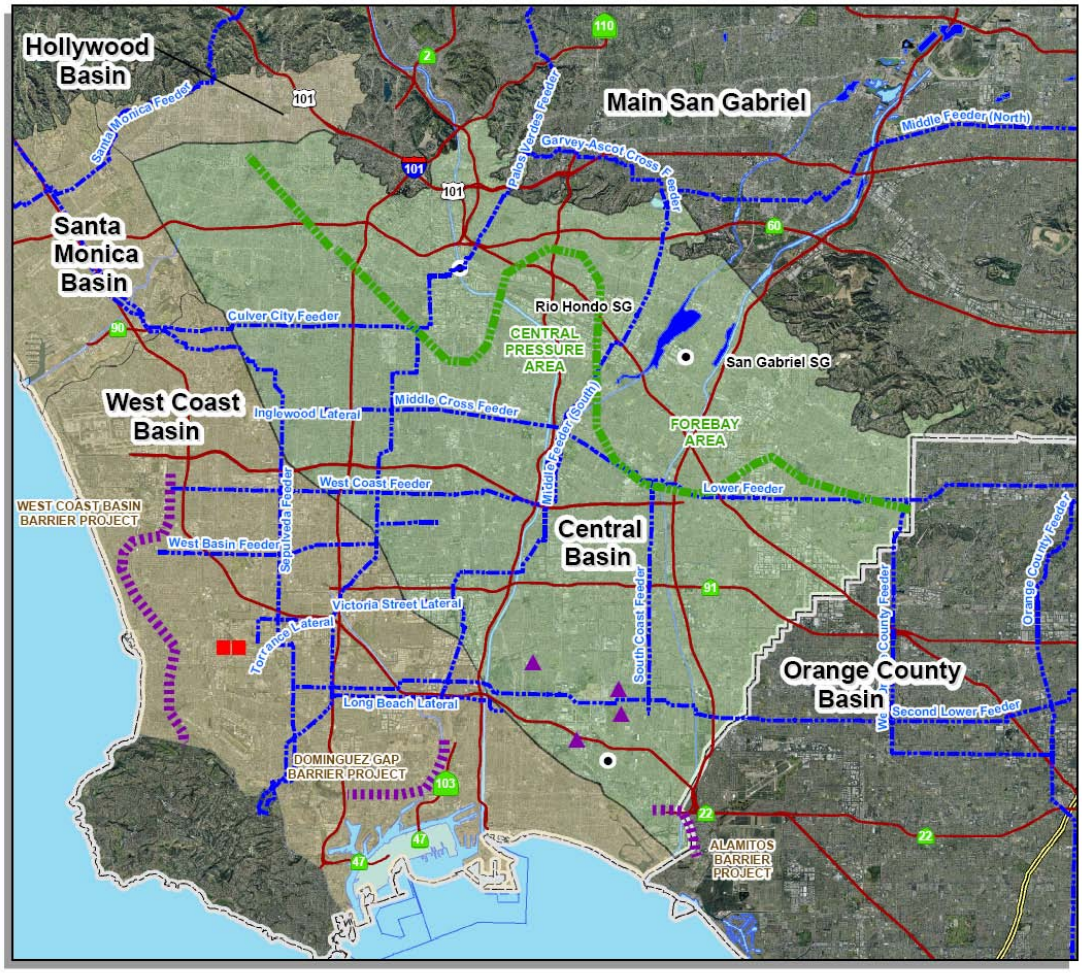
State Water Project
Kilowatt-Hours per Acre Foot Pumped
(Includes Transmission Losses)



Source: Wilkinson, based on data from: California Department of Water Resources, State Water Project Analysis Office, Division of Operations and Maintenance, *Bulletin 132-97*, 4/25/97.

The Central Basin lies within central Los Angeles County, California. It underlies the service areas of Metropolitan member agencies Central Basin Municipal Water District (Central Basin MWD), West Basin Municipal Water District (West Basin MWD), the City of Compton, the City of Los Angeles, and the City of Long Beach. The cities of Artesia, Bellflower, Cerritos, Compton, Downey, Huntington Park, Lakewood, Los Angeles, Long Beach, Montebello, Paramount, Pico Rivera, Norwalk, Santa Fe Springs, Signal Hill, South Gate, Vernon and Whittier overlie the basin. A map of the Central Basin is provided in **Figure 3-1**.

Figure 3-1
Map of Central Basin



BASIN CHARACTERIZATION

The following section provides a physical description of the Central Basin, including its geographic location and hydrogeologic character.

Basin Producing Zones and Storage Capacity

The Central Basin is bounded on the northeast and east by the Elysian, Repetto, Merced and Puente Hills. The southeast boundary of the Central Basin is along Coyote Creek, which is used to separate the Central Basin from the Orange County Basin, although there is no physical barrier between the two basins. The southwest boundary is the Newport, Inglewood fault system. The hydrogeologic parameters of the Central Basin are summarized in **Table 3-1 and Figure 3-2**.

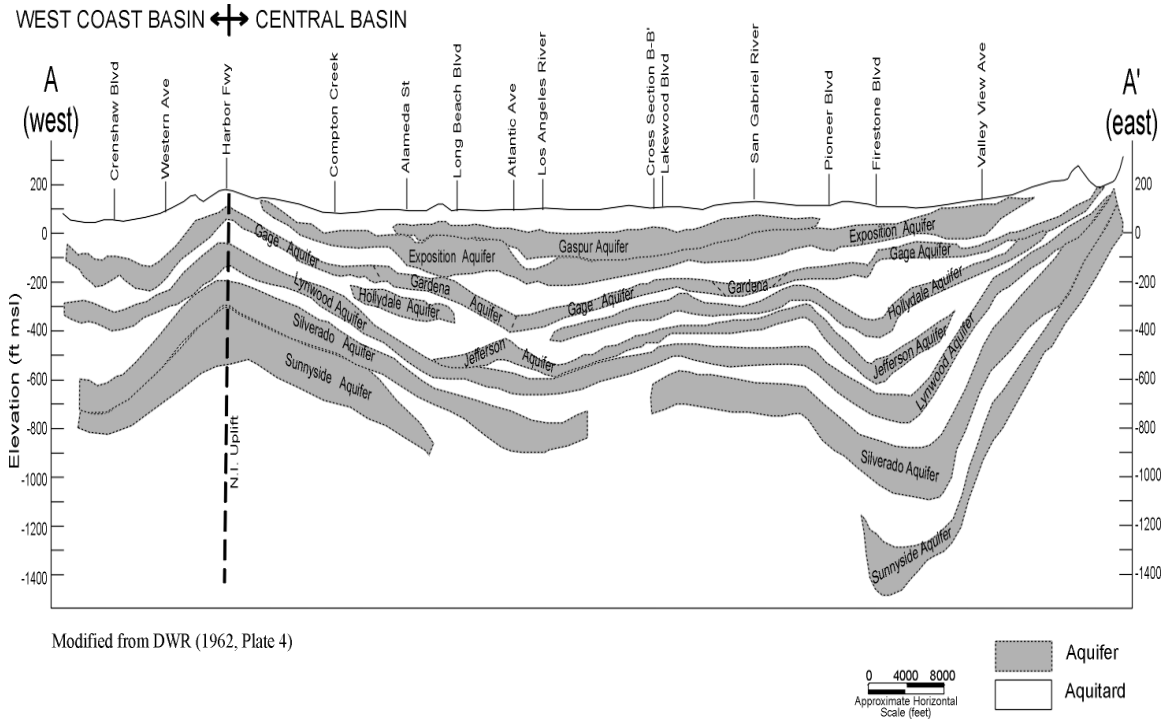
Table 3-1
Summary of Hydrogeologic Parameters of Central Basin

Parameter Structure	**Description**
Aquifer(s)	Forebay areas (unconfined) Pressure area (confined) • Alluvium (Gaspur and Semi-perched aquifers) • Lakewood Formation (Gardena and Gage aquifers) • San Pedro Formation (Lynwood, Silverado, and Sunnyside aquifers)
Depth of groundwater basin	Forebay areas – up to 1,600 feet Pressure area – up to 2,200 feet
Thickness of water-bearing units	Alluvium (up to 180 feet) Lakewood Formation (up to 280 feet) San Pedro Formation (up to 800 feet)
Yield and storage	
Natural safe yield	125,805 AFY
Allowable Pumping Allocation and Managed Safe Yield	217,367 AFY
Total Storage	13.8 million AF
Unused Storage Space	1.1 million AF
Portion of Unused Storage Available for Storage	330,000 AF

WRD, 2006a and WRD, 2006e

The depth of the Central Basin ranges from 1,600 to more than 2,200 feet. The main source of potable groundwater in the Central Basin is from the deeper aquifers of the San Pedro Formation (including from top to bottom, the Lynwood, Silverado and Sunnyside aquifers), which generally correlate with the Main and Lower San Pedro aquifers of Orange County. The shallower aquifers of the Alluvium and the Lakewood Formation (including the Gaspur, Exposition, Gardena-Gage, Hollydale and Jefferson aquifers) locally produce smaller volumes of potable water. In the northern portions of the Central Basin, referred to as the Forebay Area, many of the aquifers are merged and allow for direct recharge into the deeper aquifers. In the area referred to as the Pressure Area, the aquifers are separated by thick aquitards, which create confined aquifer conditions and protection from surface contamination.

Figure 3-2
Generalized Cross Section of Central Basin



Source: WRD, 2006

Total storage in the Central Basin is estimated to be approximately 13.8 million AF. Unused storage space is estimated to be approximately 1.1 million AF. Of the unused storage space, the amount available is approximately 330,000 AF assuming that up to 75 feet below the ground surface is actually available (WRD, 2006e).

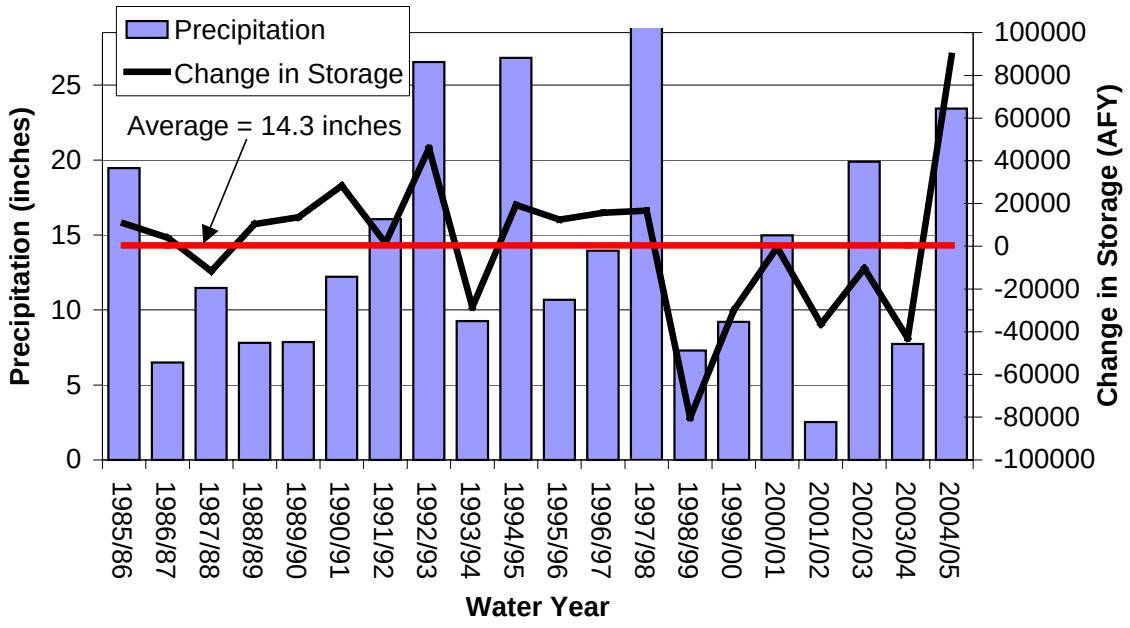
Safe Yield/Long-Term Balance of Recharge and Discharge

According to the California Department of Water Resources (DWR), groundwater enters the Central Basin through surface and subsurface flow and by direct percolation of precipitation, stream flow, and applied water in the forebay areas. Natural replenishment of the groundwater is largely from surface and subsurface inflow through Whittier Narrows. Percolation in the

Los Angeles Forebay from the north is restricted as a result of urbanization at the surface, which prevents downward percolation (DWR, 2004). The natural safe yield of the Central Basin is approximately 125,805 AFY (WRD, 2006e), which represents the amount of water from native waters alone. The managed safe yield of Central Basin is equal to the allowable pumping allocation amount of 217,367 AFY, which is substantially higher than the natural safe yield. This higher yield is possible because of artificial recharge maintained by the Water Replenishment District of Southern California (WRD).

Figure 3-3 shows the historical precipitation as it relates to the change in storage calculated by WRD (2006c). These data show that the average precipitation over the Central Basin is approximately 14.3 inches per year. In general, storage in the Central Basin increases during wet years and decreases during dry years. As discussed below, the amount of recharge in the forebay areas is also a controlling factor in the change in storage that may or may not be related to wet year and dry year cycles. The average change in storage between water year 1985/86 and water year 2004/05 was approximately 1,300 AFY, suggesting that the basin was nearly balanced.

Figure 3-3
Historical Precipitation and Change in Storage for Central Basin



GROUNDWATER MANAGEMENT

The following section describes how the Central Basin is currently managed.

Basin Governance

The Central Basin is an adjudicated basin. It was adjudicated in October 1965 with adjudicated rights set at 267,900 AFY (WRD, 2006f). The amount of the adjudicated water rights that can be

pumped each year (Allowable Pumping Allocation, or APA) is limited to approximately 80 percent of the total adjudicated amount (217,367 AFY).

The Judgment allows annual overpumping of 20 percent of the APA as well as carryover of up to 20 percent of the APA. The DWR serves as Watermaster. The Water Replenishment District of Southern California (WRD), established in 1959, has the statutory authority to replenish the groundwater basin and address water quality issues. The Los Angeles County Department of Public Works (LACDPW) owns and operates the Montebello Forebay Spreading Grounds and the portion of the Alamitos Barrier Project located within Los Angeles County; Orange County Water District operates the Orange County section. WRD procures imported and recycled water to be recharged by LACDPW at these facilities. Table 3-2 provides a list of the management agencies in the Central Basin.

As discussed above, the Judgment APA is 217,367 AFY. However, natural recharge does not support this annual amount of pumping, and the APA exceeds the natural safe yield of the basin and is dependent upon artificial recharge of imported and reclaimed water. Each year WRD makes a determination of the amount of supplemental recharge that is needed based on an estimation of the ensuing year's groundwater production and an estimation of the annual change in storage based on groundwater levels collected throughout the basin.

Table 3-2
Summary of Management Agencies for Central Basin

Agency	Role
California Department of Water Resources	Court appointed Watermaster to administer the Judgment
Water Replenishment District of Southern California	Replenish groundwater, address water quality, administer storage in Central and West Coast Basins
Los Angeles County Department of Public Works	Operation of spreading facilities and Alamitos Barrier facilities
Sanitation Districts of Los Angeles County	Producer of recycled water for Montebello Forebay Spreading Grounds
California Regional Water Quality Control Board – Los Angeles Region (Regional Board)	Issuance of permits for spreading of recycled water in Montebello Forebay and injection of recycled water in seawater intrusion barriers

Note: WRD's authority to administer storage is the subject of disagreement among basin parties.

The WRD adopted Interim Rules for Conjunctive Use Storage and In-Lieu Exchange and Recovery in the Central and West Coast Basins in May 2005. The rules govern storage in the basins outside and above the adjudicated water rights that would utilize up to 450,000 AF of

unused space in the two basins. As of June 2006, the interim rules were the subject of on-going controversy among some groundwater producers in the basins and WRD.

Available storage capacity addressed by WRD Interim Rules is 450,000 AF (330,000 AF in Central Basin and 120,000 AF in West Coast Basin). This estimated capacity is based upon modeling and takes into account requirements that the water level be 75 feet or more below ground surface. However, this analysis did not include potential water quality impacts from contaminated sites in the basin. These could reduce the amount of storage space available if rising water can interact with the contamination. Detailed studies to look at these issues and others are part of the review process prior to approval of a storage project.

Interactions with Adjoining Basins

Central Basin receives subsurface inflow from the San Fernando Basin via downward percolation from the Los Angeles River (Los Angeles Forebay). The Los Angeles Forebay was historically a recharge area from the Los Angeles River. This forebay's recharge capacity has been substantially reduced since the river channel was lined. Recharge is now limited to deep percolation of precipitation, in-lieu when available, and subsurface inflow from the Montebello Forebay to the east, the Hollywood Basin and relatively small amounts from the San Fernando Valley through the Los Angeles Narrows.

The Montebello Forebay, located in the northeastern portion of the Central Basin, connects the Main San Gabriel Basin to the north with the Central Basin via the Whittier Narrows. The Rio Hondo and San Gabriel River spreading grounds in the forebay provide the vast majority of surface recharge to the Central Basin aquifers. Judgment in Case No. 722647 entered in September 1965, provides an adjudication of Upper and Lower Areas on the San Gabriel River. The San Gabriel River Watermaster prepares an annual Watermaster Report providing an accounting of water received, credits, and make-up water.

The Newport Inglewood Uplift separates the Central Basin from the West Coast Basin. Groundwater moves across the uplift, but its movement is slow and restricted because of low permeability sediments and offset of aquifers along the fault.

The boundary with Orange County Basin is not a barrier to flow. Therefore, water can flow between the two basins.

WATER SUPPLY FACILITIES AND OPERATIONS

The following provides a summary of the facilities within the Central Basin. Key storage and extraction facilities include nearly 500 production wells and associated facilities, the Rio Hondo and San Gabriel River spreading grounds and the Alamitos Barrier Project.

Municipal Production Wells

Table 3-3 provides a summary of the production wells in the Central Basin.

There are approximately 497 production wells in the Central Basin (WRD, 2006d). Of the 384 municipal wells identified by WRD (2006d), 367 of these are active and 17 are inactive. Poor water quality is the primary reason for inactive wells. Capacity of wells is not available at this time. WRD estimates that typical groundwater pumping costs for energy are about $65/AF.

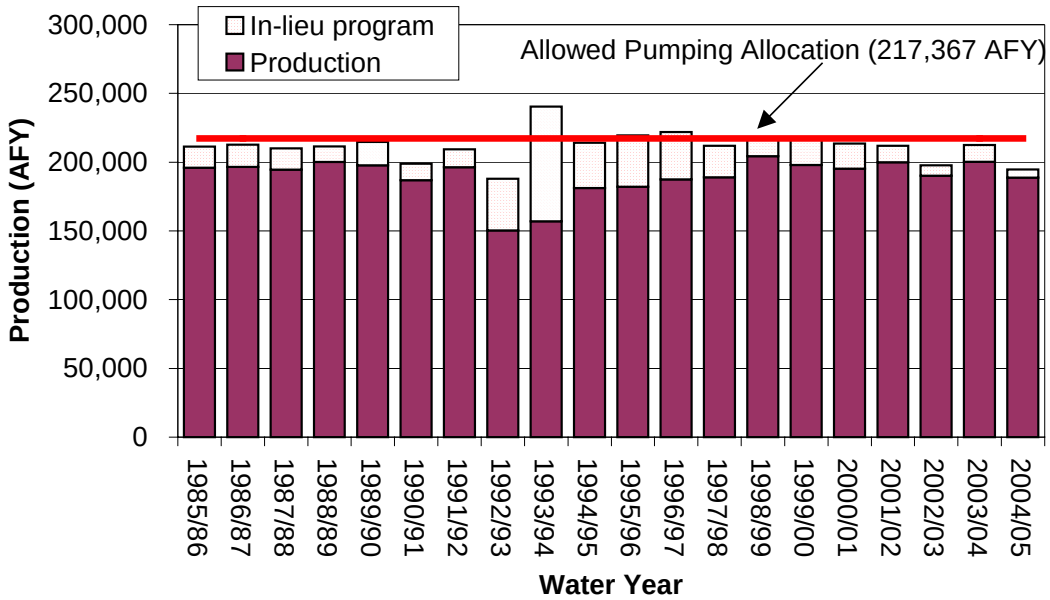
Table 3-3
Summary of Production Wells in the Central Basin

Category	Number of Wells	Estimated Production Capacity (AFY)	Average Production 1985-2004 (AFY)	Well Operation Cost ($/AF)
Municipal	384	Data not available	189,597	$65 Pumping cost
Active	367			
Inactive	17			
Other	113			
Total	**497**			

Source: WRD, 2006d

Production between 1985 and 2004 has ranged from 150,386 AFY to 204,418 AFY with an average of 189,597 AFY. These data are summarized in **Figure 3-4**.

Figure 3-4
Summary of Historical Production in Central Basin



The majority of groundwater production is from the deeper San Pedro Formation including the Lynwood, Silverado, and Sunnyside aquifers (WRD, 2006b). Note that production has been below the APA for the past 20 years.

Central Basin producers participate in an in-lieu groundwater replenishment program whereby they receive imported water purchased from Metropolitan in lieu of pumping groundwater and administered by WRD. In-lieu storage is included in **Figure 3-4**. Between water year 1985/86 and 2004/05, about 22,000 AFY was stored in-lieu. These and other storage programs are discussed in more detail below.

Other Production

According to WRD (2006d), there are approximately 113 other non-municipal wells in the Central Basin. Status information for these wells is not available.

ASR Wells

Two new ASR wells have recently been constructed in the City of Long Beach. In addition, two existing wells have been converted to ASR. The combined extraction capacity of the four wells is estimated to be at least 4,333 AFY. Injection capacity of the ASR wells is estimated to exceed 3,250 AFY.

Spreading Basins

There are currently three primary spreading areas, covering more than 1,000 acres within the Central Basin. The details of these facilities are summarized in **Table 3-4**. The gross capacity of the spreading areas is nearly 398,000 AFY but is limited by mounding and other factors. LACDPW spreads runoff, imported water from Metropolitan and recycled water on behalf of WRD for recharge in the Central Basin.

Total average annual spreading at the Rio Hondo and San Gabriel River Spreading Grounds in the Montebello Forebay for the 20-year period between water years 1985/86 and 2004/05 was approximately 135,000 AFY, with a range of approximately 68,000 AFY to more than 205,000 AFY. Spreading utilizes local runoff, untreated imported water, and recycled water. These data are summarized in **Figure 3-5**.

The Regional Board permit for recharge of recycled water limits recycled water spreading to the lesser of 60,000 AFY or an amount not to exceed 50 percent of the total inflow into the Montebello Forebay for that year. In addition, recycled water shall not exceed 150,000 AF in any three-year period or 35 percent of the total inflow to the forebay.

Seawater Intrusion Barriers

The Alamitos Barrier Project consists of 43 wells with a combined injection capacity of 15 cfs and four extraction wells in the Alamitos Gap in Long Beach (DWR, 2005;WRD, 2006d). The barrier utilizes imported water purchased from the City of Long Beach or recycled water from WRD's Leo J. Vander Lans Advanced Water Treatment Facility that went on-line in 2006.

Figure 3-5
Historical Direct Groundwater Recharge in Central Basin

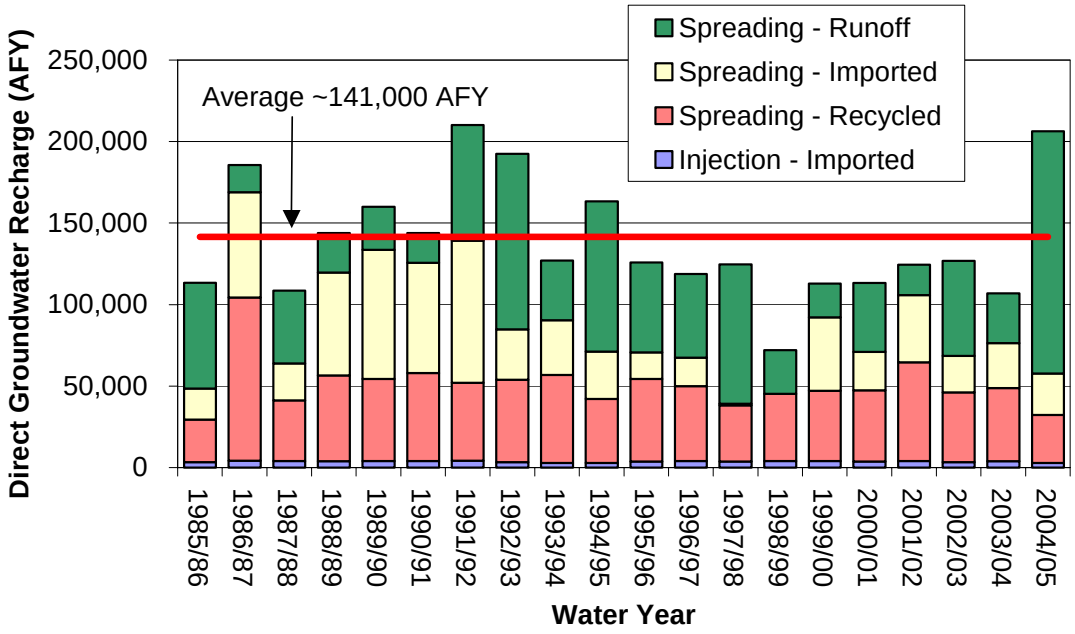


Table 3-4
Summary of Recharge Basins in the Central Basin

Spreading Basin	Area (acres)	Wetted Area (acres)	Recharge Capacity (cfs)	Recharge Capacity (AFY)	Source Water	Owner
Rio Hondo Spreading Grounds	570	430	400	~290,000	Runoff Imported Recycled	LACDPW
San Gabriel River (Basins)	128	96	75	54,000	Runoff Imported Recycled	LACDPW
San Gabriel River (River)	308	308	75	54,000	Runoff Imported Recycled	LACDPW
Total	**1,006**	**834**	**550**	**~398,000**	--	--

Source: LACDPW, 2006

Injection of imported water at the Alamitos Barrier Project in Central Basin has averaged about 3,711 AFY with a range of 2,800 AFY to 4,200 AFY.

Desalters

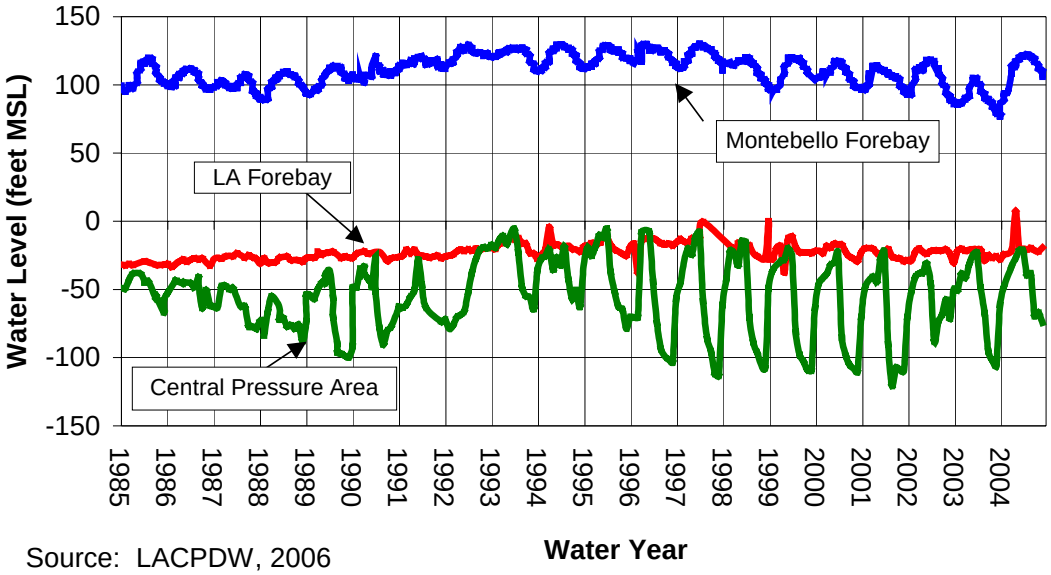
There are no desalters in Central Basin.

GROUNDWATER LEVELS

Historically, groundwater flow in the Central Basin has been from the recharge areas in the northeast toward the Pacific Ocean on the southwest. Pumping patterns have lowered the water level in large portions of the Central Basin. Historical water levels in key wells in various locations in the basin are summarized in **Figure 3-6**. These data, like the precipitation and storage data discussed above, suggest that the water levels have been relatively stable over the past 20 years.

As shown in **Figure 3-7**, in 2005, Central Basin water levels ranged from a high of about 160 feet above mean sea level (MSL) in the northeast portion of the basin upgradient of the spreading grounds to a low of about 90 feet below MSL in the Long Beach area.

Figure 3-6
Historical Water Levels in the Central Basin



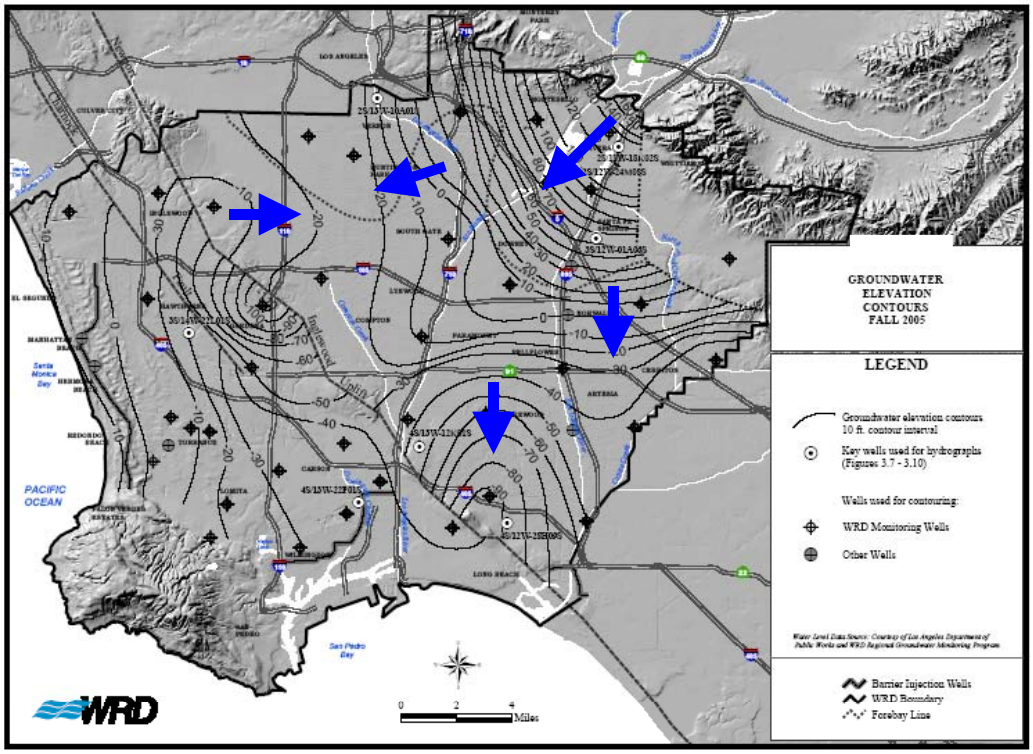
Source: LACPDW, 2006

GROUNDWATER QUALITY

In general, groundwater in the main producing aquifers of the basin is of good quality. Localized areas of marginal to poor water quality exist, primarily on the basin margins and in the shallower

and deeper aquifers impacted by seawater intrusion. The following section provides a brief description of the groundwater quality issues in the Central Basin.

Figure 3-7
Groundwater Elevation Contours – Fall 2005



Groundwater Quality Monitoring

In 1995, WRD and the U.S. Geological Survey (USGS) began a cooperative study to improve the understanding of the geohydrology and geochemistry of Central and West Coast Basins. Out of this effort, came WRD's geographic information system (GIS) and the Regional Groundwater Monitoring Program. Twenty-one depth-specific, nested monitoring wells located throughout the basin, allow water quality and groundwater levels to be evaluated on an aquifer-specific basis. Regional Groundwater Monitoring Reports are published by WRD for each water year. Constituents monitored include: TDS, iron, manganese, nitrate, TCE, PCE, arsenic, chromium including hexavalent chromium, MTBE, and perchlorate.

Groundwater Contaminants

As shown in **Table 3-5**, volatile organic compounds (VOCs), primarily tetrachlororoethylene (PCE) and trichloroethylene (TCE), are present in the Central Basin and have impacted many production wells. However, most of the wells that have the VOCs do not exceed drinking water quality standards (WRD, 2006b). Those with higher levels require treatment prior to use as drinking water. Treatment programs in Central Basin are discussed in more detail below.

Table 3-5
Summary of Constituents of Concern in Central Basin

Constituent	Units	Range	Description
TDS Secondary MCL = 500	mg/L	170 to 2,770 Average: 500	WRD is conducting studies to identify potential sources of high TDS, which may be caused by localized seawater intrusion or connate and oil field brines. Range in production wells 250 mg/L to 750 mg/L. Higher TDS concentrations located in northern portion of basin.
VOCs **(TCE and PCE)** TCE MCL = 5 PCE MCL = 5	µg/L	ND to 32 for TCE ND to 8.3 for PCE	Concentrations in 15 wells exceeded MCL for TCE Concentrations in 68 wells exceed MCL for PCE
Perchlorate Notification level =6	µg/L	Less than 6 µg/L	Detected in 5 monitoring wells and three production wells below notification level
Nitrate (as N) MCL = 10	mg/L	ND to 12	Higher concentrations tend to be limited to the uppermost zones and are likely due to localized infiltration and leaching. One production well in the Los Angeles Forebay area has exceed the 10 mg/L MCL. No wells in Silverado aquifer exceeded the 10 mg/L MCL.
Iron and manganese Secondary MCL for iron = 0.3 Secondary MCL manganese = 0.05	mg/L	ND to 8.4 for iron ND to 1.3 for manganese	Some localized wells exceed secondary standard (0.3 mg/L and 0.05, respectively) for iron and manganese.
Chromium MCL = 50	µg/L	Not available	Detected above MCL in one monitoring well and three production wells in the vicinity of the forebay areas

Source: WRD, 2006b

WRD has taken a proactive approach to protecting the basins in the face of emerging water quality issues. Through its monitoring and sampling program and evaluation of current water quality regulations, WRD has determined that the special interest constituents including arsenic, hexavalent chromium, methyl tertiary butyl ether (MTBE), total organic carbon, color and perchlorate do not pose a substantive threat to the basins (WRD, 2006b).

Blending Needs

Data related to blending needs and practices are not available for the Central Basin.

Groundwater Treatment

As discussed above, VOCs including TCE and PCE have been detected and are currently treated in the Central Basin. To mitigate this problem, the WRD established a Safe Drinking Water Program as part of its Clean Water Program in 1991. This program began as a means to provide basin pumpers with wellhead treatment equipment to remove VOCs from the groundwater, allowing affected wells to meet public drinking water standards. The program promotes the cleanup of groundwater resources at specific well locations and is accomplished through partnerships with well owners. The WRD Safe Drinking Water Program also makes local groundwater reserves available that would otherwise be lost to contamination. There are a total of eleven facilities online with several projects in various stages of completion (WRD, 2007).

About 9,200 AF was treated in fiscal year 2004/05 for VOCs, iron and manganese. This represents about five percent of the total water produced in Central Basin during 2004/05. About 330 AF of the water treated in Central Basin in 2004/05 was treated for iron and manganese under Metropolitan's LRP Groundwater Recovery Projects Program (Metropolitan, 2006).

EXISTING STORAGE PROGRAMS

WRD operates an in-lieu replenishment program in the Central Basin. An average of about 21,000 AFY of in-lieu storage was generated through this program between water years 1985/86 and 2004/05. In addition, as discussed below, a few member agencies participate in Metropolitan's conjunctive use storage program. These in-lieu data are summarized in **Figure 3-8**.

Metropolitan has recently implemented three conjunctive programs under the Proposition 13 program in the Central Basin. These include programs in the cities of Long Beach, Lakewood, and Compton. Each of these programs is described in **Table 3-6**. Total storage from these programs is 18,895 AF. About 15,394 AF, or about 80 percent of the programs, is currently in storage under these combined programs.

Figure 3-8
Historical In-lieu Storage for Central Basin

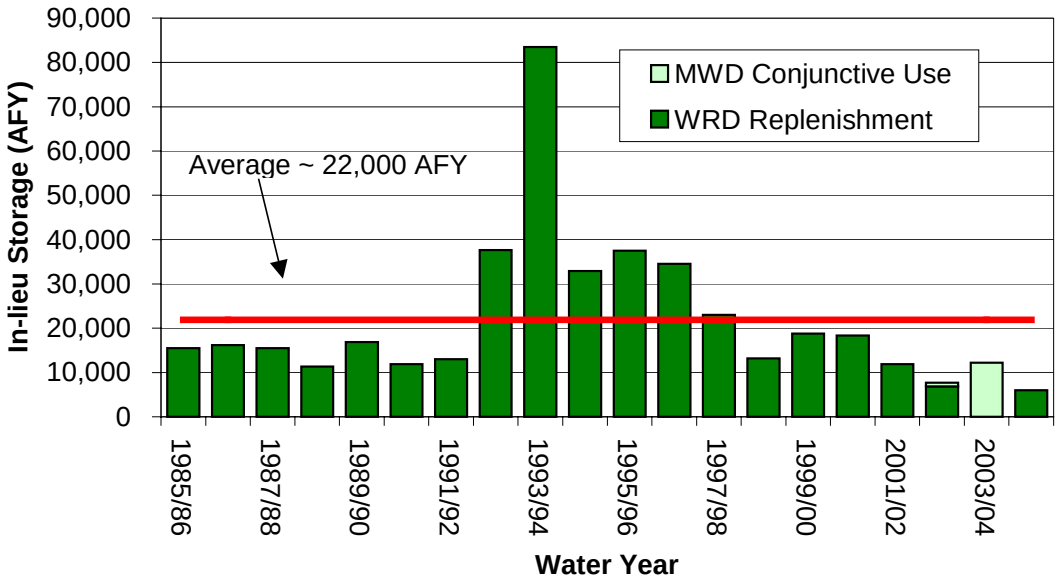


Table 3-6
Conjunctive Use Programs in the Central Basin

Program	Member Agencies	Year Began	Total Storage (AF)	Amount in storage [1] (AF)
Long Beach Conjunctive Use Program (Phase 1)	City of Long Beach	2002	13,000	13,000
Long Beach Conjunctive Use Program (Phase 2)	City of Long Beach	2005	3,600	1,800
Compton Conjunctive Use Program	City of Compton	2005	2,295	1,144
Total	--	--	**18,895**	**15,944**

Notes: 1 Amount in storage at end of fiscal year 2005/06

BASIN MANAGEMENT CONSIDERATIONS

Considerations in the Central Basin include:

- Extraction is limited by the Judgment and the APA. The 20 percent allowed over pumping and carryover is administered by the Watermaster and subject to the provisions of the Central Basin Judgment.

- Disagreements related to the Interim Rules for Conjunctive Use Storage and In-Lieu Exchange and Recovery in the Central and West Coast Basins may limit the ability to store and extract water in the Central Basin. At this time, the approval of storage projects is administered by WRD using the framework defined in the Interim Rules for Conjunctive Use Storage and In-Lieu Exchange and Recovery in the Central and West Coast Basins.

- Spreading of recycled water is regulated by the Regional Board and limits the amount of recycled water that can be spread. The Regional Board permit for recharge of recycled water limits recycled water spreading to the lesser of 60,000 AFY or an amount not to exceed 50 percent of the total inflow into the Montebello Forebay for that year. In addition, recycled water shall not exceed 150,000 AF in any three-year period or 35 percent of the total inflow to the forebay.

- Potential for liquefaction and water quality concerns could limit the ability to store water.

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Dominguez Gap Spreading Grounds West Basin Percolation Enhancements Project
Water Conservation Benefits

Data from Oct 1996-Oct 2012			
	16 yr total	yearly average	
Conserved from Percolation without project (actual)	7800.20	487.51	AF
Conserved from Percolation with project (theor)	26,938.51	1,683.66	AF
Additional water conserved due to project		**1,196.14**	AF

Data from Oct 2005-Oct 2010 (AVERAGE WATER YEAR)			
	5 yr total	yearly average	
Conserved from Percolation without project (actual)	2815.29	563.06	AF
Conserved from Percolation with project (theor)	8,330.18	1,666.04	AF
Additional water conserved due to project		1,102.98	AF

Data from Oct 2004-Oct 2005 (WET YEAR 04-05)			
		yearly average	
Conserved from Percolation without project (actual)		541.51	AF
Conserved from Percolation with project (theor)		1,665.12	AF
Additional water conserved due to project		1,123.61	AF

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2008 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SECTIONS

WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	INTEGRATED REPORT CATEGORY	POLLUTANT *Revelant Notes*	TMDL REQUIREMENT STATUS*	EXPECTED TMDL COMPLETION DATE	DATE USEPA APPROVED TMDL
Los Angeles Harbor - Cabrillo Marina	40512000	77 Acres	5	Benzo(a)pyrene (3,4-Benzopyrene -7-d)	A	01/01/2021	
				DDT (Dichlorodiphenyltrichloroethane)	A	01/01/2019	
				PCBs (Polychlorinated biphenyls)	A	01/01/2019	
Los Angeles Harbor - Consolidated Slip	40512000	36 Acres	5	2-Methylnaphthalene	A	01/01/2008	
				Benthic Community Effects	A	01/01/2019	
				Benzo(a)pyrene (3,4-Benzopyrene -7-d)	A	01/01/2008	
				Benzo[a]anthracene	A	01/01/2008	
				This listing was made by USEPA for 2006.			
				Cadmium (sediment)	A	01/01/2019	
				Historical use of pesticides and lubricants, stormwater runoff, aerial deposition, and historical discharges for metals.			
				Chlordane (tissue & sediment)	A	01/01/2019	
				Chromium (sediment)	A	01/01/2019	
				Chrysene (C1-C4)	A	01/01/2008	
				Copper (sediment)	A	01/01/2019	
				DDT (tissue & sediment)	A	01/01/2019	
				Fish Consumption Advisory for DDT.			
				Dieldrin	A	01/01/2008	
				Lead (sediment)	A	01/01/2019	
				Mercury (sediment)	A	01/01/2019	

2008 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SECTIONS

WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	INTEGRATED REPORT CATEGORY	POLLUTANT *Revelant Notes*	TMDL REQUIREMENT STATUS*	EXPECTED TMDL COMPLETION DATE	DATE USEPA APPROVED TMDL
				Historical use of pesticides and lubricants, stormwater runoff, aerial deposition, and historical discharges for metals.			
				PCBs (Polychlorinated biphenyls) (tissue & sediment)	A	01/01/2019	
				Fish Consumption Advisory for PCBs.			
				Phenanthrene	A	01/01/2008	
				Pyrene	A	01/01/2008	
				Sediment Toxicity	A	01/01/2019	
				Toxaphene (tissue)	A	01/01/2019	
				Zinc (sediment)	A	01/01/2019	
				Historical use of pesticides and lubricants, stormwater runoff, aerial deposition, and historical discharges for metals.			
Los Angeles Harbor - Fish Harbor	40518000	91 Acres	5	Benzo(a)pyrene (3,4-Benzopyrene -7-d)	A	01/01/2008	
				Benzo[a]anthracene	A	01/01/2019	
				Chlordane	A	01/01/2019	
				Chrysene (C1-C4)	A	01/01/2019	
				Copper	A	01/01/2019	
				DDT (Dichlorodiphenyltrichloroethane)	A	01/01/2019	
				Dibenz[a,h]anthracene	A	01/01/2019	
				Lead	A	01/01/2019	
				Mercury	A	01/01/2019	
				PAHs (Polycyclic Aromatic Hydrocarbons)	A	01/01/2019	

2008 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SECTIONS

WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	INTEGRATED REPORT CATEGORY	POLLUTANT *Revelant Notes*	TMDL REQUIREMENT STATUS*	EXPECTED TMDL COMPLETION DATE	DATE USEPA APPROVED TMDL
				PCBs (Polychlorinated biphenyls)	A	01/01/2019	
				Phenanthrene	A	01/01/2019	
				Pyrene	A	01/01/2019	
				Sediment Toxicity	A	01/01/2019	
				Zinc	A	01/01/2019	
Los Angeles Harbor - Inner Cabrillo Beach Area	40512000	82 Acres	5	DDT (Dichlorodiphenyltrichloroethane)	A	01/01/2019	
				Fish Consumption Advisory for DDT.			
				Indicator Bacteria	B		01/01/2004
				PCBs (Polychlorinated biphenyls)	A	01/01/2019	
				Fish Consumption Advisory for PCBs.			
Los Angeles River Estuary (Queensway Bay)	40512000	207 Acres	5	Chlordane (sediment)	A	01/01/2019	
				Historical use of pesticides and lubricants.			
				DDT (sediment)	A	01/01/2019	
				Historical use of pesticides and lubricants.			
				PCBs (Polychlorinated biphenyls) (sediment)	A	01/01/2019	
				Historical use of pesticides and lubricants.			
				Sediment Toxicity	A	01/01/2019	
				Trash	B		07/24/2008

2008 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SECTIONS

WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	INTEGRATED REPORT CATEGORY	POLLUTANT *Revelant Notes*	TMDL REQUIREMENT STATUS*	EXPECTED TMDL COMPLETION DATE	DATE USEPA APPROVED TMDL
Los Angeles River Reach 1 (Estuary to Carson Street)	40512000	3.37 Miles	5	Ammonia	B		03/18/2004
				Cadmium	B		12/22/2005
				Coliform Bacteria	A	01/01/2009	
				Copper, Dissolved	B		12/22/2005
				Cyanide	A	01/01/2019	
				Diazinon	A	01/01/2019	
				Lead	B		12/22/2005
				Nutrients (Algae)	B		03/18/2004
				Trash	B		07/24/2008
				Zinc, Dissolved	B		12/22/2005
				pH	B		01/01/2003
Los Angeles River Reach 2 (Carson to Figueroa Street)	40515010	18.8 Miles	5	Ammonia	B		03/18/2004
				Coliform Bacteria	A	01/01/2009	
				Copper	B		12/22/2005
				Lead	B		12/22/2005
				Nutrients (Algae)	B		03/18/2004
				Oil	A	01/01/2019	
				Trash	B		07/24/2008
Los Angeles River Reach 3 (Figueroa St. to Riverside Dr.)	40521000	7.94 Miles	4A	Ammonia	B		03/18/2004
				Copper	B		12/22/2005
				Lead	B		12/22/2005

2008 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SECTIONS

WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	INTEGRATED REPORT CATEGORY	POLLUTANT *Revelant Notes*	TMDL REQUIREMENT STATUS*	EXPECTED TMDL COMPLETION DATE	DATE USEPA APPROVED TMDL
				Nutrients (Algae)	B		03/18/2004
				Trash	B		07/24/2008
Los Angeles River Reach 4 (Sepulveda Dr. to Sepulveda Dam)	40521000	11.06 Miles	5	Ammonia	B		03/18/2004
				Coliform Bacteria	A	01/01/2009	
				Copper	B		12/22/2005
				Lead	B		12/22/2005
				Nutrients (Algae)	B		03/18/2004
				Trash	B		07/24/2008
Los Angeles River Reach 5 (within Sepulveda Basin)	40521000	1.9 Miles	5	Ammonia	B		03/18/2004
				Copper	B		12/22/2005
				Lead	B		12/22/2005
				Nutrients (Algae)	B		03/18/2004
				Oil	A	01/01/2019	
				Trash	B		07/24/2008
Los Angeles River Reach 6 (Above Sepulveda Flood Control Basin)	40521000	6.99 Miles	5	Coliform Bacteria	A	01/01/2009	
				Selenium	B		12/22/2005
Los Angeles/Long Beach Inner Harbor	40518000	3003 Acres	5	Beach Closures	A	01/01/2004	
				Benthic Community Effects	A	01/01/2019	

2008 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SECTIONS

WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	INTEGRATED REPORT CATEGORY	POLLUTANT *Revelant Notes*	TMDL REQUIREMENT STATUS*	EXPECTED TMDL COMPLETION DATE	DATE USEPA APPROVED TMDL
				Benzo(a)pyrene (3,4-Benzopyrene -7-d)	A	01/01/2021	
				Chrysene (C1-C4)	A	01/01/2021	
				Copper	A	01/01/2008	
				DDT (Dichlorodiphenyltrichloroethane)	A	01/01/2019	
				PCBs (Polychlorinated biphenyls)	A	01/01/2019	
				Sediment Toxicity	A	01/01/2009	
				Zinc	A	01/01/2008	
Los Angeles/Long Beach Outer Harbor (inside breakwater)	40512000	4042 Acres	5	DDT (Dichlorodiphenyltrichloroethane)	A	01/01/2019	
				PCBs (Polychlorinated biphenyls)	A	01/01/2019	
				Sediment Toxicity	A	01/01/2008	
Los Cerritos Channel	40515010	30.5 Acres	5	Ammonia	A	01/01/2019	
				Bis(2ethylhexyl)phthalate (DEHP)	A	01/01/2019	
				Chlordane (sediment)	A	01/01/2019	
				Coliform Bacteria	A	01/01/2019	
				Copper	A	01/01/2019	
				Lead	A	01/01/2019	
				Trash	A		
				Zinc	A	01/01/2019	
Lunada Bay Beach	40511000	0.63 Miles	4A	Indicator Bacteria	B		01/01/2002

2008 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SECTIONS

WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	INTEGRATED REPORT CATEGORY	POLLUTANT *Revelant Notes*	TMDL REQUIREMENT STATUS*	EXPECTED TMDL COMPLETION DATE	DATE USEPA APPROVED TMDL
				Fish Consumption Advisory for PCBs.			
Will Rogers Beach	40513000	3.01 Miles	4A	Indicator Bacteria	B		01/01/2002
Wilmington Drain	40342000	0.56 Miles	5	Coliform Bacteria	A	01/01/2007	
				Copper	A	01/01/2019	
				Lead	A	01/01/2019	
Zuma Beach (Westward Beach)	40436000	1.59 Miles	5	DDT (Dichlorodiphenyltrichloroethane)	A	01/01/2019	
				Fish Consumption Advisory for DDT.			
				Indicator Bacteria	B		01/01/2002
				PCBs (Polychlorinated biphenyls)	A	01/01/2019	
				Fish Consumption Advisory for PCBs.			

Staff Report

Los Angeles Region Integrated Report

Clean Water Act Section 305(b) Report and Section 303(d) List of Impaired Waters

2008 Update

Prepared by
California Regional Water Quality Control Board, Los Angeles Region

Revised July 2009

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1 Executive Summary

This Integrated Report provides the recommendations of the staff of the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) for changes to the Clean Water Act (CWA) Section 303(d) list of impaired waterbodies and provides a draft Clean Water Act Section 305(b) report (Integrated Report). The Integrated Report includes both the list of impaired waterbodies and identified waters which are known to be meeting beneficial uses within the Los Angeles Region.

The Introduction to this Integrated Report provides the context and purpose and an overview of the approach and describes the public process that will be used for adoption of the changes to the 303(d) list and finalization of the Integrated Report. The remainder of the report describes data sources used, the objectives and criteria against which data were compared, the methodology for comparing the available data to the criteria to assess attainment of water quality standards and determine potential 303(d) listings and the methodology used to categorize waterbody segments according to beneficial use support for the 305(b) report. Results are briefly summarized and discussed following descriptions of the methodology.

Recommendations are shown in detail in the appendices. Appendix A shows the public solicitation letters requesting that the public submit any and all available data to support the assessment of water quality in the Region. Appendices B through E provide lists of waterbodies in Integrated Report categories of beneficial use support. Appendix F presents a list of all impairments by waterbody including those waterbodies in Integrated Report categories 4 and 5 (appendices D and E) which is the list referred to as the 303(d) list. Appendix G presents "fact sheets" for each waterbody-pollutant combination that was analyzed for the proposed 303(d) listing decisions. These fact sheets include at least one "Line of Evidence" describing the data and information used as a basis for each proposed decision. Appendix H presents fact sheets for other miscellaneous changes to the 303(d) list. Appendix I provides citations for all of the references used in developing the Integrated Report.

There are 68 proposed new 303(d) listings in 41 waterbodies and 30 proposed de-listings in 19 waterbodies on the Los Angeles Region 303(d) list.

Additions of new impaired waterbodies to the list ('listings') or deletions of no longer impaired waterbodies from the list ('delistings') were constrained by availability of water quality data. Many waterbodies in the Region are not sampled on a regular basis. In addition, identification of waterbodies which are not impaired by pollutants and meet all beneficial uses has also been driven by availability of data.

Regional Board staff reviewed all data available to determine impairment or the absence of impairment but staff focused on developing listing or delisting decisions and factsheets for the update and did not usually develop do-not-list or do-not-delist decisions and factsheets as these decisions would not alter the final 303(d) list.

The Los Angeles Region Integrated Report and updated 303(d) list included in this staff report is being circulated for public comments. Written comments received before June 17, 2009 will be responded to in writing. The reports and the response to comments will then be brought before the Los Angeles Water Board at a public hearing for potential approval. Public testimony will also be heard at the public hearing. After approval by the Los Angeles Water Board, the Integrated Report, including the updated 303(d) list, will be submitted to the State Water Resources Control Board (State Board) for approval along with the other Region's reports. The full State Integrated Report will then be submitted to the USEPA for approval and will then be final.

2 Introduction

The purpose of this report is to identify those surface waters in the Los Angeles Region which are impaired by pollutants or conditions which prevent them from meeting beneficial uses and to identify those waterbodies which data show are meeting beneficial uses.

An important requirement of the Clean Water Act is to identify those waters which are polluted, not meeting established standards and not supporting the uses expected of those waterbodies. With identification is the recognition of the need for action. Appropriate action after identifying a polluted waterbody is generally the development of a Total Maximum Daily Load (TMDL) but, in some cases, may also include permitting actions or prohibiting discharges to the waterbody, taking cleanup actions, or restoration projects.

2.1 Regulatory Process

The Clean Water Act (CWA) requires each State to assess the status of water quality in the State (Section 305(b)), and provide a list of impaired water bodies (Section 303(d)) to the U.S. Environmental Protection Agency (U.S. EPA) every two years. For water quality limited segments included on the 303(d) list, the state is required to develop a Total Maximum Daily Load (TMDL)or take other action to address the impairment.

The last review and update of the State's 303(d) list occurred in 2006. That review was conducted by the State Water Resources Control Board using the State Board's *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List* (Listing Policy) (SWRCB 2004) developed in 2004. The 2006 update was the first review and update to use that policy.

For the 2008 update, each Regional Water Board is conducting their own reviews of new and previous water quality data and updating the assessment and list of impaired waterbodies according to the Listing Policy.

This staff report presents this Regional Board's assessment of the current status of water quality in the Los Angeles Region for water bodies with readily available data, and identifies

the methods and data used to evaluate the water quality. This report proposes additions, deletions, and changes to the 2006 303(d) list. The water quality assessments also result in the identification of water bodies where water quality standards are met or where not enough information is available to accurately assess water quality.

Certain sections of the Integrated Report require public review and approval by the Regional Board and then approval by the State Board. These sections, or categories, are the lists of water quality limited segments whether being addressed by a TMDL or action other than a TMDL or not yet being addressed (Category lists 4 and 5, the 303(d) list). The other sections of the Integrated Report, which are waters supporting beneficial uses and waters with insufficient data (Categories lists 1, 2, and 3), are provided as information and do not require Board action.

After approval by the Los Angeles Water Board, the Integrated Report will be submitted to the State Water Resources Control Board for approval along with the other Region's reports. The results of the water quality assessments will be compiled with other Regional Board reports into a statewide integrated report referred to as the 303(d)/305(b) Integrated Report by the State Board. The statewide list of all the water quality limited segments will require final approval by the USEPA. The US EPA then compiles these assessments into their biennial "National Water Quality Inventory Report" to Congress.

3 Development of the Integrated Report

3.1 Data solicitation

Federal regulation [(40 CFR § 130.7(b)(5)] states that "Each State shall assemble and evaluate all existing and readily available water quality-related data and information" when developing the 303(d) list. On December 4, 2006, Water Board staff solicited the public to submit any and all water quality data to be considered in preparation of the 2008 303(d) list and 305(b) report. This solicitation established a data submittal deadline of February 28, 2007. On January 30, 2007, staff transmitted a notice clarifying that there were no limits on the type or format of data and information that the public could provide to the Water Boards for their assessment. The notices provided to the public can be found in Appendix A of this report.

The Regional Board received 17 submissions in response to the data solicitation. In addition, staff assembled all other available data. Larger databases considered included:

- National Pollutant Discharge Elimination System (NPDES) permitting data from major NPDES discharges. These data included data collected under the Municipal Separate Storm Sewer System (MS4) NPDES permits.

- Surface Water Ambient Monitoring Program (SWAMP) data. SWAMP is a statewide monitoring effort, administered by the State Water Board, designed to assess the conditions of surface waters throughout the state of California. Monitoring is

conducted in SWAMP through the Department of Fish and Game and Regional Boards monitoring contracts.

- Southern California Bight Regional Monitoring (Bight) data. The Southern California Water Research Project (SCCWRP) coordinates the efforts of many participating organization to conduct the Coastal Ecology component of the Bight regional monitoring effort. These surveys seek to determine the spatial extent of contaminant accumulation in marine sediments and assess the effects of this contamination on living marine resources. Coastal Ecology regional monitoring is conducted every five years. More than 60 organizations have participated as partners in the Coastal Ecology portion of SCCWRP's Bight regional monitoring efforts.

3.2 Listing Policy and Evaluation Criteria

The proposed 2008 303(d) list of impaired water bodies in the Los Angeles Region was developed in accordance with the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (State Board Listing Policy) and the Functional Equivalent Document, both adopted by the State Water Resources Control Board in September 2004. The Listing Policy establishes a standardized approach for developing California's section 303(d) list. It outlines an approach that provides the rules for making listing decisions based upon different types of data and establishes a systematic framework for statistical analysis of water quality data.

The Listing Policy also establishes requirements for data quality, data quantity, and administration of the listing process. Decision rules for listing and delisting are provided for: chemical-specific water quality standards; bacterial water quality standards; health advisories; bioaccumulation of chemicals in aquatic life tissues; nuisances such as trash, odor, and foam; nutrients; water and sediment toxicity; adverse biological response; and degradation of aquatic life populations and communities. The listing policy specifies the frequency of exceedance of applicable water quality objectives that is necessary to make a determination that the water is impaired.

Listing and delisting decisions were made in accordance with the listing policy, using all applicable narrative and numeric water quality criteria contained in the Los Angeles Region Basin Plan and in the California and National Toxic Rules.

3.3 Standards Used in the Analysis

Beneficial Uses:
The beneficial uses for waters in the Los Angeles Region are identified in the Los Angeles Regional Water Quality Control Plan (Basin Plan). For consistency with other Regions in California and other States, six "core" beneficial uses were assessed. The designated beneficial uses in the Basin Plans fit within these six "core" beneficial uses categories, which are:

1. Aquatic Life Support
2. Drinking Water Supply
3. Fish Consumption
4. Secondary Contact
5. Shell fishing, and
6. Swimming.

Water Quality Objectives, Criteria and Guidelines:
The water quality objectives and criteria used in the assessments were from existing and available State Policy and Plans and included the following:

- Water Quality Control Plan, Los Angeles Region (Basin Plan)
- Statewide Water Quality Control Plans (e.g., the California Ocean Plan)
- California Toxics Rule (40 CFR 131.38)
- Maximum Contaminant Levels in California Code of Regulations, Title 22.

Narrative water quality objectives were evaluated using evaluation guidelines as allowed by the Listing Policy. When evaluating narrative water quality objectives, staff identified evaluation guidelines that represented standards attainment or beneficial use protection. Depending on the beneficial use and narrative standard, the following were used in the selection of evaluation guidelines:

1. Sediment Quality Guidelines for Marine, Estuarine, and Freshwater Sediments: When applying narrative water or sediment quality criteria, staff used guidelines developed by the U.S. EPA and other government agencies together with findings published in the scientific peer-reviewed literature to interpret data and evaluate the water quality conditions. Sediment quality guidelines published in the peer-reviewed literature or developed by state or federal agencies were used. Acceptable guidelines included selected values (e.g., effects range-median, probable effects level, probable effects concentration), and other sediment quality guidelines. Only those sediment guidelines that were predictive of sediment toxicity were used (i.e., those guidelines that have been shown in published studies to be predictive of sediment toxicity in 50 percent or more of the samples analyzed).

2. Evaluation Guidelines for Protection from the Consumption of Fish and Shellfish: Evaluation guidelines published by USEPA or OEHHA were used.

3. Evaluation Guidelines for Protection of Aquatic Life from Bioaccumulation of Toxic Substances: Evaluation values for the protection of aquatic life published by the National Academy of Science were used.

The State Listing Policy and the use of the same water quality objectives criteria and guidelines ensure that all Regions develop listing or delisting decisions in a consistent manner. Below are three pollutant categories which require some Los Angeles Region-specific elaboration

3.3.1 Indicator bacteria

For indicator bacteria listing decisions, the Los Angeles Region followed the State Listing Policy but used a Los Angeles Region-specific exceedance day approach as outlined below.

Previous iterations of the Los Angeles Region's 303(d) list included impairments for "total coliform," "enterococcus," "viruses (enteric)," "coliform," "beach closures," "swimming restrictions," "high coliform count," "bacteria indicators," and "fecal coliform." In this update, Regional Board staff have begun to categorize these impairments all as "indicator bacteria."

"Indicator bacteria" impairments can include impairments due to any sewage or fecal matter bacterial indicator including total coliform, fecal coliform, *E. coli*, and *enterococcus*.

In this update, Regional Board staff have calculated the frequency of exceedances of standards for indicator bacteria using a exceedance day approach.

Basin Plan
The Los Angeles Region Basin Plan lists bacteria water quality objectives to protect the water contact recreation and non-contact water recreation beneficial uses in marine and fresh water. The marine water objectives for bacteria are also mirrored in the State Water Resources Control Board's Water Quality Control Plan for Ocean Waters of California (Ocean Plan).

Regional Board Resolution **2002-022,** effective on July 15, 2003, to the Basin Plan included Implementation Provisions for Water Contact Recreation Bacteria Objectives which allow a reference system approach. In part, below

> *...In the context of a TMDL, the Regional Board may implement the single sample objectives in fresh and marine waters by using a 'reference system/antidegradation approach' or 'natural sources exclusion approach' as discussed below. ...*
>
> *Under the reference system/antidegradation implementation procedure, a certain frequency of exceedance of the single sample objectives above shall be permitted on the basis of the observed exceedance frequency in the selected reference system or the targeted water body, whichever is less. The reference system/anti-degradation 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.*

Bacterial TMDLs and exceedance days in the Los Angeles Region
All bacterial TMDLs developed in the Los Angeles Region have used the reference system approach and have calculated the number of exceedance days at the reference system to define the reference condition. These TMDLs include the Santa Monica Bay Beaches Dry Weather Bacteria TMDL (effective 2003), the Santa Monica Bay Beaches Wet Weather

Bacteria TMDL (effective 2003), Marina Del Rey Back Basins Bacteria TMDL (effective 2004), Los Angeles Harbor Inner Cabrillo Beach and Main Ship Channel Bacteria TMDL (effective 2005), the Malibu Creek and Lagoon Bacteria TMDL (effective 2006), the Ballona Creek Bacteria TMDL (effective 2007), and the Harbor Beaches of Ventura County (Channel Islands Harbor Beaches) Bacteria TMDL (effective 2008).

With an exceedance day method, all appropriate bacterial indicators (i.e. marine or fresh water indicators) are evaluated in one analysis to determine if the waterbody is impaired as opposed to evaluating each bacterial indicator separately and then considering those two or three evaluations to determine if the waterbody is impaired.

To calculate the number of exceedance days, the number of days during a defined period during which one or more indicator bacteria exceeds the standard is an exceedance day. For example, at a freshwater, REC-1 site, a day in which *E. coli* exceeds the standard is one exceedance day, a day in which Fecal Coliform exceeds the standard is one exceedance day and a day in which *both E. coli* and Fecal Coliform exceeds the standard is also one exceedance day.

Calculating exceedance days for all applicable indicators may be in some instances a more conservative approach (i.e. more likely to find a waterbody to be impaired) than a straight indicator by indicator approach and therefore is more protective of human health.

The Listing Policy has specific listing factors for bacterial data from coastal beaches. Section 3.3 and of the Listing Policy discuss methodology for listing water bodies. For *listing* coastal beaches, "if water quality monitoring was conducted April 1 through October 31 only, a four percent exceedance percentage shall be used" (SWRCB, 2004). The 4% exceedance percentage applies to the null hypothesis for the binomial distribution formula at the bottom of Table 3.2. Section 4.3 of the Listing Policy discuss methodology for *delisting* water bodies and does not specifically describe the use of more stringent exceedance percentage for coastal beach water quality monitoring conducted April 1 through October 31 only, though one is inferred. A 19% exceedance percentage was used for water quality monitoring conducted April 1 through October 31 only when assessing delisting status. The 19% exceedance percentage applies to the null hypothesis for the binomial distribution formula at the bottom of Table 4.2. Therefore, for coastal beach datasets in which both year-round monitoring was conducted following by subsequent monitoring from April 1 to October 31 (e.g., year-round from 2000 to 2002 and April 1 to October 31 from 2003 to 2005), the datasets were evaluated in two parts due to differing exceedance percentages for assessing listing and delisting status.

Regional Board staff followed the Listing Policy methodology and exceedance percentages and calculated exceedance days by both single sample exceedances and geometric mean exceedances.

a. Single Sample

The Basin Plan lists four single sample limits for marine waters and two for fresh water. If samples tested for indicator bacteria exceed any of the indicator bacteria limits, a "single sample exceedance day" for indicator bacteria was designated.

b. Geometric Means

The Basin Plan lists three geometric mean bacteria limits for marine waters and two for fresh water. Receiving water data was evaluated based on these numeric limits and the exceedance day approach in a similar manner to single samples. As such, a calendar month approach as opposed to a rolling 30 day sample approach was used to assess geometric mean to maintain sample independence. Two or more samples were used per calendar month for calculating geometric means.

3.3.2 Invasive species

In this update, Regional Board staff propose new listings for invasive species.

Several other Region's 303 (d) lists include listings for "exotic species," which were made in recent listing updates. In the Los Angeles Region there is one listing for "exotic vegetation," a listing made prior to 1998.

Table 3-1 Listings for exotic species in the State 2006 303(d)

	Region	Number of listings	listing	notes
1	North Coast	1	exotic species	european green crab
2	San Francisco Bay	12	exotic species	ballast water
5	Central Valley	10	exotic species	source unknown
4	Los Angeles	1	exotic vegetation	Ballona Creek

For this listing update, Regional Board staff are proposing listings for "invasive species" as opposed to exotic species" Staff prefer not listing for "exotics" or "non-native" because not all exotic or non-native species are invasive or cause loss of beneficial uses and may even support beneficial uses. For example, the Department of Fish and Game has regulations to protect certain non-native species (e.g. striped bass) and mosquito fish are "non-native" but are used as a biological control by most mosquito abatement districts. In fact, in this listing update, The State Board is re-naming the "exotic species" listings as "invasive species" listings to reflect this.

Invasive species is defined as: an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. This definition is taken from United States Executive Order 13112 of February 3, 1999 on Invasive Species (USA, 1999).

However, there are still several issues inherent in listing for such a non-traditional pollutant.

1) While certain "biological materials" have been considered pollutants, populations of animals have not been traditionally considered "pollutants." Section 502(6) of the Clean Water Act defines "pollutants" to include "biological materials…*discharged into water*". The courts have interpreted the term "biological materials" to include "invasive" species that might be found in ballast water which is discharged. It is not clear that these Clean Water Act definitions and court interpretations would apply equally to invasive or non-native species that are already established (i.e. non-native species whose populations are not sustained or increased by ongoing discharges) as they would to invasive species that are continuing to be discharged.

2) Standards have not been written explicitly for invasives.

3) A 303(d) listing would trigger an obligation by the Regional Board to develop a program to address the "invasive" species impairment. It would be a significant challenge to develop the regulatory program to regulate a population of an established invasive species.

In this 2008 update, Regional Board staff have recommended the new listing of Malibu Creek, Medea Creek, Lindero Creek and Las Virgenes Creek in the Malibu Creek watershed and Solstice Canyon Creek in the Santa Monica Bay watershed as impaired for invasive species, specifically the New Zealand mudsnail. Factsheets for these decisions are included in Appendix G.

Cold Creek, and Triunfo Creek also have mudsnails but are not recommended for listing at this time. Factsheets for these decisions are included in Appendix G.

New Zealand mudsnails, *Potamopyrgus antipodarum,* are tiny (3-5 mm), highly invasive aquatic snails. From the Santa Monica Bay Restoration Commission/Santa Monica Baykeeper (2009):

In large numbers, these small snails can completely cover a stream bed and wreak havoc on local stream ecosystems. Several studies have documented NZMS [New Zealand Mud Snail] densities in streams at more than 500,000 organisms per square meter. These massive colonies simply outcompete native aquatic invertebrates that the watershed's fish and amphibians rely on for food, disrupting the entire food web. NZMS are easily transported from stream-to-stream by hitchhiking, they attach themselves to shoes (especially waders), equipment (fishing gear, bicycle tires), animals (native and non-native), and even boats. Anything that contacts a stream infested by NZMS will likely become contaminated. New Zealand mudsnails were discovered in Idaho in the mid-1980s, and have since spread to every western state except New Mexico. NZMS were first identified in benthic macroinvertebrate (BMI) samples

collected in the Malibu Creek watershed in May 2005. Unfortunately, the Malibu Creek watershed samples containing NZMS were not identified until May 2006. NZMS pose a significant danger to streams throughout the Santa Monica Mountains and threaten the many efforts at habitat restoration and protection, particularly those to restore populations of the endangered steelhead trout in this region.

The data available for mudsnails was evaluated by the State Listing Policy, Section 3.10, Trends in Water Quality, using the narrative toxicity standard in the Basin Plan as the criteria. This approach is similar to the approach taken by State Board for listing "exotic species" during the 2006 listing update and is in accordance with the Listing Policy.

For mudsnails in the Los Angeles Region specifically, a waterbody is proposed to be included on the 303(d) list as impaired for invasive species if a negative trend in water quality has been demonstrated and the Aquatic Life Support core beneficial use was not supported. Staff considered a reach to be demonstrating a negative trend in water quality if at least one site in the waterbody exhibited an increase in density of mudsnails (with at least a three years sampled). Staff considered the core beneficial use of Aquatic Life Support not to be supported if at least one site exhibited a medium or high density of mudsnails.

3.3.3 **Biostimulatory Substances- possible future impairment determinations**

In this Integrated Report and 303(d) list update, Regional Board staff have continued to determine impairments and list and de-list decisions for nitrogen compounds as in the past based on Basin Plan nitrogen compound objectives. The Basin Plan contains a specific nitrogen (nitrate nitrite) water quality objective, which is established at 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen. This objective is specifically set to protect drinking water beneficial uses and is consistent with the California Department Public Health nitrate drinking water standard.

This nitrogen water quality objective does not protect waterbodies from impairments related to biostimulatory substances and eutrophication. However, Basin Plan also contains a narrative standard for biostimulatory substances and the Regional Board recognizes the need for a clear approach for determinations of impairment under the biostimulatory substances standard in the Basin Plan.

Previous iterations of the Los Angeles Region's 303(d) list have recognized the need to determine impairment based on biostimulatory substances and eutrophication and have included impairments for 'low DO/org. enrichment,' 'algae,' 'nutrient/(algae),' 'odors, scum,' 'Eutroph,' and 'unnatural scum/foam.' In future updates, Regional Board staff is considering categorizing these impairments all as 'biostimulatory substances' using a Los Angeles Region specific, nutrient concentration/biological response method as described below. In this 2008 list update, however, no "biostimulatory substances" impairments have been included.

The biostimulatory substances water quality objective in the Basin Plan addresses water quality impairments related to nutrient enrichment (eutrophication). The Basin Plan identifies biostimulatory substances as 'nitrogen, phosphorus and other compounds that stimulate growth'. The water quality objective states:

> *Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.*

Eutrophication and nutrient enrichment problems rank as the most widespread water quality problems nationwide; for example, more lake acres are affected by nutrients than any other pollutant or stressor (EPA 2000). Eutrophication is defined by increased nutrient loading to a waterbody and the resulting increased growth of phytoplankton and other aquatic plants. Additionally, other parameters such as decreased dissolved oxygen and water clarity can also indicate eutrophic conditions. Phosphorus and nitrogen are recognized as key nutrients for the growth of phytoplankton, algae, and aquatic plants and are responsible for the eutrophication of surface waters.

A waterbody's biological response to nutrient loading is often what actually impairs beneficial uses. For example, increased nitrogen and phosphorus loading can lead to harmful algal blooms, which impair the beneficial uses of the waterbody. Therefore, it is useful to evaluate potential biostimulatory substance impairments in terms of both nutrient concentrations and biological response indicators. Key biological response indicators include the following:

Low Dissolved Oxygen (DO)
Dramatic Diurnal Variations in DO
Increased pH
Decreased Water Clarity
Increased Chlorophyll a Concentration
Increase Macro and/or Benthic Algal Biomass
Unpleasant Odors, Taste and/or Aesthetics

By evaluating both nutrient concentrations and biological response indicators together, a more direct linkage is made between water quality conditions and beneficial use impairments. This approach provides a more robust water quality assessment.

The Los Angeles Regional Water Board is considering including waterbodies on the State's 303(d) list of impaired waterbodies for biostimulatory substances when both nutrient concentrations and one or more biological response indicators are at levels which characterize eutrophic conditions and/or beneficial uses of the waterbody are impaired.

However, there are many nutrient and biological response indicator criteria that may be reviewed and applied for the purposes of placing a waterbody on the State's 303(d) list. Table 3.1 and 3.2 below present various nutrient concentrations and associated biological

response indicator criteria limits. These criteria are being considered by the Regional Board to assess the biostimulatory substances water quality objective. The sources of these criteria include EPA Nutrient Criteria Technical Guidance Manual, EPA Ambient Water Quality Criteria Recommendations Nutrient Ecoregion III, and California Nutrient Numeric Endpoints. The Regional Board intends to solicit stakeholder comments regarding the criteria presented below for development of the guidelines to be used for listing in future updates of the 303(d) list.

Table 3-2 Rivers and Streams: Nutrient Concentration and Biological Response Indicators Criteria Limits

Potential Criteria to assess Biostimulatory Substances Water Quality Objective

Rivers and Streams

Total Nitrogen (mg/L)	Total Phosphorus (mg/L)	Benthic Algal Biomass (mg/m^2)	Percent Cover	pH	Dissolved Oxygen (mg/L)	Source
0.65	0.09	150	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA National Nutrient Criteria Technical Guidance
0.37	0.022	43.9	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA Nutrient Criteria Recommendations Ecoregion III
0.5	0.03	none	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA Nutrient Criteria Recommendations Ecoregion III: Sub -Ecoregion 6 - Southern and Central CA
0.06	0.002	150	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	Nutrient Numeric Endpoints - Malibu Creek Case Study
0.23	0.02	WARM 150 COLD 100	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	Nutrient Numeric Endpoints - SWRCB Nutrient Screening tools for 303(d) Listing
< 0.295 as SIN*	< 0.026 as SRP**	120	Floating 30% Benthic 60%	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	New Zealand Periphyton Guideline. Barry Biggs, June 2000

*Soluble Inorganic Nitrogen (SIN). **Soluble Reactive Phosphorus (SRP)
Basin Plan Water Quality Objectives are applied for pH and dissolved oxygen

Table 3-3 Lakes: Nutrient Concentration and Biological Response Indicators Criteria Limits

Potential Criteria to assess Biostimulatory Substances Water Quality Objective						
Lakes						
Total Nitrogen (mg/L)	**Total Phosphorus (mg/L)**	**Chlorophyll a (ug/L)**	**Secchi Depth (m)**	**pH**	**Dissolved Oxygen (mg/L)**	**Source**
1	0.1	14	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA National Nutrient Criteria Technical Guidance
0.4	0.017	3.5	2.8	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA Nutrient Criteria Recommendations Ecoregion III
0.51	0.172	24.6	1.9	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA Nutrient Criteria Recommendations Ecoregion III: Sub - Ecoregion 6 - Southern and Central CA
0.84	0.05	20	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	Nutrient Numeric Endpoints - Malibu Creek Case Study
1.2 (summer mean)	0.1 (summer mean)	WARM 10 COLD 5	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	Nutrient Numeric Endpoints - SWRCB Nutrient Screening tools for 303(d) Listing
Basin Plan Water Quality Objectives are applied for pH and dissolved oxygen						

3.4 Data Analysis

Water Board staff evaluated the submitted data and additional data in accordance with the Listing Policy, taking into account data quality and spatial and temporal representativeness.

LOEs. A determination that a waterbody is impaired by a particular pollutant was dependent on one or more Lines of Evidence (LOE). A Line of Evidence is the specific information for a single pollutant from a single data source in a waterbody. The LOE includes the beneficial use(s) impacted; the pollutant name(s) pertaining to that water segment and data; the water quality objective (WQO), criterion (WQC) or guideline used to assess the data; detailed information specific to that data; how the data was assessed including the type of data, the total number of samples assessed and those samples that exceeded the WQO, WQC or guideline; where and when the data was collected.

Factsheets. The factsheet includes all LOEs developed for a certain pollutant waterbody combination and the resulting listing or delisting decision.

All available data was reviewed by staff. Analyses were documented in Lines of Evidence, factsheets and listing or delisting decisions according to established priorities. All high priority factsheets were completed.

Los Angeles Region Factsheet Development Priorities

1. High Priority
    a. factsheets (decision: *list*) for waterbody/pollutant combinations not on the 2006 303(d) list where an examination of the data indicate standards were not met. This factsheet may refer to more than one core beneficial use.
    b. factsheets (decision: *de-list*) for waterbody/pollutant combinations on the 2006 303(d) list where an examination of the data indicate standards were met.
    c. factsheets (decision: *a core use is being supported*) for waterbody/core use combination where an examination of the data indicate that all standards (for which there are data) are being met for that core use (305(b)). This factsheet may refer to more than one pollutant.
    d. factsheets for waterbody/pollutant combinations on the 303(d) list where a TMDL has been completed and approved by EPA (new approved TMDLs since 2006 303(d) list).

2. Medium Priority
    a. factsheets (decision *a core use is being supported)* for waterbody/core use combination where a preliminary examination of the data indicate that standards are being met for that core use (305(b)). This factsheet may refer to more than one pollutant. However, there may be a waterbody/pollutant combinations on the list impairing other core uses.

b. factsheets (decision: *clarification*) for waterbody/pollutant combinations where the name of the pollutant has changed (e.g. PAHs to become individual PAHs (e.g. aldrin, fluoranthene)) or it is advisable to make a change in the extent of the waterbody (e.g. one waterbody is broken into two or a the dividing line between two reaches is modified).

c. factsheets (decision: *do not list or do not de-list)* for waterbody/pollutant combinations where there is significant new data (new line of evidence) but a preliminary examination of the data indicate that the list status (listed or not listed) would not change.

3. Low Priority

a. factsheets for waterbody/pollutant combinations where a preliminary examination of the data indicate standards were met (the creation of a "do not list" factsheet where the waterbody is listed for some other waterbody/pollutant combination or a 305(b) supporting factsheet has been completed).

b. factsheets for waterbody/pollutant combinations where the waterbody/pollutant combination is on the 303(d) list for that waterbody/pollutant combination and a preliminary examination of the data indicate standards were not met (the creation of a "do not de-list" factsheet).

c. factsheets for waterbody/pollutant combinations where available data is of insufficient quantity or quality to make assessments.

3.5 Integrated Report Categories

In this report, each assessed waterbody segment was assigned to one of five non-overlapping categories.

First, for each core beneficial use associated with each waterbody segment, a rating of fully supporting, not supporting, or insufficient information was assigned based on the readily available data and the analyses and criteria described, above. Then each assessed water segment was placed into one of five non-overlapping categories of water bodies. These Integrated Report categories are based on the USEPA guidance for states' Integrated Reports, but contain some modifications based on the State Listing Policy. The distribution of waterbodies into these categories may not be representative of the true state of waterbodies in the Los Angles Region due to the availability of water quality data and Regional Board decision development priorities.

Category 1: A water segment that 1) supports a minimum of one Beneficial Use for each Core Beneficial Use that is applicable to the water; and 2) has no other uses impaired. (No appendix to this report has been included for this category since, at this time, the Los Angeles Region has no waterbodies for which data supports that all beneficial uses are being supported.)

Category 2 (Appendix B): A water segment that 1) supports some, but not all, of its beneficial uses; 2) can have other uses that are not assessed or lack sufficient

information to be assessed; 3) cannot have uses are which not supported; and 4) in agreement with the USEPA, may be included in this category with a minimum of one pollutant assessed for one use.

Category 3: (Appendix C): A water segment with water quality information that could not be used for an assessment, for reasons such as: monitoring data have poor quality assurance, not enough samples in a dataset, no existing numerical objective or evaluation guideline, the information alone cannot support an assessment, etc. Waters completely lacking water quality information are considered "not assessed".

Category 4A (Appendix D): A water segment where ALL its 303(d) listings are being addressed; and 2) at least one of those listings is being addressed by a USEPA approved TMDL.

Category 4B: A water segment where ALL its 303(d) listings are being addressed by action(s) other than TMDL(s). (No appendix to this report has been included for this category since, at this time, the Los Angeles Region does not have waterbodies in this category.)

Category 4C: A water segment that is impacted by non-pollutant related cause(s). (No appendix to this report has been included for this category since, at this time, the Los Angeles Region does not have waterbodies in this category.)

Category 5 (Appendix E): A water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for this segment.

3.6 Information Management

All LOEs, factsheets and listing or delisting decisions were entered into the statewide *California Water Quality Assessment (CalWQA) Database.* The CalWQA database stores all LOEs, listing decisions, and beneficial use support ratings for assessed water bodies in California. This database was developed in 2007 for the purpose of storing detailed water quality assessment information. The database is designed so that this information can be easily reevaluated in future assessment updates and can be exported to the USEPA's Assessment Database at the end of each assessment update.

4 Summary of Assessment Results

A full summary of the Los Angeles Region Integrated Report is included as Table 4-1.

Table 4-1 Integrated Report Summary

Integrated Report Category Number	Integrated Report Category definition	Number of waterbodies
1	Waters Supporting All Beneficial Uses	0
2 (Appendix **B**)	Waters Supporting Some Beneficial Uses	26
3 (Appendix C)	Waters With Insufficient Information	23
4 (Appendix D)	Water Quality Limited Segments Addressed	31
5 (Appendix E)	Water Quality Limited Segments not Fully Addressed	158
Total		*238 assessed waterbodies*
(4 and 5) (Appendix F) 303(d) list	*List of All Waterbody Impairments (the updated 303 (d) list)*	*189 waterbodies on the 303(d) list*

Of the waterbodies included in the Integrated Report, a total of 68 new listings are proposed and 30 de-listings are proposed. In addition, in this update, 113 previous listings are now included in the list as 'being addressed by a TMDL' because a USEPA approved TMDL has been completed. A summary of new additions to the Integrated Report is found in Table 4-2. In this Table, decisions to List are shown in three categories. "List" is the decision to include a waterbody/pollutant combination on the 303(d) list for the first time; "List (being addressed by TMDL)" is the decision to move a waterbody/pollutant combination from the 'requires a TMDL" portion of the list to the "being addressed by a TMDL" portion of the list because a USEPA approved TMDL has been completed since the last update to the 303(d) list in 2006; "List (being addressed by action other than TMDL)" is the decision to move a waterbody/pollutant combination from the 'requires a TMDL" portion of the list to the "being addressed by action other than TMDL" portion of the list because another regulatory action(such as a permitted restoration action) is sufficient to address the impairment. Factsheets for all these decisions are found in Appendix G.

Table 4-2 Integrated Report Summary for NEW decisions in 2008 including *delist*, *do not delist, do not list and list*

New Decision in 2008	Number of waterbodies	Number of waterbody/pollutant combinations
Delist	19	30
Do Not Delist	23	29
Do Not List	50	86
List	41	68
List (being addressed by TMDL)	55	113
List (being addressed by action other than TMDL)	2	3
Total		329

The total number of waterbody/pollutant combinations in the proposed 2008 303(d) list is 829. 448 of these waterbody/pollutant combinations, or 54%, require the completion of a TMDL or other regulatory action to address the impairment. 381 of these waterbody/pollutant combinations, or 46%, are currently being addressed by an EPA approved TMDL or other regulatory action.

This was the first time that the Water Boards have prepared an Integrated 303(d)/305(b) Report under the current Listing Policy and USEPA Integrated Report Guidance and the first time that the Regional Boards have used the CalWQA database. Combining the 303(d) list update with the 305(b) report and using the same database as all other Regions added efficiency and ensured consistency, but provided challenges in terms of workload and project management. While individual assessments for potential 303(d) listings or de-listings provided valuable information for the 305(b) report, creating the overall 305(b) report using 303(d) listing decisions as the primary input also had limitations. Preparing assessment fact sheets at the level of detail required for 303(d) list changes under the Listing Policy limited the amount of data which could be developed in the manner necessary for inclusion in the CalWQA database. In addition, the readily available data are also often biased towards areas with more potential discharges, since these areas are where the bulk of the monitoring activity takes place. For these reasons, the number of waterbody segments in each Integrated Report category is not necessarily a representative sampling of all the waterbodies within the Los Angeles Region. Despite these limitations, this Integrated Report provides the most complete 305(b) report for the Los Angeles Region to date.

5 TMDL Scheduling

As part of its 1996 and 1998 regional water quality assessments, the Regional Board identified over 700 waterbody-pollutant combinations in the Los Angeles Region where TMDLs would be required (LARWQCB, 1996, 1998). A 13-year schedule for development of TMDLs in the Los Angeles Region was established in a consent decree (Heal the Bay Inc., et al. v. Browner, et al. C 98-4825 SBA) (United States District Court, Northern District of California, 1999) approved on March 22, 1999 (USEPA/Heal the Bay Consent Decree).

For the purpose of scheduling TMDL development, the decree combined the over 700 waterbody-pollutant combinations into 92 TMDL analytical units. Proposed de-listings in this report would discharge or partially discharge 12 TMDL analytical units as specified in the USEPA/Heal the Bay Consent Decree between the U.S. EPA and Heal the Bay, Inc. et al. filed on March 22, 1999.

Staff identified the new listings as a low priority, to be started after the USEPA/Heal the Bay Consent Decree commitments are met. A possible exception to this would be if a new listing could be folded into an existing analytical unit without the need for additional resources to develop the resulting TMDL. The assignment of a low priority to these new TMDL analytical units is not a reflection on their importance, but is given because the Regional Board has first prioritized existing USEPA/Heal the Bay Consent Decree commitments before beginning new TMDLs. The maximum time that can elapse between 303(d) listing and TMDL completion is 13 years. Accordingly, staff have assigned all new listings a TMDL completion date of 2021. This does not suggest that all new listings have the same priority, but rather that the factors determining TMDL priorities have not yet been evaluated as part of this listing process.

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NEWS RELEASE

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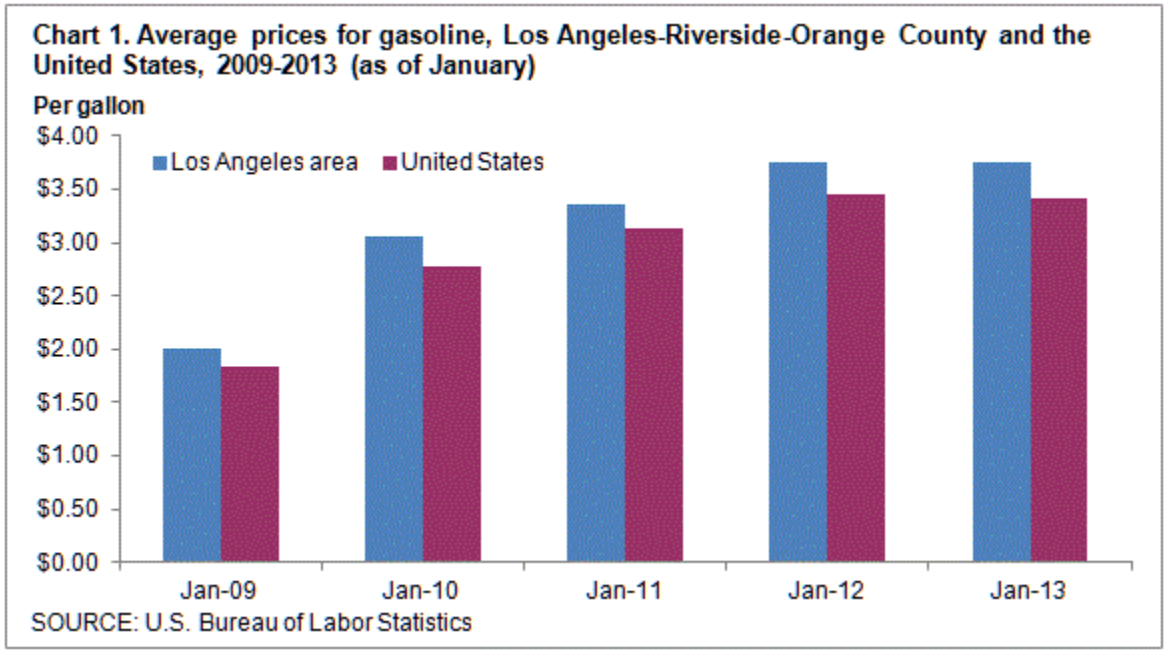
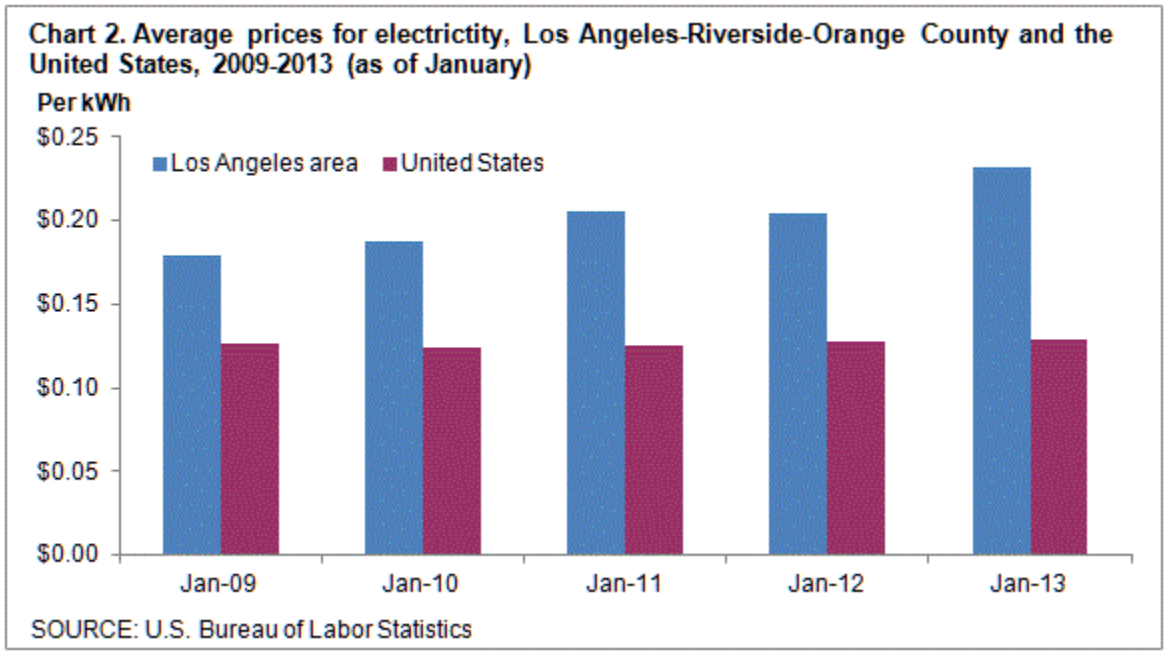
AVERAGE ENERGY PRICES, LOS ANGELES AREA–JANUARY 2013

Gasoline prices averaged $3.749 a gallon in the Los Angeles area in January 2013, the U.S. Bureau of Labor Statistics reported today. Regional Commissioner Richard J. Holden noted that area gasoline prices were similar to last January when they averaged $3.747 per gallon. Los Angeles area households paid an average of 23.2 cents per kilowatt hour (kWh) of electricity in January 2013, up from 20.4 cents per kWh in January 2012. The average cost of utility (piped) gas at $1.013 per therm in January was similar to the $0.996 per therm spent last year. (Data in this release are not seasonally adjusted; accordingly, over-the-year-analysis is used throughout.)

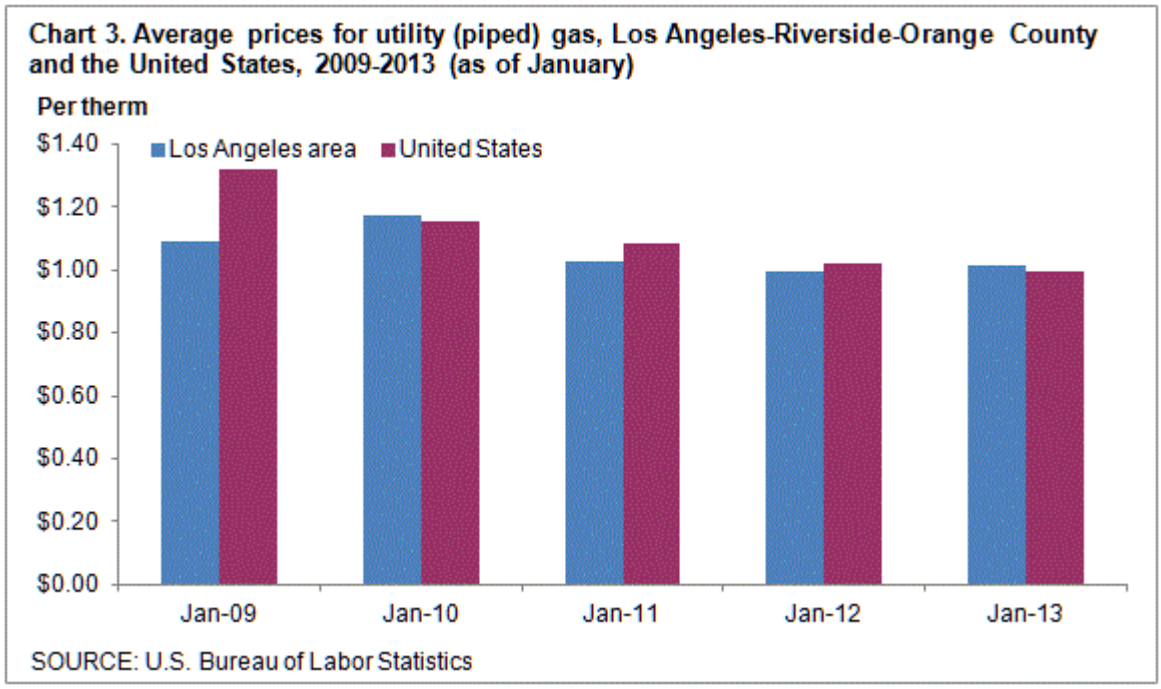
At $3.749 a gallon, Los Angeles area consumers paid 10.0 percent more than the $3.407 national average in January 2013. A year earlier, consumers in the Los Angeles area paid 8.7 percent more than the national average for a gallon of gasoline. The local price of a gallon of gasoline has exceeded the national average by more than six percent in the month of January in each of the past five years. (See chart 1.)



The 23.2 cents per kWh Los Angeles households paid for electricity in January 2013 was 79.8 percent more than the nationwide average of 12.9 cents per kWh. Last January, electricity costs were 59.4 percent higher in Los Angeles compared to the nation. In the past five years, prices paid by Los Angeles area consumers for electricity exceeded the U.S. average by more than 42 percent in the month of January. (See chart 2.)



Prices paid by Los Angeles area consumers for utility (piped) gas, commonly referred to as natural gas, were $1.013 per therm, similar to the national average in January 2013 ($0.996 per therm). A year earlier, area consumers also paid close to the same price per therm for natural gas compared to the nation. In three of the past five years, the per therm cost for natural gas in January in the Los Angeles area has been within three percent of the U.S. average. (See chart 3.)



The Los Angeles-Riverside-Orange County, Calif. metropolitan area consists of Los Angeles, Orange, Riverside, San Bernardino and Ventura Counties in California.

Technical Note

Average prices are estimated from Consumer Price Index (CPI) data for selected commodity series to support the research and analytic needs of CPI data users. Average prices for electricity, utility (piped) gas, and gasoline are published monthly for the U.S. city average, the 4 regions, the 3 population size classes, 10 region/size-class cross-classifications, and the 14 largest local index areas. For electricity, average prices per kilowatt-hour (kWh) and per 500 kWh are published. For utility (piped) gas, average prices per therm, per 40 therms, and per 100 therms are published. For gasoline, the average price per gallon is published. Average prices for commonly available grades of gasoline are published as well as the average price across all grades.

Price quotes for 40 therms and 100 therms of utility (piped) gas and for 500 kWh of electricity are collected in sample outlets for use in the average price programs only. Since they are for specified consumption amounts, they are not used in the CPI. All other price quotes used for average price estimation are regular CPI data.

With the exception of the 40 therms, 100 therms, and 500 kWh price quotes, all eligible prices are converted to a price per normalized quantity. These prices are then used to estimate a price for a defined fixed quantity.

The average price per kilowatt-hour represents the total bill divided by the kilowatt-hour usage. The total bill is the sum of all items applicable to all consumers appearing on an electricity bill including, but not limited to, variable rates per kWh, fixed costs, taxes, surcharges, and credits. This calculation also applies to the average price per therm for utility (piped) gas.

Information from this release will be made available to sensory impaired individuals upon request. Voice phone: 202-691-5200, Federal Relay Services: 800-877-8339.

Table 1. Average prices for gasoline, electricty, and utility (piped) gas, Los Angeles-Riverside-Orange County and the United States, January 2012-January 2013, not seasonally adjusted

Year and month	Gasoline per gallon		Electricity per kWh		Utillity (piped) gas per therm	
	Los Angeles area	United States	Los Angeles area	United States	Los Angeles area	United States
2012						
January	$3.747	$3.447	$0.204	$0.128	$0.996	$1.021
February	4.013	3.622	0.204	0.128	0.931	0.986
March	4.394	3.918	0.204	0.127	0.931	0.978
April	4.257	3.976	0.204	0.127	0.883	0.951
May	4.333	3.839	0.204	0.129	0.978	0.907
June	4.037	3.602	0.193	0.135	1.054	0.927
July	3.800	3.502	0.193	0.133	1.053	0.943
August	4.073	3.759	0.193	0.133	1.072	0.960
September	4.175	3.908	0.193	0.133	1.027	0.953
October	4.499	3.839	0.211	0.128	1.052	0.962
November	3.924	3.542	0.211	0.127	0.995	0.994
December	3.677	3.386	0.211	0.127	1.042	1.004
2013						
January	3.749	3.407	0.232	0.129	1.013	0.996

The State Water Project

Final Delivery Reliability Report 2011

June 2012

State of California
Natural Resources Agency
Department of Water Resources





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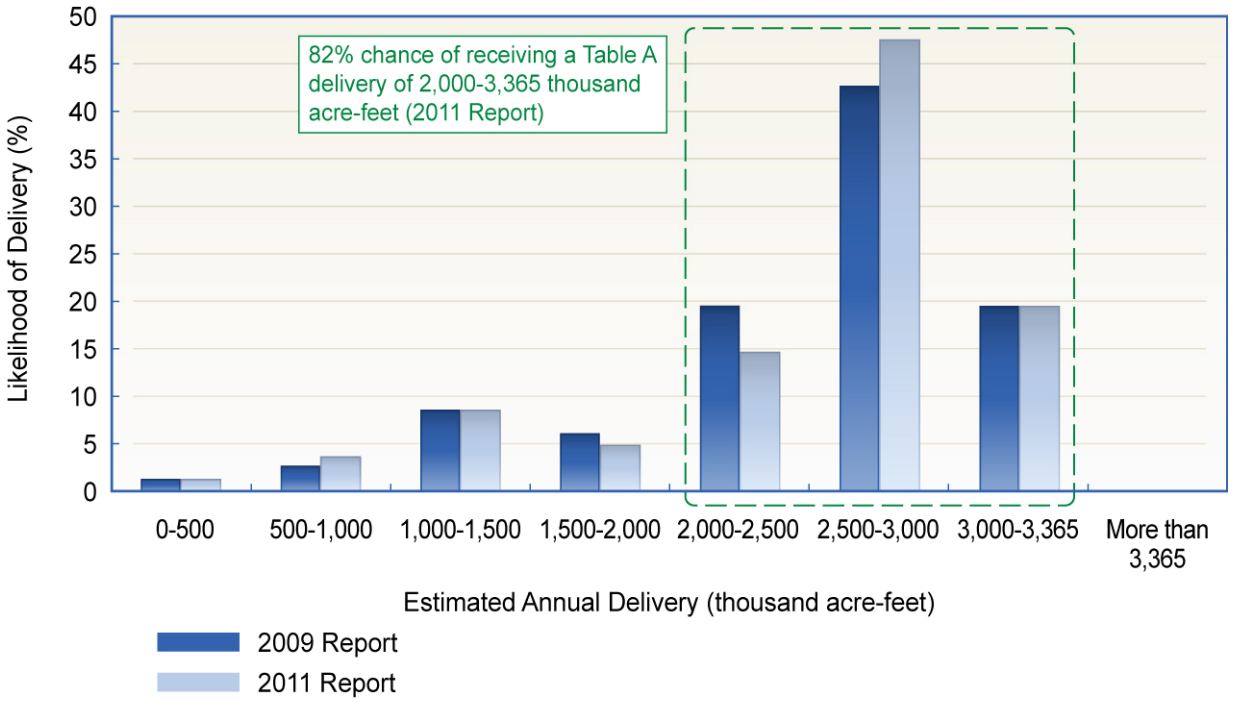

Figure 6-4. Estimated Likelihood of SWP Table A Water Deliveries (Existing Conditions)

Table 6-3. Estimated Average and Dry-Period Deliveries of SWP Table A Water (Existing Conditions), in Thousand Acre-Feet (Percent of Maximum SWP Table A Amount, 4,133 taf/year)

	Long-term Average	Single Dry Year (1977)	2-Year Drought (1976–1977)	4- Year Drought (1931–1934)	6-Year Drought (1987–1992)	6-Year Drought (1929–1934)
2009 Report	2,483 (60%)	302 (7%)	1,496 (36%)	1,402 (34%)	1,444 (35%)	1,398 (34%)
2011 Report	2,524 (61%)	380 (9%)	1,573 (38%)	1,454 (35%)	1,462 (35%)	1,433 (35%)

Table 6-4. Estimated Average and Wet-Period Deliveries of SWP Table A Water (Existing Conditions), in Thousand Acre-Feet (Percent of Maximum SWP Table A Amount, 4,133 taf/year)

	Long-term Average	Single Wet Year (1983)	2-Year Wet (1982–1983)	4-Year Wet (1980–1983)	6-Year Wet (1978–1983)	10-Year Wet (1978–1987)
2009 Report	2,483 (60%)	2,813 (68%)	2,935 (71%)	2,817 (68%)	2,817 (68%)	2,872 (67%)
2011 Report	2,524 (61%)	2,886 (70%)	2,958 (72%)	2,872 (69%)	2,873 (70%)	2,833 (69%)

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Appendix 7-B: Dominguez Channel Trash Reduction Supporting Documents

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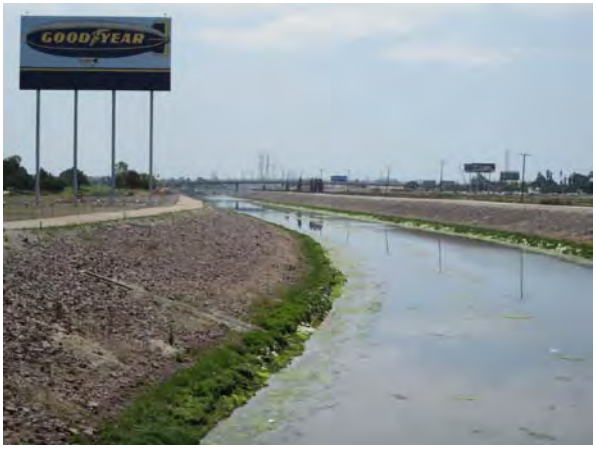
Keep Carson Beautiful

Dominguez Channel Cleanup Event



Adopt a Stormdrain Foundation

GOODYEAR

Keep Carson Beautiful, **Adopt a Stormdrain Foundation,** and **Goodyear** are sponsoring another cleanup of the Dominguez Channel at Main Street. **Volunteers** are needed for this very important activity and **Adopt a Stormdrain Foundation** is authorized to provide **community service credit for your participation.**

Come be a part of the solution to environmental pollution.
You can make a difference.

When: **Saturday, August 20, 2011 from 8:00 a.m. to 11:00 a.m.**
Sign-in begins at 7:30 a.m. at the Goodyear Blimp office on Main Street near the 405 freeway.
All participants must sign a waiver.

What: **Dominguez Channel Cleanup Event at Main Street**

Where: Main Street entrance to the Dominguez Channel next to the "Spirit of America" GOODYEAR **Blimp.**
Refreshments will be served during sign-in.
Restrooms and limited parking will be available.
Additional parking is available at nearby Victoria Park.

For additional information contact:
Patricia Elkins at (310) 847-3529, **(310) 864-9863** or pelkins@carson.ca.us
Cathy Beauregard at (424) 772-6293 or cathy.beauregard@gmail.com

Great American Cleanup™

Keep Carson Beautiful, Adopt a Stormdrain Foundation, and **Goodyear** are teaming up again for Keep America Beautiful's Great American Cleanup™. This year's projects will begin on Saturday, April 21, 2012, the day before Earth Day, with the removal of litter from the banks of the Dominguez Channel. Your help is needed for this very important project. Just a few hours of your time can make a big difference.

When: 7:30 a.m. to noon April 21, 2012. All participants must sign a waiver.
Where: Sign in at 19200 S. Main Street at the Goodyear "Spirit of America" Blimp

For additional information about this event or community service credit contact:
Patricia Elkins at (310) 847-3529, (310) 864-9863 or pelkins@carson.ca.us
Cathy Beauregard at (424) 772-6293 or cathy.beauregard@gmail.com

Table 2.4-1. (Continued).

Scientific Name Common Name	Habitat and Distribution	Flower Season	Status Designation	Potential to Occur
Dithyrea maritime Beach spectaclepod	Perennial herb (rhizomatous) occurring in coastal dunes and coastal scrub (sandy) habitats. Range of the species is reported as San Luis Obispo south to Baja California, including the offshore islands.	March – May	Fed: [FSOC] CA: THR CNPS: List 1B R-E-D: 3-3-2	Low. Limited suitable habitat occurs within the watershed; historic record of occurrence in Hermosa Beach.
Dudleya virens ssp. Insularis Ilsnad Green Dudleya	Perennial herb occurring in coastal bluff scrub, and rocky coastal scrubs. Reported in Los Angeles County and on Catalina and San Nicholas Islands	April – June	Fed: None CA: None CNPS: List 1B R-E-D: 2-2-3	Moderate. Limited suitable habitat occurs within the watershed. Island green dudleya was report in coastal bluff scrub on the Palos Verdes Peninsula in 1992.
Fremontodendron mexicanum Mexican flannelbush	Evergreen shrub occurring in coniferous forests, chaparral, and woodlands on gabbroic, metavolcanic, or serpentinite soils. Reported range includes Monterey, Kern, Los Angeles, and Orange Counties, however, these reports are considered erroneous. Known from less than 15 observations in San Diego County and Baja California.	March – June	Fed: END CA: Rare CNPS: List 1B R-E-D: 3-3-2	Low. Limited suitable habitat occurs on the Palos Verdes Peninsula. A 1963 report from Palos Verdes may be a misidentification.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	Annual herb occurring in coastal swamps (salt) and marshes, playas, and vernal pools. The species is known from San Luis Obispo south to Baja California, including the Santa Rosa Island.	February - June	Fed: None CA: None CNPS: List 1B R-E-D: 2-3-2	Moderate. Suitable habitat (marshes, playas, swamps) occur at several locations in the watershed; historic record of occurrence in a slough near Gardena.
Navarretia fossalis spreading navarretia	Annual herb occurring in vernal pools, chenopod scrubs, marshes and swamps, and playa habitats. May also occur in swales and ditches. Reported range is San Luis Obispo County (?) south to Baja California	April – June	Fed: THR CA: None CNPS: List 1B R-E-D: 2-3-2	High. Suitable habitat occurs within the watershed, primarily in uninvestigated fields or swales. The species was last reported in the watershed in 1963 at Rosecrans and Western Avenues in a grassy meadow.
Nemacaulis denudata var. denudata coast woolly-heads	Annual herb occurring in coastal dune habitats. Reported range of the species is Los Angeles, Orange, and San Diego counties. Also reported on Catalina Island and in Baja California.	April – September	Fed: None CA: None CNPS: List 1B R-E-D: 2-2-2	Low. Remnant coastal dune habitat may occur close to the coast; however, remaining habitat is likely highly disturbed and the species has not been reported in the watershed since 1905 on Terminal Island.

Table 2.4-1. (Continued).

Scientific Name Common Name	Habitat and Distribution	Flower Season	Status Designation	Potential to Occur
Orcuttia californica California orcutt grass	Annual herb restricted to vernal pools or vernal pool-like habitats. Reported range is southern and Baja California.	April – August	Fed: END CA: END CNPS: List 1B R-E-D: 3-3-2	Low. Suitable habitat occurs at Madrona Marsh; however, the species has not been recorded at that site. A 1946 record reported the species in a dry ditch near Western and Rosecrans Avenues; however a survey of this location in 1976 was negative (CNDDB)
Pentachaeta lyonii Lyon's pentachaeta	Annual herb occurring in coastal scrubs, chaparral and grassland. Known primarily from locations in the Santa Monica Mountains and Simi Hills.	March – August	Fed: END CA: END CNPS: List 1B R-E-D: 3-3-3	Moderate. Limited suitable habitat occurs within the watershed; historic record of occurrence in San Pedro (type locality).
Phacelia stellaris Brand's phacelia	Annual herb occurring in coastal dunes and coastal scrub habitats. Reported range is Los Angeles and San Diego counties, into Baja California.	March – June	Fed: None CA: None CNPS: List 1B R-E-D: 3-3-2	Low. Limited suitable habitat occurs in the watershed. Historic record of the species occurring in Redondo Beach was reported in 1909.

Status Codes

Federal: (federal Endangered Species Act, USFWS):
- END: Federally listed, endangered.
- P-END: Proposed federal listed, endangered.
- THR: Federally listed, threatened.

State: (California Endangered Species Act, CDFG):
- END: State-listed, endangered.
- THR: State-listed, threatened.
- RARE: State-listed as rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)

California Native Plant Society (CNPS):
- List 1A: Plants presumed extinct in California.
- List IB: Plants rare and endangered in California and throughout their range.
- List 2: Plants rare, threatened or endangered in California but more common elsewhere in their range.
- List 3: Plants about which we need more information; a review list.
- List 4: Plants of limited distribution; a watch list.

CNPS R-E-D Code:

Rarity
- 1: Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.
- 2: Occurrence confined to several populations or one extended population.
- 3: Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

Endangerment
- 1: Not endangered.
- 2: Endangered in a portion of its range.
- 3: Endangered throughout its range.

Distribution
- 1: More or less widespread outside California.
- 2: Rare outside California.
- 3: Endemic to California (i.e., does not occur outside California).

General references: Hickman (ed.) 1993; Munz 1974; CNPSEI 2002; CNDDB 2002
U.S.G.S. 7 ½' Quads: Long Beach, San Pedro, Redondo Beach, Torrance, Inglewood

2.4.3.2 Sensitive Wildlife Species

The literature review resulted in a list of 38 sensitive wildlife species that have the potential to occur within the Dominguez Watershed (Table 2.4-2). The only sensitive species observed during the reconnaissance surveys for this project were the great egret and snowy egret. A sensitive species was considered as a potential inhabitant of the project site if its known geographical distribution encompassed part of the watershed or if its distribution was near the watershed boundaries and general habitat requirements of the species were present (such as the presence of roosting, nesting, or foraging habitat, or a permanent water source). Furthermore, the potential for each species to occur within the watershed was also assessed. The "potential for occurrence" ranking is based on the following criteria:

Absent: Species is concluded to be absent from the watershed based on failure to detect the species during focused surveys.

Low potential for occurrence: There are no recent or historical records of the species occurring within the watershed or its immediate vicinity and the diagnostic habitat requirements strongly associated with the species do not occur within the watershed or its immediate vicinity.

Moderate potential for occurrence: There is a recent or historical record of the species within the watershed or its immediate vicinity, or the watershed is within the species range and contains a varying amount of suitable habitat typically associated with the species.

High potential for occurrence: There is both a recent or historical record of the species in or in the immediate vicinity of the watershed, and/or the diagnostic habitat requirements strongly associated with the species occur in or in the immediate vicinity of the watershed.

Species present: The species was observed within the watershed at the time of the survey.

Table 2.4-2 contains a summary of the sensitive wildlife species and their potential to occur within the Dominguez Watershed. Suitable habitats for most of these species occur within the riparian vegetation associated with the watershed. However, there are several sensitive species that have the potential to occur within the upland habitats, primarily in areas supporting coastal sage scrub. Several of the following species are known, or have the potential, to nest within the Dominguez Watershed. Others merely use the watershed as foraging habitat.

Table 2.4-2. Sensitive wildlife species potentially occurring within the Dominguez Watershed.

Scientific Name	Common Name	Listing	Potential for Occurrence
CLASS INSECTA	INSECTS		
LYCAENIDAE *Glaucopsyche lygdamus palosverdesensis*	BLUE BUTTERFLIES Palos Verdes blue butterfly	FE	Moderate. This species is generally restricted to the cool, fog-shrouded seaward side of the Palos Verdes Peninsula. The larvae feed upon the seeds and flowers of the host plants (*Lotus scoparius* and *Astragalus trichopodus* var. *lonchus*), molting several times, and soon drop to the ground or enter locoweed seedpods to become pupae. The Palos Verdes blue butterfly has been almost extirpated from its range. The only known population is located near San Pedro on the Defense Fuel Support Point (DFSP) land managed by the Navy; however, suitable habitat may be present for this species in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34). These areas may be restored with coastal sage scrub vegetation, including both host plant species, in order to enhance habitat for the butterfly in the future.
DANAIDAE *Danaus plexippus*	MILKWEED BUTTERFLIES Monarch butterfly	*	High. Suitable winter roost sites occur throughout the Dominguez Watershed. Roosts are generally located in wind-protected tree groves (eucalyptus, monterey pine, cypress), with nectar and water sources nearby. Winter roost sites typically extend along the coast from northern Mendocino to Baja California, Mexico. The monarch butterfly has the potential to overwinter at all sites within the Dominguez Watershed containing mature eucalyptus or other large trees.
CLASS REPTILIA	REPTILES		
PHRYNOSOMATIDAE	HORNED, SAGEBRUSH AND FRINGE-TOED LIZARDS		
Phrynosoma coronatum blainvillei	San Diego horned lizard	CSC	High. This species typically inhabits coastal sage scrub and chaparral in arid and semi-arid climates. Prefers friable, rocky, or shallow sandy soils. The San Diego horned lizard may occur in coastal sage scrub located in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).
CLASS AVES	BIRDS		
PHALACROCORACIDAE	CORMORANTS		
Phalacrocorax auritus (rookery site)	double-crested cormorant	CSC	Low (rookery site) - High (foraging). The California populations of this species typically breeds on the Channel and Coronado Islands. It is typically associated with lakes, streams, and coastal shores. The double-crested cormorant has been observed in Harbor Regional Park, Madrona Marsh, and in the Dominguez Channel near Vermont Ave and Artesia Blvd.

Table 2.4-2. (Continued).

Scientific Name	Common Name	Listing	Potential for Occurrence
CLASS AVES (Continued)	BIRDS		
PELECANIDAE *Pelecanus erythrorhynchos* (nesting colony)	PELICANS American white pelican	CSC	Low (nesting colony) - Moderate (foraging). It typically breeds in northern territories with sporadic breeding in southern California. This species typically inhabits inland lakes as well as salt ponds and marine habitats. They require flat or gently sloping nest-sites with loose soil, which lack shrubs or other obstructions that would impede flight take-off. The American white pelican has been observed foraging in Harbor Regional Park.
Pelecanus occidentalis californicus (nesting colony)	California brown pelican	SE, FE	Low (nesting colony) - High (foraging). This species is typically found in estuarine and marine waters along the California coast. It typically breeds on the Channel Islands. The California brown pelican has been observed foraging in Harbor Regional Park and Madrona Marsh.
TROGLODYTIDAE *Campylorhynchus brunneicapillus couesi*	WRENS coastal cactus wren	CSC	High. This species is an inhabitant of coastal sage scrub and chaparral containing cholla or prickly pear cactus. Suitable nesting habitat is present for the coastal cactus wren in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).
ICTERIDAE *Agelaius tricolor* (nesting)	BLACKBIRDS tricolored blackbird	(FSC)	High (nesting). This species typically breeds near fresh water, preferably in emergent wetland vegetation with tall, dense cattails or bulrush. Suitable nesting habitat is present at both the Harbor Regional Park and Madrona Marsh. This species has been observed nesting at Harbor Regional Park and foraging at Madrona Marsh.
LARIDAE	SKUAS, GULLS, TERNS, SKIMMERS		
Larus californicus (nesting colony)	California gull	CSC	Low (nesting colony) - High (foraging). It typically breeds in northern and inland territories and forages over open water habitats. It consumes a variety of items including insects, aquatic invertebrates, fish, and carrion. The California gull has been observed foraging at Harbor Regional Park and Madrona Marsh.
Sterna antillarum browni (nesting colony)	California least tern	FE, SE	High (nesting colony) - High (foraging). It typically prefers seacoast, estuaries, bays and harbors. The least tern is known to nest on Terminal Island. This species has been observed foraging at Harbor Regional Park and Madrona Marsh.
Sterna elegans (nesting colony)	elegant tern	(FSC), CSC	Low (nesting colony) - High (foraging). This species generally breeds in Mexico and extreme southern California. It typically prefers seacoast, estuaries, bays and harbors. The elegant tern has been observed foraging at Harbor Regional Park and Madrona Marsh.

Table 2.4-2. (Continued).

Scientific Name	Common Name	Listing	Potential for Occurrence
ARDEIDAE	HERONS		
Ardea herodias (rookery)	great blue heron	*	Moderate (rookery) - High (foraging). This species prefers wetland and areas of open water. It feeds mostly on fish, but will also consume aquatic invertebrates, small mammals, reptiles, and amphibians. Suitable nesting habitat is located at many sites within the Dominguez Watershed where tall trees occur. This species has been observed in Harbor Regional Park, Madrona Marsh, and in the Dominguez Channel near Vermont Ave. and Artesia Blvd; however, the great blue heron is sensitive to human disturbances, which may prevent successful rookeries within highly urbanized settings.
Casmerodius albus (rookery)	great egret	*	Moderate (rookery) - High (foraging). This species prefers wetland and areas of open water. It feeds mostly on fish and aquatic invertebrates, but will also consume small mammals, reptiles, and amphibians. This species has been observed in Harbor Regional Park, Madrona Marsh, Dominguez Channel (near Vermont Ave and Artesia Blvd.), JWPCP, and Wilmington Drain. Similar to the great blue heron, suitable nesting habitat is located throughout the Dominguez Watershed where tall trees occur; however, this species requires protection from human disturbances, which may prevent successful rookeries within highly urbanized settings.
Egretta thula (rookery)	snowy egret	(FSC)	High (rookery) - High (foraging). This species is widespread in California along shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow-moving rivers, irrigation ditches, and wet fields. The snowy egret has been observed in Harbor Regional Park, Madrona Marsh, Dominguez Channel (near Vermont Ave. and Artesia Blvd.), and the Wilmington Drain. Suitable nesting habitat is located throughout the Dominguez Watershed.
Nycticorax nycticorax (rookery)	black-crowned night heron	*	High (rookery) - High (foraging). This species typically nests low in trees within densely vegetated marshland habitat. The black-crowned night heron has been observed in Harbor Regional Park (nesting) and Madrona Marsh. Suitable nesting habitat is located throughout the Dominguez Watershed.
Botaurus lentiginosus (nesting)	American bittern	(FSC)	Moderate (nesting) - High (foraging). This species is distributed widely in winter in fresh emergent wetlands. Has been observed at Harbor Regional park and Madrona Marsh.
Ixobrynchus exilis	Least bittern	CSC	High (nesting) – High (foraging). This secretive species is restricted to marshes with emergent vegetation. A small nesting population occurs at Harbor Regional Park in tule-cattail habitat. Suitable nesting habitat is located throughout the Dominguez Watershed.
STRIGIDAE	TRUE OWLS		
Asio otus (nesting)	long-eared owl	CSC	Low (nesting) - Moderate (foraging). This species requires dense riparian vegetation for nesting and is known to use old nests of other birds including crow, hawk, and herons. The long-eared owl has been previously observed in Harbor Regional Park and Madrona Marsh; however, its population has declined range-wide.

Table 2.4-2. (Continued).

Scientific Name	Common Name	Listing	Potential for Occurrence
Speotyto cunicularia (burrow sites)	burrowing owl	(FSC), CSC	Moderate (burrow sites). This species typically nests in old burrows particularly belonging to ground squirrels; however, they may dig their own burrow in soft soil. The burrowing owl has been historically observed within the upland areas of Harbor Regional Park and Madrona Marsh.
THRESKIORNITHIDAE *Plegadis chihi* (rookery)	IBISES white-faced ibis	 (FSC), CSC	 Low (rookery) - Moderate (foraging). This species generally nests in dense marsh vegetation near water. The white-faced ibis has been observed in Harbor Regional Park; however, its population has declined range-wide.
TROCHILIDAE	HUMMINGBIRDS		
Calypte costae (nesting)	Costa's hummingbird	(FSC)	Low (nesting) - Moderate (foraging). They typically nest on sandy beaches near inlets and bays. The individuals that are observed in California most likely nest in coastal Mexico and islands in the Gulf of California. The Costa's hummingbird has been observed in Harbor Regional Park and Madrona Marsh.
Selasphorus sasin (nesting)	Allen's hummingbird	(FSC)	High (nesting) - High (foraging). This species typically nests in a variety of habitats, utilizing trees including eucalyptus, juniper, and willow as well as vines, shrubs, or ferns. Nests are usually placed in shade of overhanging cover. The subspecies *S. s. sedentarius* is a common resident of the Palos Verdes Peninsula. This species has been observed at Machado Lake, and Madrona Marsh. Suitable habitat for this species may occur in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).
ACCIPITRIDAE	HAWKS		
Accipiter cooperii (nesting)	Cooper's hawk	CSC	High (nesting) - High (foraging). This species typically builds nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks, chiefly of open, interrupted or marginal type. The Cooper's hawk has been observed in at the Gardena Willows, Harbor Regional Park (nesting), Madrona Marsh, and Palos Verdes Peninsula. Suitable foraging habitat for this species may occur in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).
Accipiter striatus (nesting)	sharp-shinned hawk	CSC	Low (nesting) - Moderate (foraging). This species is typically found in mixed woodland and nests in ponderosa pine, black oak, and riparian deciduous habitats; however, the complete breeding distribution of this species has not been fully documented. The sharp-shinned hawk has been observed in at the Harbor Regional Park, Madrona Marsh, and Palos Verdes Peninsula. Suitable foraging habitat for this species may occur in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).

Table 2.4-2. (Continued).

Scientific Name	Common Name	Listing	Potential for Occurrence
Elanus leucurus (nesting)	white-tailed kite	(FSC)	High (nesting) - High (foraging). It typically forages in open grasslands, meadow, and marshes. Nesting habitat includes riparian and oak woodland. The white-tailed kite has been previously observed in at the Madrona Marsh (nesting) and Dominguez Channel near Vermont Ave. and Artesia Blvd. Suitable foraging habitat for this species may occur in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).
Circus cyaneus (nesting)	northern harrier	CSC	Low (nesting) - Moderate (foraging). This species typically nests in emergent wetlands or along rivers or lakes. It usually frequents meadows, grasslands, and emergent wetlands. The northern harrier has been observed in at the Harbor Regional Park and Madrona Marsh. Suitable foraging habitat for this species may occur in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).
Pandion haliaetus (nesting)	osprey	CSC	Low (nesting) - Moderate (foraging). This species typically forages over open water habitats. Nests in bare trees, human structures or cliffs. The osprey has been observed in at the Harbor Regional Park and Madrona Marsh.
FALCONIDAE	FALCONS		
Falco columbaris (wintering)	merlin	CSC	Low (nesting) - Moderate (foraging). This species does not usually breed in California. It typically occurs along coastlines, savannahs, woodlands, lakes, and wetlands. The merlin has been observed in at the Harbor Regional Park and Madrona Marsh. Suitable foraging habitat for this species may occur in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).
Falco peregrinus (nesting)	peregrine falcon	SE	Low (nesting) - Moderate (foraging). This species typically nests near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, mounds. The peregrine falcon has been observed in at the Harbor Regional Park and Madrona Marsh.
TYRANNIDAE	TYRANT FLYCATCHERS		
Empidonax traillii / *E. t. extimus* (nesting)	willow flycatcher / southwestern willow flycatcher	SE / FE	Moderate (nesting) - Moderate (foraging). This species typically occurs near thickets of low, dense willows located on the edge of meadows, ponds, or backwaters. The willow flycatcher (southwestern) has been historically observed in at the Harbor Regional Park and Madrona Marsh; however, its population has declined range-wide. Suitable foraging and nesting habitat for this species may occur in the willow woodland areas of the Linden H. Chandler Preserve and Rolling Hills Canyons (SEA 31).

Table 2.4-2. (Continued).

Scientific Name	Common Name	Listing	Potential for Occurrence
Empidonax difficilis (nesting)	Pacific slope flycatcher	(FSC)	Moderate (nesting) - Moderate (foraging). This species requires well-shaded areas within woodlands, forests, and canyons with riparian woodlands nearby. Pacific slope flycatcher has been observed in at the Harbor Regional Park and Madrona Marsh.
MUSCICAPIDAE	KINGLETS, GNATCATCHERS		
Polioptila californica californica (nesting)	coastal California gnatcatcher	FT, CSC	High (nesting) – High (foraging). This species is an inhabitant of coastal sage scrub plant communities. Suitable habitat for this species occurs within the upland areas located in Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).
PARULIDAE	WOOD WARBLERS		
Dendroica petechia brewsteri (nesting)	Yellow warbler	CSC	High (nesting) – High (foraging). This species occurs in riparian woodlands. Requires mature riparian growth for nesting. The yellow warbler has been observed at Machado Lake (nesting) and Madrona Marsh.
Icteria virens	Yellow-breasted chat	CSC	Moderate (nesting) - High (foraging). This species typically inhabits dense thickets near watercourses and willow-riparian areas with a dense understory. The yellow-breasted chat has been observed in at the Machado Lake and Madrona Marsh.
PICIDAE	WOODPECKERS		
Sphyrapicus rubber (nesting)	Red-breasted sapsucker	(FSC)	Low (nesting) - Moderate (foraging). This species prefers mixed deciduous-coniferous woodlands, especially those bordered by riparian areas. Red-breasted sapsucker has been observed at Machado Lake and Madrona Marsh.
LANIIDAE	SHRIKES		
Lanius ludovicianus (nesting)	loggerhead shrike	(FSC), CSC	High (nesting) - High (foraging). This species typically forages in open, brushy areas with scattered shrubs, trees, posts, fences, utility lines, or other perches. The loggerhead shrike has been observed in at the Machado Lake and Madrona Marsh. Suitable foraging habitat for this species may occur in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).
VIREONIDAE	VIREOS		
Vireo bellii pusillus (nesting)	Least bell's vireo	FE, SE	Moderate (nesting) - Moderate (foraging). This species generally occurs in willow woodlands and moist bottomlands. The Least bell's vireo has been historically observed at Machado Lake and Madrona Marsh; however, its population has declined range-wide. Suitable foraging and nesting habitat for this species may occur in the willow woodland areas of the Linden H. Chandler Preserve and Rolling Hills Canyons (SEA 31).

Table 2.4-2. (Continued).

Scientific Name	Common Name	Listing	Potential for Occurrence
CLASS MAMMALIA	MAMMALS		
HETEROMYIDAE *Perognathus longimembris pacificus*	POCKET MICE & KANGAROO RATS Pacific pocket mouse	FE, CSC	Moderate. This species prefers soils of fine alluvial sands near the ocean. Inhabits the narrow coastal plains from the Mexican border north to El Segundo, Los Angeles County. Pacific pocket mouse has been historically observed in several locations within the Dominguez Watershed. Suitable habitat for this species may occur in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).
MURIDAE *Neotoma lepida intermedia*	MICE, RATS, AND VOLES San Diego desert woodrat	CSC	High. This species exists in coastal southern California from San Diego County to San Luis Obispo County. They prefer moderate to dense canopies. They are particularly abundant in rock outcrops, rocky cliffs, and slopes. The San Diego desert woodrat has been observed on the Palos Verdes Peninsula. Suitable habitat for this species may occur in the Linden H. Chandler Preserve, Rolling Hills Canyons (SEA 31), and coastal bluffs along the Palos Verdes Peninsula coastline (SEA 34).

Status Codes

Federal

FE = Federal-listed; Endangered
FT = Federal-listed; Threatened
(FSC) = Federal Species of Concern; not an active term, and is provided for informational purposes only

State

ST = State-listed; Threatened
SE = State-listed; Endangered
SP = Proposed for State Listing
CSC = California Species of Special Concern

* -- Taxa that are biologically rare, very restricted in distribution, declining throughout their range, or at a critical stage in their life cycle when residing in California.
-- Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California.
-- Taxa closely associated with a habitat that is declining in California (e.g., wetlands, riparian, old growth forest).

Potential for Occurrence (PFO)

A = Absent – Results of recent focused surveys were negative for a particular species.
L = Low potential for occurrence – Site is within the known range of the species but habitat on the site is rarely used by the species.
M = Moderate potential for occurrence - Both a historical record exists of the species occurring in the project vicinity and limited or marginal diagnostic habitat requirements associated with the species occurs within the project boundaries.
H = High potential for occurrence - Both a historical record exists of the species in the project area or its immediate vicinity or the site falls within designated critical habitat and the diagnostic habitat requirements strongly associated with the species occur in the project area or its immediate vicinity.
P = Species present - The species was observed in the project area at the time of the survey.

Sources

California Natural Diversity Data Base (CNDDB) 2002, Long Beach, San Pedro, Redondo Beach, Torrance, and Inglewood 7.5-minute quads
Ken Malloy Park Master Plan 2002 (Parsons 2002)

2.4.4 Summary of Biological Resources

Several types of habitats occur within the Dominguez Watershed. The largest is urban land that supports few natural resources. Natural habitats account for only 7 percent of land use and 16 percent of the entire watershed. The largest "natural" habitat is associated with the Los Angeles and Long Beach Harbors. Covering 3,289 hectares (8,128 acres), the marine receiving waters of the watershed support over 70 species of fish, 400 species of invertebrates, and 100 species of birds. Over 200 species of birds use the moderate sized habitats at Madrona Marsh and the Ken Malloy Harbor Regional Park, which includes Machado Lake. Several hundred species also use the canyon habitats located in the Palos Verdes Hills.

To a lesser extent, biological resources use several small, disturbed pocket wetlands scattered throughout the watershed, and retention and detention basins located in the City of Torrance. These biological resources within the Dominguez Watershed are highly fragmented and are impacted by a variety of problems directly related to the surrounding urban environment. Encroachment by human populations, impaired water quality, trash, and frequent vegetation clearing required for flood management purposes impact natural habitats.

Exotic vegetation was observed at most of the sensitive habitat areas, although eradication and restoration efforts were evident at Gardena Willows and Madrona Marsh. A Watershed Master Plan will guide restoration efforts at the Ken Malloy Harbor Regional Park, which suffers from water quality impairments, habitat degradation, and various forms of unregulated human and pet disturbances.

Several stresses also affect habitats within the Dominguez Channel. The most notable impact to biological resources is the channelization of drainages throughout the system, many of which are concrete-lined. The man-made channels provide little value to biological resources. In the Dominguez Channel and Wilmington Drain areas where soft-bottom habitat occurs, the physical effects of channelization limit available habitat and its quality related to altered hydrology, sedimentation, and water quality impairments. These physical changes directly affect biological organisms dependent on aquatic or riparian systems including macroinvertebrates and fishes, aquatic or riparian vegetation, and terrestrial animals such as amphibians, birds, and mammals (Bolton and Shellberg 2001; Riley 1998).

Despite these problems, the habitats within the Dominguez Watershed are extremely valuable for locally occurring wildlife and native plants. In addition, several of the species that live or migrate through the watershed are considered sensitive. Seventeen sensitive plant species, including five that are endangered (California orcutt grass, coastal dunes milk-vetch, Lyon's pentachaeta, Mexican flannelbush, salt marsh bird's beak) have the potential to occur. Thirty-eight sensitive wildlife species, including seven endangered or threatened animals (Palos Verdes blue butterfly, California brown pelican, California least tern, coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, Pacific pocket mouse) have the potential to occur.

Many of the conditions that contribute to the degradation of biological resources within the watershed are difficult to rectify (e.g., channelization associated with the flood control system, urbanization); however, the remnant habitats within the system could be improved and managed to maximize their existing biological potential. Several areas are currently provided some level of protection, notably the Significant Ecological Areas such as the canyons in Rolling Hills and Madrona Marsh. Although grass-roots level support for these important habitats provides some level of restoration, these biological resources would benefit from additional rehabilitation support, primarily the removal of exotic species. A recent

E. Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL

1. Permittees subject to the provisions below are identified in Attachment K, Tables K-4 and K-13.
2. Permittees shall comply with the interim water quality-based effluent limitations listed below, as of the effective date of this Order:
   a. Permittees shall comply with the following interim water quality-based effluent limitations for discharges to Dominguez Channel freshwater during wet weather:
      i. The freshwater toxicity interim water quality-based effluent limitation is 2 TUc. The freshwater interim effluent limitation shall be implemented as a trigger requiring initiation and implementation of the TRE/TIE process as outlined in US EPA's "Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program" (2000).
      ii. Permittees shall comply with the following interim metals water quality-based effluent limitations for discharges to the Dominguez Channel freshwater and Torrance Lateral during wet weather:

Metals	Interim Effluent Limitation Daily Maximum (µg/L)
Total Copper	207.51
Total Lead	122.88
Total Zinc	898.87

   b. Permittees shall comply with the following interim concentration-based water quality-based effluent limitations for pollutant concentrations in the sediment discharged to the Dominguez Channel Estuary and Greater Los Angeles and Long Beach Harbor Waters:

Water Body	Interim Effluent Limitations Daily Maximum (mg/kg sediment)					
	Copper	Lead	Zinc	DDT	PAHs	PCBs
Dominguez Channel Estuary (below Vermont Avenue)	220.0	510.0	789.0	1.727	31.60	1.490
Long Beach Inner Harbor	142.3	50.4	240.6	0.070	4.58	0.060
Los Angeles Inner Harbor	154.1	145.5	362.0	0.341	90.30	2.107
Long Beach Outer Harbor (inside breakwater)	67.3	46.7	150	0.075	4.022	0.248
Los Angeles Outer Harbor (inside breakwater)	104.1	46.7	150	0.097	4.022	0.310
Los Angeles River Estuary	53.0	46.7	183.5	0.254	4.36	0.683
San Pedro Bay Near/Off Shore Zones	76.9	66.6	263.1	0.057	4.022	0.193
Los Angeles Harbor - Cabrillo Marina	367.6	72.6	281.8	0.186	36.12	0.199
Los Angeles Harbor - Consolidated Slip	1470.0	1100.0	1705.0	1.724	386.00	1.920
Los Angeles Harbor - Inner Cabrillo Beach Area	129.7	46.7	163.1	0.145	4.022	0.033
Fish Harbor	558.6	116.5	430.5	40.5	2102.7	36.6

3. Permittees shall comply with the final water quality-based effluent limitations as listed below no later than March 23, 2032, and every year thereafter:

   a. Dominguez Channel Freshwater – Wet Weather

      i. Freshwater Toxicity Effluent Limitation shall not exceed the monthly median of 1 TUc.

      ii. Permittees shall comply with the following final metals water quality-based effluent limitations for discharges to Dominguez Channel and all upstream reaches and tributaries of Dominguez Channel above Vermont Avenue:

Metals	Water Column Mass-Based Final Effluent Limitation Daily Maximum[6] (g/day)
Total Copper	1,300.3
Total Lead	5,733.7
Total Zinc	9,355.5

   b. Torrance Lateral Freshwater and Sediment – Wet Weather

      i. Permittees shall comply with the following final metals water quality-based effluent limitations for discharges to the Torrance Lateral:

Metals	Water Column Effluent Limitation Daily Maximum[7] (unfiltered, µg/L)
Total Copper	9.7
Total Lead	42.7
Total Zinc	69.7

      ii. Permittees shall comply with the following final concentration-based water quality-based effluent limitations for pollutant concentrations in the sediment discharged to the Torrance Lateral:

Metals	Concentration-Based Effluent Limitation Daily Maximum (mg/kg dry)
Total Copper	31.6
Total Lead	35.8
Total Zinc	121

[6] Effluent limitations are based on a hardness of 50 mg/L, and 90th percentile of annual flow rates (62.7 cfs) in Dominguez Channel. Recalculated mass-based effluent limitations using ambient hardness and flow rate at the time of sampling are consistent with the assumptions and requirements of the TMDL. In addition to the effluent limitations above, samples collected during flow conditions less than the 90th percentile of annual flow rates must demonstrate that the acute and chronic hardness dependent water quality criteria provided in the California Toxics Rule (CTR) are achieved.

[7] Effluent limitations are based on a hardness of 50 mg/L. Recalculated concentration-based effluent limitations using ambient hardness at the time of sampling are consistent with the assumptions and requirements of the TMDL. In addition to the effluent limitations above, samples collected during flow conditions less than the 90th percentile of annual flow rates must demonstrate that the acute and chronic hardness dependent water quality criteria provided in the CTR are achieved.

c. Dominguez Channel Estuary and Greater Los Angeles and Long Beach Harbor Waters

i. Permittees shall comply with the following final mass-based water quality-based effluent limitations, expressed as an annual loading of pollutants in the sediment deposited to Dominguez Channel Estuary, Los Angeles River Estuary, and the Greater Los Angeles and Long Beach Harbor Waters:

Water Body	Final Effluent Limitations Annual (kg/yr)			
	Total Cu	Total Pb	Total Zn	Total PAHs
Dominguez Channel Estuary	22.4	54.2	271.8	0.134
Consolidated Slip	2.73	3.63	28.7	0.0058
Inner Harbor	1.7	34.0	115.9	0.088
Outer Harbor	0.91	26.1	81.5	0.105
Fish Harbor (POLA)	0.00017	0.54	1.62	0.007
Cabrillo Marina (POLA)	0.0196	0.289	0.74	0.00016
San Pedro Bay	20.3	54.7	213.1	1.76
LA River Estuary	35.3	65.7	242.0	2.31

ii. Permittees shall comply with the following final concentration-based water quality-based effluent limitations for pollutant concentrations in the sediments discharged to the Dominguez Channel Estuary, Consolidated Slip, and Fish Harbor:

Water Body	Effluent Limitations Daily Maximum (mg/kg dry sediment)		
	Cadmium	Chromium	Mercury
Dominguez Channel Estuary	1.2	--	--
Consolidated Slip	1.2	81	0.15
Fish Harbor	--	--	0.15

d. Permittees shall comply with the following final mass-based water quality-based effluent limitations, expressed as an annual loading of total DDT and total PCBs in the sediment deposited to Dominguez Channel Estuary, Los Angeles River Estuary, and the Greater Los Angeles and Long Beach Harbor Waters:

Water Body	Final Effluent Limitations Annual (g/yr)	
	Total DDTs	Total PCBs
Dominguez Channel Estuary	0.250	0.207
Consolidated Slip	0.009	0.004
Inner Harbor	0.051	0.059
Outer Harbor	0.005	0.020
Fish Harbor	0.0003	0.0019
Cabrillo Marina	0.000028	0.000025
Inner Cabrillo Beach	0.0001	0.0003
San Pedro Bay	0.049	0.44
LA River Estuary	0.100	0.324

4. Compliance Determination

   a. Permittees shall be deemed in compliance with the interim concentration-based water quality-based effluent limitations for pollutant concentrations in the sediment as listed above in part E.2.b by meeting any one of the following methods:

      i. Demonstrate that the sediment quality condition of *Unimpacted* or *Likely Unimpacted* via the interpretation and integration of multiple lines of evidence as defined in the Sediment Quality Objectives (SQO) Part 1, is met; or

      ii. Meet the interim water quality-based effluent limitations in bed sediment over a three-year averaging period; or

      iii. Meet the interim water quality-based effluent limitations in the discharge over a three-year averaging period.

   b. Permittees shall be deemed in compliance with the final fresh water metals water quality-based effluent limitations for discharges to Dominguez Channel and Torrance Lateral as listed above in parts E.3.a.ii and E.3.b.i by meeting any one of the following methods:

      i. Final metals water quality-based effluent limitations are met; or

      ii. CTR total metals criteria are met instream; or

      iii. CTR total metals criteria are met in the discharge.

   c. Permittees shall be deemed in compliance with the final water quality-based effluent limitations for pollutants in the sediment as listed above in parts E.3.c.i and E.3.c.ii by meeting any one of the following methods:

      i. Final water quality-based effluent limitations for pollutants in the sediment are met; or

      ii. The qualitative sediment condition of *Unimpacted* or *Likely Unimpacted* via the interpretation and integration of multiple lines of evidence as defined in the SQO Part 1, is met, with the exception of chromium, which is not included in the SQO Part 1; or

      iii. Sediment numeric targets are met in bed sediments over a three-year averaging period.

   d. Permittees shall be deemed in compliance with the final water quality-based effluent limitations for total DDT and total PCBs in the sediment as listed above in part E.3.d by meeting any one of the following methods:

      i. Fish tissue targets are met in species resident to the specified water bodies[8]; or

      ii. Final water quality-based effluent limitations for pollutants in the sediment are met; or

[8] A site-specific study to determine resident species shall be submitted to the Regional Water Board Executive Officer for approval.

iii. Sediment numeric targets to protect fish tissue are met in bed sediments over a three-year averaging period; or

iv. Demonstrate that the sediment quality condition protective of fish tissue is achieved per the State Water Board's Statewide Enclosed Bays and Estuaries Plan.

Water Quality Control Plan Los Angeles Region

Chapter: Beneficial Uses

Table 2-1 ~ Table 2-4

Table 2-1. Beneficial Uses of Inland Surface Waters.

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
VENTURA COUNTY COASTAL STREAMS																									
Los Sauces Creek	401.00	P*	I	I	I	I				I	I			I	I				E			I	I		
Poverty Canyon	401.00	P*	I	I	I	I				I	I			I	I				E			I	I		
Madrano Canyon	401.00	P*	I	I	I	I				I	I			I	I				E			I	I		
Javon Canyon	401.00	P*	I	I	I	I				I	I			I	I				E			I	I		E
Padre Juan Canyon	401.00	P*	I	I	I	I				I	I			I	I				E			I	I		
McGrath Lake c	403.11									Ed	Ed	P					E		E		Ee				E
Big Sycamore Canyon Creek	404.47	P*				I				I	I			I	E				E			P	P		E
Little Sycamore Canyon Creek	404.45	P*								I	I			I					E		E		P		
VENTURA RIVER WATERSHED												E													
Ventura River Estuary c	402.10							E		E	E	E		E			E	E	E		Ee	Ef	Ef	E	E
Ventura River	402.10	P*	E		E	E	E			E	E			E	E				E		E	E	E		E
Ventura River	402.20	E	E	E	E	E	E			E	E			E	E				E		Eg	E	E		E
Cañada Larga	402.10	P*		I	I	I	I			I	I			I	I				E			I	I		
Lake Casitas	402.20	E	E	E	E	P	P		P	Ph	E			E	E				E[h]		E				
Lake Casitas tributaries	402.20	E*			P	E				E	E			E	E				E		P	E	E		E
Coyote Creek below dam	402.20	P*				E				P				E	E				E			E	E		E
San Antonio Creek	402.20	E	E	E	E	E				E	E			E	E				E			E	E		E
San Antonio Creek	402.32	E	E	E	E	E	E			E	E			E	E				E			E	E		E
Lion Creek	402.31	I*	I	I	I					I	I			I	I				E						
Reeves Creek	402.32	I*	I	I	I	I				I	I			I	I				E			I	I		
Mirror Lake	402.20	P*				E				P	E			E					E						E
Ojai Wetland	402.20	P*								P	E			E					E						E
Matilija Creek	402.20	P*				E				E	E				E				E			E	E		E
Murietta Canyon Creek	402.20	P*				E				E	E				E				E			E	E		E
North Fork Matilija Creek	402.20	E*	E	E	E	E				E	E			E	E				E		E	E	E		E
Matilija Reservoir	402.20	E			E	E	E			E	E			E	E				E			E	E		E
SANTA CLARA RIVER WATERSHED																									
Santa Clara River Estuary c	403.11							E		E	E	E					E	E	E		Ee	Ef	Ef		E
Santa Clara River	403.11	P*	E	E	E	E	E			E	E			E	E				E		E	E			E
Santa Clara River	403.21	P*	E	E	E	E	E			Ed	E			E					E		E	E			E
Santa Clara River	403.31	P*	E	E	E	E	E			Ed	E			E					E		E	E			E
Santa Clara River	403.41	P*	E	E	E	E	E			E	E			E					E		E	E			E
Santa Clara River	403.51	P*	E	E	E	E	E			E	E			E					E		E				E
Santa Clara River (Soledad Cyn)	403.55	E*	E	E	E	E	E			E	E			E					E		Ei				E
Santa Paula Creek	403.21	P	E	E	E	E	E			E	E			E	E				E		E	E	E		

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required
* Asterixed MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date. (See pages 2-3,4 for more details).

Footnotes are consistent on all beneficial use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries
Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.

c Coastal waterbodies which are also listed in Coastal Features Table (2-3) or in Wetlands Table (2-4).

d Limited public access precludes full utilization.

e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.

f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.

g Condor refuge.

h Water contact recreational activities prohibited by Casitas MWD.

i Soledad Canyon is the habitat of the Unarmored Three-Spine Stickleback.

Table 2-1. Beneficial Uses of Inland Surface Waters (Continued).

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
SANTA CLARA RIVER WATERSHED (CONT)																									
Sisar Creek	403.21	P	E	P	E	E				E	E			E	E				E		Eg		E		E
Sisar Creek	403.22	P	E	P	E	E				E	E			E	E				E		Eg		E		E
Sespe Creek	403.31	P	E	E	E	E				E	E			E	E				E	E	E	E	E		E
Sespe Creek	403.32	P	E	P	E	E				E	E			E	E				E	E	Eg	E	E		E
Timber Creek	403.32	P*				E				E	E				E				E	E	E	E	E		E
Bear Canyon	403.32	P*				E				E	E			E	P				E	E	E	E	E		E
Trout Creek	403.32	P*				E				E	E			E	E				E		E	E	E		E
Piedra Blanca Creek	403.32	P*				E				E	E				E				E		E	E	E		E
Lion Canyon	403.32	P*				E				E	E			E	E				E			E	E		E
Rose Valley Creek	403.32	P*				E				E	E			E	E				E				E		E
Howard Creek	403.32	P*				E				E	E				E				E	E	E	E	E		E
Tule Creek	403.32	P*				E				P	E				P				E	E	E	E	E		E
Potrero John Creek	403.32	P*				E				E	E				P				E		E	E	E		E
Hopper Creek	403.41	P*	E		E	E	E			E	E			E	E				E		Eg				E
Piru Creek	403.41	P	E	E	E	E	E			E	E			E	E				E		Eg	E	E		E
Piru Creek	403.42	P	E	E	E	E	E			E	E			E	E				E		Eg		E		E
Lake Piru	403.41	P	E	E	E	E	P			E	E			E	E				E		E		E		
Lake Piru	403.42	P	E	E	E	E	P		P	E	E			E	E				E		E		E		
Pyramid Lake	403.42	E	E	E	E	E	P		E	E	E			E	E				E		E				
Cañada de los Alamos	403.43	I*			I	I	I			I	I			I	I				E		E				
Gorman Creek	403.43	I*			I	I				I	I			I	I				E		P				
Lockwood Creek	403.42	I*			I	I				I	I			I	I				E						
Lockwood Creek	403.44	I*			I	I	I			I	I			I	I				E						
Tapo Canyon	403.41	P*			P					P	E			E					E						
Castaic Creek	403.51	I	I	I	I	I	I			I	E			I					E		E				
Castaic Lagoon	403.51	E*	E	E	E	E	E			E	E			E					E						
Castaic Lake	403.51	E	E	E	E	E	E		E	E	E			E	I				E		E		E		
Elderberry Forebay	403.51	E	E	E	E	E	E		E	Ek	E			E					E		E		E		
Elizabeth Lake Canyon	403.51	I	I	I	I	I	I			I	E			I					E						
San Francisquito Canyon 1	403.51	I	I	I	I	I	I			I	I			I					E		E		I		E
South Fork (Santa Clara River)	403.51	I*	I	I	I	I	I			I	I			I					E						
Drinkwater Reservoir	403.51	P*				E				Pk	E			P					E		E				E
Bouquet Canyon	403.51	E I	EI	PI	P I	E	P			Em	E			E	E				E				P		E
Bouquet Canyon	403.52	P	P	P	E	E	P			Em	E			E	E				E		E				E
Dry Canyon Creek	403.51	I	I	I	I	I	I			I	I			I					E						
Dry Canyon Reservoir j	403.51	E	E	E	E	P	P		P	Pk	E			E					E						
Bouquet Reservoir	403.52	E	E	E	E	E	E		P	Pk	E			E					E						

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required
* Asterixed MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date. (See pages 2-3,4 for more details).

Footnotes are consistent on all beneficial use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries. Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.

g Condor refuge.

j Out of service.

k Public access to reservoir and its surrounding watershed is prohibited by Los Angeles County Department of Public Works.

l The majority of the reach is intermittent; there is a small area of rising ground water creating perennial flow.

m Access prohibited by Los Angeles County Department of Public Works in the concrete-channelized areas.

Table 2-1. Beneficial Uses of Inland Surface Waters (Continued).

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
SANTA CLARA RIVER WATERSHED (CONT)																									
Mint Canyon Creek	403.51	I	I	I	I	I	I			Im	I			I					E						
Mint Canyon Creek	403.53	I*	I	I	I	I	I			Im	I			I					E						
Agua Dulce Canyon Creek	403.54	I*	I	I	I	I	I			I	I			I					E		E				
Agua Dulce Canyon Creek	403.55	I*			I	I	I			I	I			I					E						
Aliso Canyon Creek	403.55	P*			P	E				E	E			E					E						E
Lake Hughes	403.51	P	P	P	P	P	P			E	E			E					E						
Munz Lake	403.51	P*	P	P	P	E	P			E	E			E					E						
Lake Elizabeth	403.51	P	P	P	P	P	P			E	E			E					E		E				
CALLEGUAS-CONEJO CREEK WATERSHED																									
Mugu Lagoon c	403.11							E		Pn	E	Ed					E	E	Eo	E	Ee,p	Ef	Ef	Ed	E
Calleguas Creek Estuary c	403.11							P		Pn	E	E					E		E		Ee,p	Ef	Ef		E
Calleguas Creek	403.11	P*			E	E	E			E	E			E	E				E		Ep				E
Calleguas Creek	403.12	P*	E	E	E	E				Eq	E			E					E						
Revolon Slough	403.11	P*	P		E	E				Eq	E			E					E						E
Beardsley Wash	403.61	P*					E			E	E			E					E						
Conejo Creek	403.12	P*	E	E	E	E				Eq	E			E					E						
Conejo Creek	403.63	P*				I	I			I	I			I					E				E		
Arroyo Conejo	403.64	P*				I	I			I	I			I					E		E				
Arroyo Conejo	403.68	P*				I	I			I	I			I					E						
Arroyo Santa Rosa	403.63	P*				I	I			I	I			I					E						
Arroyo Santa Rosa	403.65	P*				I	I			I	I			I					E						
North Fork Arroyo Conejo	403.64	P*			E	E				E	E			E					E				E		
Arroyo Las Posas	403.12	P*	P	P	P	E				E	E			E	P				E						
Arroyo Las Posas	403.62	P*	P	P	P	E	E			E	E			E	P				E		E				
Arroyo Simi	403.62	P*	I			I	I			I	I			I					E						
Arroyo Simi	403.67	I*	I			I	I			I	I			I					E						
Tapo Canyon Creek	403.66	I*		P	P	I				I	I			I					E						
Tapo Canyon Creek	403.67	I*		P	P	I				I	I			I					E						
Gillibrand Canyon Creek	403.66	P*				I	I			I	I			I					E						
Gillibrand Canyon Creek	403.67	P*				I				I	I			I					E						
Lake Bard (Wood Ranch Reservoir)	403.67	E	E	E	E	P				Pr	Er			E					E						
LOS ANGELES COUNTY COASTAL STREAMS																									
Arroyo Sequit	404.44	P*				I				E	E			E	E				E		E	E	E		E
San Nicholas Canyon Creek	404.49	P*								I	I			I					E						

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required
* Asterixed MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date. (See pages 2-3,4 for more details).

Footnotes are consistent on all benefical use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.
b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.
c Coastal waterbodies which are also listed in Coastal Features Table (2-3) or in Wetlands Table (2-4).
d Limited public access precludes full utiliazation.
e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.
f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs
m Access prohibited by Los Angeles County DPW in the concrete-channelized areas.
n Area is currently under control of the Navy: swimming is prohibited.
o Marine habitats of the Channel Islands and Mugu Lagoon serve as pinneped haul-out areas for one or more species (i.e., sea lions).
p Habitat of the Clapper Rail.
q Whenever flow conditions are suitable.
r Public access prohibited by Calleguas MWD.

Table 2-1. Benefical Uses of Inland Surface Waters (Continued).

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
LA COUNTY COASTAL STREAMS (CONT)																									
Los Alisos Canyon Creek	404.42	P*								I	I			I					E		E				
Lachusa Canyon Creek	404.42	P*								I	I			I					E						
Encinal Canyon Creek	404.41	P*								I	I			I					E		E				
Trancas Canyon Creek	404.37	E*								Em	E			E					E		E				
Dume Lagoon c	404.36							E		E	E	E					E		E		Ee	Pf	Pf		E
Dume Creek (Zuma Canyon)	404.36	E*								E	E			E	E				E		E	P	P		
Ramirez Canyon Creek	404.35	I*								I	I			I					E				P		
Escondido Canyon Creek	404.34	I*								I	I			I					E		E				
Latigo Canyon Creek	404.33	I*								I	I			I					E		E				
Solstice Canyon Creek	404.32	E*								E	E			E					E			P	P		
Puerco Canyon Creek	404.31	I*								I	I			I					E						
Corral Canyon Creek	404.31	I*								I	I			I					E						
Carbon Canyon Creek	404.16	P*								I	I			I					E						
Las Flores Canyon Creek	404.15	P*								I	I			I					E						
Piedra Gorda Canyon Creek	404.14	P*								I	I			I					E						
Pena Canyon Creek	404.13	P*								I	I			I	E				E						
Tuna Canyon Creek	404.12	P*								I	I			I					E						
Topanga Lagoon c	404.11							E		E	E	E					E		E		Ee	Ef	Ef		E
Topanga Canyon Creek	404.11	P*								I	I			E	E				E			P	I		
Santa Ynez Canyon	405.13	P*								I	E			I					E		E				
Santa Ynez Lake (Lake Shrine)	405.13	P*								Pk	E			E					E						
Santa Monica Canyon Channel	405.13	P*								Ps	I			P					P						
Rustic Canyon Creek	405.13	P*								I	I			I					E						
Sullivan Canyon Creek	405.13	P*								I	I			I					E						
Mandeville Canyon Creek	405.13	P*								I	I			I					E						
Coastal Streams of Palos Verdes Canyon Streams trib. to Coastal	405.11	P*					f			I	I			I					E		E				
Streams of Palos Verdes	405.12	P*					I			I	I			I					E		Et				
Bixby Slough and Harbor Lake	405.12	P*								E	E			E					E		E				E
Los Cerritos Wetlands c	405.15							E		E	E	E					E		E		Ee	Pf	Pf	E	E
Los Cerritos Channel Estuary c	405.12		E					E		Es	E	E					E	E	E		Ee	Ef	Ef	E	
Sims Pond	405.15	P*								P	E			P					E						E
Los Cerritos Channel to Estuary	405.15	P*								P	I			I					E						
Colorado Lagoon	405.12									E	E	E		P					E					E	
Ballona Marsh	405.12									P	E			P					E						E
Stone Canyon Reservoir	405.13	E*	E	E		P				Pk	E			E					E						
Hollywood Reservoir	405.14	E*	E	E		P				Pk	E			E					E						
Franklin Canyon Reservoir	405.14	E*								Pk,u				Pu											
Upper Franklin Canyon Reservoir	405.14	E*	E	E		P				P	E			E					E						E

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P: Potential beneficial use
I: Intermittent beneficial use
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* Asterixed MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date. (See pages 2-3,4 for more details).

Footnotes are consistent on all benefical use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries. Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.

c Coastal waterbodies which are also listed in Coastal Features Table (2-3) or in Wetlands Table (2-4).

e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.

f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.

k Public access to reservoir and its surrounding watershed is prohibited by the Los Angeles Department of Water and Power.

m Access prohibited by Los Angeles County DPW in the concrete-channelized areas.

s Access prohibited by Los Angeles County DPW.

t Rare applies only to Agua Magna Canyon & Sepulveda Canyon areas.

u These reservoirs are covered and thus inaccessible.

Table 2-1. Benefical Uses of Inland Surface Waters (Continued).

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
MALIBU CREEK WATERSHED																									
Malibu Lagoon c	404.21							E		E	E						E	E	E		Ee	Ef	Ef		E
Malibu Creek	404.21	P*								E	E			E	E				E		E	E	E		E
Cold Creek	404.21	P*								E	E				P				E		E		P		E
Las Virgenes Creek	404.22	P*								Em	E			E	P				E		E	P	P		E
Century Reservoir	404.21	P*								E	E			E					E						E
Malibou Lake	404.24	P*						E		E	E			E					E		E				E
Medea Creek	404.23	P*				I				Im	I			I	P				E		E				E
Medea Creek	404.24	I*				I				Em	E			E					E						E
Lindero Creek	404.23	P*								I	I			I					E						
Triunfo Creek	404.24	P*								Im	I			I					E						
Triunfo Creek	404.25	P*				I				Im	I			I					E		E				
Westlake Lake	404.25	P*						E		E	E			E					E						
Potrero Valley Creek	404.25	P*				I				I	I			P					E						
Lake Eleanor Creek	404.25	P*				I				I	I			I					E						
Lake Eleanor	404.25	P*				E				E	E			E					E		E				E
Las Virgenes (Westlake) Reservoir	404.25	E	E	E	E					Pk,v	E			P					E						
Hidden Valley Creek	404.26	I*				I				I	I			I					E						
Lake Sherwood	404.26	P*				E		E		E	E			E					E						E
BALLONA CREEK WATERSHED																									
Ballona Creek Estuary c,w	405.13							E		E	E	E					E	E	E		Ee	Ef	Ef	E	
Ballona Lagoon/ Venice Canals c	405.13							E		E	E	E					E	E	E		Ee	Ef	Ef	E	E
Ballona Wetlands c	405.13									E	E						E		E		Ee	Ef	Ef		E
Del Rey Lagoon c	405.13							E		E	E	E					E		E		Ee	Ef	Ef		E
Ballona Creek to Estuary	405.13	P*								Ps	E			P					P						
Ballona Creek	405.15	P*								Ps	E			P					E						
DOMINGUEZ CHANNEL WATERSHED																									
Dominguez Channel Estuary c,w	405.12							P		Es	E	E					E	E	E		Ee	Ef	Ef		
Dominguez Channel to Estuary	405.12	P*								Ps	E			P					P		E				
LOS ANGELES RIVER WATERSHED																									
Los Angeles River Estuary c,w	405.12		E					E		E	E	E					E	E	E		Ee	Ef	Ef	P	E
Los Angeles River to Estuary	405.12	P*	P	P		E				Es	E			E				E	E		E	P	P	Ps	
Los Angeles River	405.15	P*	P			E				Es	E			E					P						
Los Angeles River	405.21	P*	P			E				E	E			E					E						E
Compton Creek	405.15	P*				E				Es	E			E					E						E

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
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* Asterixed MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date. (See pages 2-3,4 for more details).

Footnotes are consistent on all beneficial use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.

c Coastal waterbodies which are also listed in Coastal Features Table (2-3) or in Wetlands Table (2-4).

e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.

f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.

k Public access to reservoir and its surrounding watershed is prohibited by LADWP.

m Access prohibited by Los Angeles County DPW in the concrete-channelized areas.

v Public water supply reservoir. Owner prohibits public entry.

w These areas are engineered channels. All references to Tidal Prisms in Regional Board documents are functionally equivalent to estuaries.

s Access prohibited by Los Angeles County DPW.

Table 2-1. Benefical Uses of Inland Surface Waters (Continued).

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
LA RIVER WATERSHED (CONTINUED)																									
Rio Hondo below Spreading Grounds	405.15	P*				I				Pm	E			P					I						
Rio Hondo to Spreading Grounds	405.15	P*				I				Im	E			P					I						
Rio Hondo	405.41	P*				I				Im	E			P					I		E				E
Alhambra Wash	405.41	P*				I				Pm	I			P					P		E				
Rubio Wash	405.41	P*				I				Im	I			I					E		P				
Rubio Canyon	405.31	P*				E				I	I			I					E		E				E
Eaton Wash	405.41	P*				I				I	I			I					E						
Eaton Wash (below dam)	405.31	P*				I				Im	I			I					E						
Eaton Wash (above dam)	405.31	P*				I				I	I			I					E						
Eaton Dam and Reservoir	405.31	P*				I				P	Id			I					E						
Eaton Canyon Creek	405.31	P*				E				E	E			E					E		E		E		E
Arcadia Wash (lower)	405.41	P*				I				Pm	I			P					P						
Arcadia Wash (upper)	405.33	P*				I				Pm	I			P					P						
Santa Anita Wash (lower)	405.41	P*				I				Pm	E			P					P		E				
Santa Anita Wash (upper)	405.33	P*				E				Em	E			E					E		E				
Little Santa Anita Canyon Creek	405.33	P*				I				I	I			I					E						
Big Santa Anita Reservoir	405.33	P*				E				Px	E			E	E				E						
Santa Anita Canyon Creek	405.33	E*				E				E	E			E	E				E		E		E		E
Winter Creek	405.33	P*				I				I	E			I					E						E
East Fork Santa Anita Canyon	405.33	P*				E				E	E			E	E				E				E		E
Sawpit Wash	405.41	I				I				Im	I			I					E						
Sawpit Canyon Creek	405.41	P*				I				I	I			I					E		E				
Sawpit Dam And Reservoir	405.41	P*				I				Px	I			I					E						
Monrovia Canyon Creek	405.41	I				I				I	I			I					E						E
Arroyo Seco S. Of Devil's Gates. (L)	405.15	P*								I	I			P					P						
Arroyo Seco S. Of Devil's Gates (U)	405.31	P*								Im	I			P					P		E				
Devil's Gate Reservoir (lower)	405.31	P*				I				Im	I			I					E						
Devil's Gate Reservoir (upper)	405.32	I*				I				I	I			I					E						
Arroyo Seco	405.32	E	E	E		E				Em	E			E	E				E						E
Millard Canyon Creek	405.32	E*	E	E		E				E	E			E					E		E				E
El Prieto Canyon Creek	405.32	I	I	I		I				I	I			I					E						
Little Bear Canyon Creek	405.32	P*				I				I	I			I	I				E						E
Verdugo Wash	405.24	P*				I				Pm	I			P					P						
Halls Canyon Channel	405.24	P*	I	I		I				Im	I			I					E						
Shover Canyon	405.32	I	I	I		I				Im	I			I					E						
Pickens Canyon	405.24	I*				I				Im	I			I					E						
Shields Canyon	405.24	I	I	I		I				Im	I			I					E						

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P: Potential beneficial use
I: Intermittent beneficial use
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Footnotes are consistent on all beneficial use tables.

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Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody.
Any regulatory action would require a detailed analysis of the area.

m Access prohibited by Los Angeles County DPW in concrete-channelized areas.

x Owner prohibits entry.

Table 2-1. Benefical Uses of Inland Surface Waters (Continued).

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
LA RIVER WATERSHED (CONT)																									
Dunsmore Canyon Creek	405.24	I	I	I		I				I	I			I					E						
Burbank Western Channel	405.21	P*								Pm	I			P					P						
La Tuna Canyon Creek	405.21	P*				I				Im	I			I					E						
Tujunga Wash	405.21	P*				I				Pm	I			P	P				P						
Hansen Flood Control Basin & Lakes	405.23	P*				E				E	E			E	E				E		E				
Lopez Canyon Creek	405.21	P*				I				Im	I			I					E						
Little Tujunga Canyon Creek	405.23	P*				I				I	E			I	I				E		E				
Kagel Canyon Creek	405.23	P*				I				Im	I			I					E						
Big Tujunga Canyon Creek	405.23	P*				E				E	E			E	E				E		E		E		E
Upper Big Tujunga Canyon Creek	405.23	P*				E				E	E			I	P				E						E
Haines Canyon Creek	405.23	P*				I				Im	I			I					E		E				
Vasquez Creek	405.23	P*				E				E	E			P	P				E						E
Clear Creek	405.23	P*				E				E	E			E	E				E						E
Big Tujunga Reservoir	405.23	P*				E				Pk	E			E	P				E				E		
Mill Creek	405.23	P*				E				E	E			E	E				E						E
Pacoima Wash	405.21	P*				E				Pm	E			E					E		E				
Pacoima Reservoir	405.22	P*				E				E	E			E					E						
Pacoima Canyon Creek	405.22	P*				E				E	E			E	E				E		E		E		E
Stetson Canyon Creek	405.22	P*				I				Pm	E			P					P						
Wilson Canyon Creek	405.22	P*				I				Em	E			I					E						
May Canyon Creek	405.22	P*				I				I	E			I					E						
Sepulveda Flood Control Basin	405.21	P*				E				E	E			E					E						E
Bull Creek	405.21	P*				I				Im	I			I					E						
Los Angeles Reservoir	405.21	E	E	E		P				Pk	E			E					E		E				
Lower Van Norman Reservoir	405.21	E*	E	E		E				E	E			E					E		E				
Solano Reservoir	405.21	E*								Pk,u				Pu					E						
Caballero Creek	405.21	P*				I				Im	I			I					E						
Aliso Canyon Wash and Creek	405.21	P*				I				Im	I			I					E						
Limekiln Canyon Wash	405.21	P*				I				Im	I			I					E						
Browns Canyon Wash and Creek	405.21	P*				I				Im	I			I					E						
Arroyo Calabasas	405.21	P*								Pm	I			P					P						
McCoy Canyon Creek	405.21	P*				I				I	I			I					E						
Dry Canyon Creek	405.21	P*				I				Im	I			I					E						
Bell Creek	405.21	P*				I				Im	I			I					E						
Chatsworth Reservoir y	405.21	E	E	E						P	E			E					E						
Dayton Canyon Creek	405.21	P*				I				I	I			I					E						

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I: Intermittent beneficial use
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Any regulatory action would require a detailed analysis of the area.

k Public access to reservoir and its surrounding watershed is prohibited by Los Angeles Department of Water and Power.

m Access prohibited by Los Angeles County DPW in concrete-channelized areas.

u This reservoir is covered and thus inaccessible.

y Currently dry and no plans for restoration.

Table 2-1. Benefical Uses of Inland Surface Waters (Continued).

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
LOS ANGELES RIVER WATERSHED (CONT)																									
ISOLATED LAKES AND RESERVOIRS:																									
Eagle Rock Reservoir	405.25	E*								Pk,u				Pu											
Echo Lake	405.15	P*								P	E			P					E						
El Dorado Lakes	405.15	P*								E	E			P					E						E
Elysian Reservoir	405.15	E*	E	E						Pk	E			P					E						
Encino Reservoir	405.21	E*	E	E						Pk	E			P					E						
Ivanhoe Reservoir	405.15	E*	E	E						Pk	E			P					E						
Lincoln Park Lake	405.15	P*								P	E			P					E						
Silver Lake Reservoir	405.15	E*	E	E						Pk	E			P					E						
Toluca Lake	405.21	P*								Pk	E			P					E						
SAN GABRIEL RIVER WATERSHED																									
San Gabriel River Estuary c,w	405.15		E					E		E	E	E					E	E	E		Ee	Ef	Ef	P	
San Gabriel River: Firestone Blvd-Esutary	405.15	P*								Em	E			P					P						
San Gabriel River: Whittier N-Firestone	405.15	P*	P	P		I				Em	E			I					E		E				
San Gabriel River	405.41	P*				I				Im	I			I					E						
San Gabriel River	405.42	E	E	E	E	E				E	E			E	E				E		E				
San Gabriel River: Main Stem z	405.43	E	E	E	E	E				E	E			E	E				E				E		
North Fork San Gabriel River	405.43	For uses please see UPPER SAN GABRIEL TRIBUTARIES below																							
West Fork San Gabriel River	405.43	For uses please see UPPER SAN GABRIEL TRIBUTARIES below																							
East Fork San Gabriel River	405.43	For uses please see UPPER SAN GABRIEL TRIBUTARIES below																							
Coyote Creek to Estuary	405.15	P*	P	P						Pm	I			P					P		E				
Whittier Narrows Flood Control Basin	405.41	P*				E				E	E			E					E		P				
Legg Lake	405.41	P*				E				E	E			E	E				E						E
San Jose Creek	405.41	P*				I				Pm	I			I					E						
San Jose Creek	405.51	P*				I				Pm	I			I					E						
Puente Creek	405.41	P*				I				P	I			P					P						
Thompson Wash	405.52	P*				I				Im	I			I					E						
Thompson Creek	405.53	P*				I				I	I			I					E		E				
Thompson Creek Dam & Reservoir	405.53	P*				I				Px	I			I					E		E				
Walnut Creek Wash	405.41	P*				I				Im	I			I					E						E
Big Dalton Wash	405.41	P*				I				Pm	I			P					P						
Big Dalton Canyon Creek	405.41	P*				I				I	I			I					E						E
Mystic Canyon	405.41	P*				I				I	I			I					E						
Big Dalton Dam & Reservoir	405.41	P*				E				Px	E			E					E						

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required
* Asterixed MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date. (See pages 2-3,4 for more details).

Footnotes are consistent on all beneficial use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries. Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.
b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.
c Coastal waterbodies which are also listed in Coastal Features Table (2-3) or in Wetlands Table (2-4).
e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.
f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.
k Public access to reservoir and its surrounding watershed is prohibited by the Los Angeles Department of Water and Power.
w These areas are engineered channels. All references to Tidal Prisms in Regional Board documents are functionally equivalent to estuaries.
m Access prohibited by Los Angeles County DPW in concrete-channelized areas.
x Owner prohibits entry.
u This reservoir is covered and thus inaccessible.
z Listed twice in this table (see next page).

Table 2-1. Benefical Uses of Inland Surface Waters (Continued).

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
SAN GABRIEL RIVER WATERSHED (CONT)																									
Bell Canyon Creek	405.41	P*				I				I	I			I					E						
Little Dalton Wash	405.41	P*				I				Pm	I			P					P						
Little Dalton Canyon Creek	405.41	P*				I				I	I			I					E						E
San Dimas Wash (lower)	405.41	P*				I				Im	I			I					E		E				
San Dimas Wash (upper)	405.44	P*				E				Im	I			I					E						
San Dimas Dam and Reservoir	405.44	E*				E				Px	E			E	E				E						
San Dimas Canyon Creek	405.44	E*				E				E	E			E	E				E						E
West Fork San Dimas Canyon	405.44	E*				E				E	E			E	P				E						E
Wolfskill Canyon	405.44	E*				E				E	E			E	P				E		E				E
Puddingstone Dam and Reservoir	405.52	E*			E	E				E	E			E	E				E		E				
Puddingstone Wash	405.41	E*				I				Im	I			I					E						
Marshall Creek and Wash	405.41	E*				I				Im	I			I					E						
Marshall Creek and Wash	405.53	E*				I	I			Im	I			I					E		E				E
Live Oak Wash	405.52	E*				I	I			I	I			I					E						
Live Oak Creek And Wash	405.53	E*				I	I			I	I			I					E						
Live Oak Dam and Reservoir	405.53	E*				E	E			E	E			E					E						
Emerald Creek And Wash	405.53	E*				I	I			Im	I			I					E						
Santa Fe Flood Control Basin	405.41	P*				I				P	I			I					E						E
Bradbury Canyon Creek	405.41	P*				I				I	I			I					E						
Spinks Canyon Creek	405.41	P*				I				I	I			I					E						
Maddock Canyon Creek	405.43	P*				I				I	I			I					E						
Van Tassel Canyon	405.43	P*				I				I	I			I					E		E				
Fish Canyon Creek	405.43	P*	I			E				E	E			E					E		E		E		E
Roberts Canyon Creek	405.43	P*				I				I	I			I					E		E				E
Morris Reservoir	405.43	E	E	E	E	E			E	P	E			E	E				E				E		
San Gabriel Reservoir	405.43	E	E	E	E	E			E	E	E			E	E				E						
UPPER SAN GABRIEL RIVER TRIBUTARIES																									
San Gabriel River: Main Stem z	405.43	E	E	E	E	E				E	E			E	E				E						E
Cattle Canyon Creek	405.43	P*				E				E	E			E	E				E		E		E		E
Coldwater Canyon Creek	405.43	P*				E				E	E			E	E				E		E		E		E
Cow Canyon Creek	405.43	P*				E				E	E			E	E				E		E		E		E
East Fork San Gabriel River	405.43	P*				E				E	E			E	E				E		E		E		E
Allison Gulch	405.43	P*				E				E	E			E	E				E				E		E
Fish Fork	405.43	P*				E				E	E			E	E				E				E		E

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required
* Asterixed MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date. (See pages 2-3,4 for more details).

Footnotes are consistent on all benefical use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.

m Access prohibited by Los Angeles County DPW in concrete channelized areas.

x Owner prohibits entry.

z Also listed on previous page.

Table 2-1. Benefical Uses of Inland Surface Waters (Continued).

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
SAN GABRIEL RIVER WATERSHED (CONT)																									
North Fork San Gabriel River	405.43	P*				E				E	E			E	E				E		E		E		E
Bichota Canyon	405.43	P*				E				E	E			E	E				E		P		E		
Coldbrook Creek	405.43	P*				I				I	I			I					E				E		
Cedar Creek	405.43	P*				E				E	E			E	E				E		E		E		E
Crystal Lake	405.43	P*								E	E			E	E				E				E		
Soldier Creek	405.43	P*				I				I	I			I					E				E		
West Fork San Gabriel River	405.43	P*				E				E	E			E	E				E		E		E		E
Bear Creek	405.43	P*				E				E	E			E	E				E		E		E		E
Cogswell Reservoir	405.43	P*				E				E	E			E	E				E				E		
Devils Canyon Creek	405.43	P*				E				E	E			E	E				E				E		E
ISLAND WATERCOURSES																									
Anacapa Island	406.10	P*								P				P					E		E				
San Nicolas Island	406.20	P*								P				P					E		Eaa				
Santa Barbara Island	406.30	P*								E	E			P					E		E				
Santa Catalina Island	406.40	E*				E				E	E			E					E		E				
Middle Ranch System	406.40	P*				E				E	E			E					E		E				
San Clemente Island	406.50	E*				E				E	E			E					E		E				
SAN ANTONIO CREEK WATERSHED ab																									
San Antonio Dam And Reservoir	481.23	E*				E				E	E			E					E						
San Antonio Canyon Creek	481.23	E		E	E	E			E	E	E			E	E				E				E		

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required
* Asterixed MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date. (See pages 2-3,4 for more details).

Footnotes are consistent on all benefical use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries. Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.

aa Habitat of the Channel Island Fox.

ab This watershed is also in Region 8 (801.23).

Table 2-2. Beneficial Uses of Ground Waters.[ac]

DWR [ad] Basin No.	BASIN	MUN	IND	PROC	AGR	AQUA
	PITAS POINT AREA [ae]	E	E	P	E	
4-1	OJAI VALLEY					
	Upper Ojai Valley					
	West of Sulfur Mountain Road	E	E	E	E	
	Central area	E	E	E	E	
	Sisar area	E	E	E	E	
4-2	Lower Ojai Valley					
	West of San Antonio--Senior Canyon Creeks	E	E	E	E	
	East of San Antonio--Senior Canyon Creeks	E	E	E	E	
4-3	VENTURA RIVER VALLEY					
	Upper Ventura	E	E	E	E	
	San Antonio Creek area	E	E	E	E	
	Lower Ventura	P	E	P	E	
	VENTURA CENTRAL [af]					
4-4	Santa Clara--Piru Creek area					
	Upper area (above Lake Piru)	P	E	E	E	
	Lower area east of Piru Creek	E	E	E	E	
	Lower area west of Piru Creek	E	E	E	E	
	Santa Clara--Sespe Creek area					
	Topa Topa (upper Sespe) area	P	E	P	E	
	Fillmore area					
	Pole Creek Fan area	E	E	E	E	
	South side of Santa Clara River	E	E	E	E	
	Remaining Fillmore area	E	E	E	E	E
	Santa Clara-Santa Paula area					
	East of Peck Road	E	E	E	E	
	West of Peck Road	E	E	E	E	
	Oxnard Plain					
	Oxnard Forebay	E	E	E	E	
	Confined aquifers	E	E	E	E	
	Unconfined and perched aquifers	E	P		E	

DWR [ad] Basin No.	BASIN	MUN	IND	PROC	AGR	AQUA
	VENTURA CENTRAL (CONT.)					
4-6	Pleasant Valley					
	Confined aquifers	E	E	E	E	
	Unconfined and perched aquifers	P	E	E	E	
4-7	Arroyo Santa Rosa	E	E	E	E	
4-8	Las Posas Valley					
	South Las Posas area					
	NW of Grimes Cyn Rd. and LA Ave. & Somis Rd.	E	E	E	E	
	E of Grimes Cyn Rd and Hitch Blvd.	E	E	E	E	
	S of LA Ave between Somis Rd and Hitch Blvd.	E	E	E	E	
	Grimes Canyon Rd. and Broadway area	E	E	E	E	
	North Las Posas area	E	E	E	E	
4-5	UPPER SANTA CLARA					
	Acton Valley	E	E	E	E	
	Sierra Pelona Valley (Agua Dulce)	E	E		E	
	Upper Mint Canyon	E	E	E	E	
	Upper Bouquet Canyon	E	P	P	E	
	Green Valley	E	P	P	E	
	Lake Elizabeth-Lake Hughes area	E	P	P	E	
4-4.07	EASTERN SANTA CLARA					
	Santa Clara-Mint Canyon	E	E	E	E	
	South Fork	E	E	E	E	
	Placerita Canyon	E	E	E	E	
	Santa Clara-Bouquet and San Francisquito Canyons	E	E	E	E	
	Castaic Valley	E	E	E	E	
	Saugus Aquifer	E				
4-9	SIMI VALLEY					
	Simi Valley Basin					
	Confined aquifers	E	E	E	E	
	Unconfined aquifers	E	E	E	E	
	Gillibrand Basin	E	E	P	E	
4-10	CONEJO VALLEY	E	E	E	E	

E: Existing beneficial use
P: Potential beneficial use
See pages 2-1 to 2-3 for descriptions of beneficial uses.

Footnotes are consistent for all beneficial use tables.

ac Beneficial uses for ground waters outside of the major basins listed on this table and outlined in Fig. 1-9 have not been specifically listed. However, ground waters outside of the major basins are, in many cases, significant sources of water. Furthermore, ground waters outside of the major basins are either potential or exisitng sources of water for downgradient basins, and as such, beneficial uses in the downgradient basins shall apply to these areas.

ad Basins are numbered according to California Department of Water Resources (DWR) Bulletin No. 118-80 (DWR, 1980).

ae Ground waters in the Pitas Point area (between the lower Ventura River and Rincon Point) are not considered to comprise a major basin and, accordingly, have not been designated a basin number by the DWR or outlined on Fig. 1-9.

af The Santa Clara River Valley (4-4), Pleasant Valley (4-6), Arroyo Santa Rosa Valley (4-7), and Las Posas Valley (4-8) Ground Water Basins have been combined and designated as the Ventura Central Basin (DWR, 1980).

Table 2-2. Beneficial Uses of Ground Waters (Continued). [ac]

DWR Basin No. [ad]	BASIN	MUN	IND	PROC	AGR	AQUA
4-11	LOS ANGELES COASTAL PLAIN					
	Central Basin	E	E	E	E	
	West Coast Basin	E	E	E	E	
	Hollywood Basin	E	E	E	E	
	Santa Monica Basin	E	E	E	E	
4-12	SAN FERNANDO VALLEY					
	Sylmar Basin	E	E	E	E	
	Verdugo Basin	E	E	E	E	
	San Fernando Basin					
	West of Highgway 405	E	E	E	E	
	East of Highway 405 (overall)	E	E	E	E	
	Sunland-Tujunga area [ag]	Eah	E	E	E	
	Foothill area [ag]	E	E	E	E	
	Area encompassing RT-Tujunga-Erwin-					
	N. Hollywood-Whithall-LA/Verdugo-					
	Crystal Springs-Headworks-Glendale/Burbank					
	Well Fields	E	E	E	E	
	Narrows area (below confluence of Verdugo					
	Wash with the Los Angeles River)	E	E	E	E	
	Eagle Rock Basin	E	E	E	E	
4-13	SAN GABRIEL VALLEY					
	Raymond Basin					
	Monk Hill sub-basin	E	E	E	E	
	Santa Anita area	E	E	E	E	
	Pasadena area	E	E	E	E	
	Main San Gabriel Basin					
	Western area [ai]	E	E	E	E	
	Eastern area [ai]	E	E	E	E	
	Puente Basin	E	E	E	E	

DWR Basin No. [ad]	BASIN	MUN	IND	PROC	AGR	AQUA
4-14	UPPER SANTA ANA VALLEY					
8-2aj	Live Oak area	E	E	E	E	
	Claremont Heights area	E	E	E	E	
	Pomona area	E	E	E	E	
	Chino area	E	E	E	E	
	Spadra area	E	E	E	E	
4-15	TIERRA REJADA	E	P	P	E	
4-16	HIDDEN VALLEY	E	P		E	
4-17	LOCKWOOD VALLEY	E	E		E	
4-18	HUNGRY VALLEY AND PEACE VALLEY	E	P	E	E	
4-19	THOUSAND OAKS AREA	E	E	E	E	
4-20	RUSSELL VALLEY					
	Russell Valley	E	P		E	
	Triunfo Canyon area	P	P		E	
	Lindero Canyon area	P	P		E	
	Las Virgenes Canyon area	P	P		E	
4-21	CONEJO-TIERRA REJADA VOLCANIC AREA [ak]	E			E	
	SANTA MONICA MOUNTAINS-SOUTHERN SLOPES [al]					
	Camarillo area	E	P		E	
	Point Dume area	E	P		E	
4-22	Malibu Valley	P	P		E	
	Topanga Canyon area	P	P		E	
	SAN PEDRO CHANNEL ISLANDS [am]					
	Anacapa Island	P	P			
	San Nicolas Island	E	P			
	Santa Catalina Island	E	P		E	
	San Clemente Island	P	P			
	Santa Barbara Island	P	P			

E: Existing beneficial use
P: Potential beneficial use
See pages 2-1 to 2-3 for descriptions of beneficial uses.

Footnotes are consistent for all beneficial use tables.

ac Beneficial uses for ground waters outside of the major basins listed on this table and outlined in Fig. 1-9 have not been specifically listed. However, ground waters outside of the major basins are, in many cases, significant sources of water. Furthermore, ground waters outside of the major basins are either potential or exisitng sources of water for downgradient basins, and as such, beneficial uses in the downgradient basins shall apply to these areas.

ad Basins are numbered according to DWR Bulletin No. 118-80 (DWR, 1980).

ag The category for the Foothill Wells area in the old Basin Plan incorrectly grouped ground water in the Foothill area with ground water in the Sunland-Tujunga area. Accordingly, the new categories, Foothill area and Sunland-Tujunga area, replace the Foothill Wells area.

ah Nitrite pollution in the groundwater of the Sunland-Tujunga area currently precludes direct MUN uses. Since the ground water in this area can be treated or blended (or both), it retains the MUN designation.

ai All of the ground water in the Main San Gabriel Basin is covered by the beneficial uses listed under Main San Gabriel Basin-eastern area and western area. Walnut Creek, Big Dalton Wash and Little Dalton Wash separate the eastern area from the western area (see dashed line on Fig. 2-17). Any ground water upgradient of these areas is subject to downgradient beneficial uses and objectives, as explained in Footnote ac.

aj The border between Regions 4 and 8 crosses the Upper Santa Ana Valley Ground Water Basin.

ak Ground water in the Conejo-Tierra Rejada Volcanic Area occurs primarily in fractured vocanic rocks in the western Santa Monica Mountains and Conejo Mountain areas. These areas have not been delineated on Fig. 1-9.

al With the exception of ground water in Malibu Valley (DWR Basin No. 4-22), ground waters along the southern slopes of the Santa Monica Mountains are not considered to comprise a major basin and accordingly have not been designated a basin number by DWR or outlined on Fig. 1-9.

am DWR has not designated basins for ground waters on the San Pedro Channel Islands.

Table 2-3. Benefical Uses of Coastal Features.

COASTAL FEATURE [a]	Hydro. Unit No.	MUN	IND	PROC	NAV	POW	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET [b]
VENTURA COUNTY COASTAL																				
Nearshore +			E		E		E	E	E				E	E	Ean	Ee	Ef	Ef	E	
Offshore Zone					E		E	E	E				E	E		Ee	Ef	Ef	E	
Rincon Beach	401.00				E		E	E	E				E	E			E		E	
Ventura River Estuary c	402.10				E		E	E	E	E		E	E	E		Ee	Ef	Ef	E	E
Ventura Keys (Marina)	403.11				E		E	E	E				E	E						
Ventura Marina	403.11		E		E		E	E	E				E	E					E	
Santa Clara River Estuary c	403.11				E		E	E	E			E	E	E		Ee	Ef	Ef		E
Mandalay Beach	403.11				E		E	E	E				E	E		Ee			E	
McGrath Lake c	403.11						Ed	Ed	P			E		E		Ee				E
Edison Canal Estuary	403.11		E				Eao	E					E	E		Ee				
Channel Islands Harbor	403.11		E		E		Eap	E	E				E	E						
Mandalay Bay (Marina)	403.11		E		E		Eaq	E					E	E						
Port Hueneme (Harbor)	403.11			E	E		E	E	E				E	E						
Ormond Beach	403.11		E		E	E	E	E	E				E	E		Ee		P	E	
Ormond Beach Wetlands c	403.11						E	E				E		E		Ee				E
Mugu Lagoon c	403.11				E		Pn	E	Ed			E	E	Eo	E	Ee,p	Ef	Ef	Ed	E
Calleguas Creek Estuary c	403.11				P		Pn	E	E			E		E		Ee,p	Ef	Ef		E
LOS ANGELES COUNTY COASTAL																				
Nearshore Zone +			E		E		E	E	E				E	E	Ean	Ee	Ef	Ef	Ear	
Offshore Zone			E		E		E	E	E				E	E		Ee	Ef	Ef	E	
Nicholas Canyon Beach	404.43				E		E	E	E				E	E				P	E	
Trancas Beach	404.37				E		E	E	E				E	E				P	E	
Zuma County (Westward)Beach	404.36				E		E	E	E				E	E				P	Ear	
Dume State Beach	404.36				E		E	E	E				E	E				P	E	
Dume Lagoon c	404.36				E		E	E	E			E		E		Ee	Pf	Pf		E
Escondido Beach	404.34				E		E	E	E				E	E				P	E	
Dan Blocker Memorial (Corral) Beach	404.31				E		E	E	E				E	E				P	E	

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required
\+ Nearshore is defined as the zone bounded by the shoreline and a line 1000 feet from the shoreline or the 30-foot depth contours, whichever is further from the shore line. Longshore extent is from Rincon Creek to the San Gabriel River Estuary.

Footnotes are consistent for all beneficial use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries. Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.
b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.
c Coastal waterbodies which are also listed in Inland Surface Waters Table (2-1) or in Wetlands Table (2-4).
d Limited public access precludes full utilization.
e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.
f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.
n Area is currently under control of the Navy: swimming is prohibited.
o Marine Habitats of the Channel Islands and Mugu Lagoon serve as pinniped haul-out areas for one or more species (i.e., sea lions).
p Habitat of the Clapper Rail.
an Areas of Special Biological Significance (along coast from Latigo Point to Laguna Point) and Big Sycamore Canyon and Abalone Cove Ecological Reserves and Point Fermin Marine Life Refuge.
ao Water contact recreation activites are prohibited by the Southern California Edison Co.
ap Water contact recreational activities are limited to the beach area at the harbor by Marina Authorities.
aq Water contact recreational activities are limited by City of Oxnard to within the easement area of each home.
ar Areas exhibiting large shellfish populations include Malibu, Point Dume, Point Fermin, White Point and Zuma Beach.

Table 2-3. Benefical Uses of Coastal Features (Continued).

COASTAL FEATURE [a]	Hydro. Unit No.	MUN	IND	PROC	NAV	POW	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET [b]
LOS ANGELES COUNTY COASTAL (CONT)																				
Puerco Beach	404.31				E		E	E	E				E	E				P	E	
Amarillo Beach	404.21				E		E	E	E				E	E				P	E	
Malibu Beach	404.21				E		E	E	E				E	E			E	Eas	Ear	
Malibu Lagoon c	404.21				E		E	E				E	E	E		Ee	Ef	Ef		E
Carbon Beach	404.16				E		E	E	E				E	E				P	E	
La Costa Beach	404.16				E		E	E	E				E	E				P	E	
Las Flores Beach	404.15				E		E	E	E				E	E				P	E	
Las Tunas Beach	404.12				E		E	E	E				E	E				P	E	
Topanga Beach	404.11				E		E	E	E				E	E				P	E	
Topanga Lagoon c	405.11				E		E	E	E			E		E		Ee	Ef	Ef		E
Will Rogers State Beach	405.13				E		E	E	E				E	E				P	E	
Santa Monica Beach	405.13				E		E	E	E				E	E			E	Eas	E	
Venice Beach	405.13				E		E	E	E				E	E		E	E	Eas	E	
Marina Del Rey							E													
Harbor	405.13				E		E	E	E				E	E					E	
Public Beach Areas	405.13				E		E	E	E				E	E		E				
All other Areas	405.13				E		P	E	E				E	E		E			E	
Entrance Channel	405.13				E		E	E	E				E	E		E			E	
Ballona Creek Estuary c,w	405.13				E		E	E	E			E	E	E		Ee	Ef	Ef	E	
Ballona Lagoon/Venice Canals c	405.13				E		E	E	E			E	E	E		Ee	Ef	Ef	E	E
Ballona Wetlands c	405.13						E	E				E		E		Ee	Ef	Ef		E
Del Rey Lagoon c	405.13				E		E	E	E			E		E		Ee	Ef	Ef		E
Dockweiler Beach	405.12		E		E		E	E	E				E	E				P		
Manhattan Beach	405.12				E		E	E	E				E	E				P	E	
Hermosa Beach	405.12				E		E	E	E				E	E				Eas	E	
King Harbor	405.12		E		E		E	E	E				E	E		E				
Redondo Beach	405.12		E		E		E	E	E				E	E		E	E	Eas	E	
Torrance Beach	405.12				E		E	E	E				E	E			E	Eas	E	
Point Vicente Beach	405.11				E		E	E	E				E	E				P	E	
Royal Palms Beach	405.11				E		E	E	E				E	E				P	E	

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required

Footnotes are consistent for all beneficial use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries
Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody.
Any regulatory action would require a detailed analysis of the area.

c Coastal waterbodies which are also listed in Inland Surface Waters Table (2-1) or in Wetlands Table (2-4).

e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.

f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development.
This may include migration into areas which are heavily influenced by freshwater inputs.

ar Areas exhibiting large shellfish populations include Malibu, Point Dume, Point Fermin, White Point and Zuma Beach

as Most frequently used grunion spawning beaches. Other beaches may be used as well.

w These areas are engineered channels. All references to Tidal Prisms in Regional Board documents are functionally equivalant to estuaries.

Table 2-3. Benefical Uses of Coastal Features (Continued).

COASTAL FEATURE [a]	Hydro. Unit No.	MUN	IND	PROC	NAV	POW	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET [b]
LOS ANGELES COUNTY COASTAL (CONT)																				
Whites Point County Beach	405.11				E		E	E	E				E	E				P	E	
Cabrillo Beach	405.12				E		E	E	E				E	E			E	Eas	E	
Los Angeles-Long Beach Harbor																				
Outer Harbor	405.12				E		E	E	E				E			E			P	
Marinas	405.12		E		E		E	E	E				E			E			P	
Public Beach Areas	405.12				E		E	E	E				E	E		E		P	E	
All Other Inner Areas	405.12		E		E		P	E	E				E			Ee			P	
Dominguez Channel Estuary c,w	405.12				P		E	E	E			E	E	E		Ee	Ef	Ef		
Los Angeles River Estuary c,w	405.12		E		E		E	E	E			E	E	E		Ee	Ef	Ef	P	E
Alamitos Bay	405.12		E		E		E	E	E			E	E	E		E			E	E
Los Cerritos Wetlands c	405.15				E		E	E	E			E		E		Ee	Pf	Pf	E	E
Los Cerritos Channel Estuary c	405.12		E		E		E	E	E			E	E	E		Ee	Ef	Ef	E	
San Gabriel River Estuary c,w	405.15		E		E		E	E	E			E	E	E		Ee	Ef	Ef	P	
Long Beach Marina	405.12						P	E	E				E			E			E	
Public Beach Areas	405.12				E		E	E	E				E			E		P		
All other Areas	405.12						P	E	E				E			E			P	
Marine Stadium	405.12						P	E	E				E			E			E	
Long Beach	405.12				E		E	E	E				E	E			E	Eas	E	
ISLANDS: NEARSHORE ZONES+																				
Anacapa Island	406.10				E		E	E	E				E	Eo	Eat	E		P	E	
San Nicolas Island	406.20				E		E	E	E				E	Eo	Eat	E		P	E	
Begg Rock Nearshore Zone	406.20						E	E	E				E	Eo	Eat	E		P	E	
Santa Barbara Island	406.30				E		E	E	E				E	Eo	Eat	E		P	E	
Santa Catalina Island	406.40	P*			E		E	E	E				E	Eo	Eat	E		P	E	
San Clemente Island	406.50				E		E	E	E				E	Eo	Eat	E		P	E	

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required
* Asterixed MUN designations are designated under SB 88-63 and RB-03 Some designations may be considered for exemptions at a later date (See pages 2-3 and 2-4 for more details).
\+ Nearshore is defined as the zone bounded by the shoreline and a line 1000 feet from the shoreline or the 30-foot depth contours, whichever is further from the shore line.

Footnotes are consistent for all beneficial use tables.
a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries. Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.
b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.
c Coastal waterbodies which are also listed in Inland Surface Waters Table (2-1) or in Wetlands Table (2-4).
e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.
f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.
o Marine Habitats of the Channel Islands and Mugu Lagoon serve as pinniped haul-out areas for one or more species (i.e., sea lions).
w These areas are engineered channels. All references to Tidal Prisms in Regional Board documents are functionally equivalant to estuaries.
as Most frequently used grunion spawning beaches. Other beaches may be used as well.
at Areas of Special Biological Significance or ecological reserves.

Table 2-4. Beneficial Uses of Significant Coastal Wetlands *.

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
Ventura River Estuary c	402.10							E		E	E	E		E			E	E	E		Ee	Ef	Ef	E	E
Santa Clara River Estuary c	403.11							E		E	E	E					E	E	E		Ee	Ef	Ef		E
McGrath Lake c	403.11									Ed	Ed	P					E		E		Ee				E
Ormond Beach Wetlands c	403.11									E	E						E		E		Ee				E
Mugu Lagoon c	403.11							E		Pn	E	Ed					E	E	Eo	E	Ee,p	Ef	Ef	Ed	E
Dume Lagoon c	403.36							E		E	E	E					E		E		Ee	Pf	Pf		E
Malibu Lagoon c	404.21							E		E	E						E	E	E		Ee	Ef	Ef		E
Topanga Lagoon c	404.11							E		E	E	E					E		E		Ee	Ef	Ef		E
Ballona Lagoon/Venice Canals c	405.13							E		E	E	E					E	E	E		Ee	Ef	Ef	E	E
Ballona Wetlands c	405.13									E	E						E		E		Ee	Ef	Ef		E
Del Rey Lagoon c	405.12							E		E	E	E					E		E		Ee	Ef	Ef		E
Los Cerritos Wetlands c	405.15							E		E	E	E					E		E		Ee	Pf	Pf	E	E

* This list may not be all inclusive. More areas may be added as information becomes available.

E: Existing beneficial use

P: Potential beneficial use

I: Intermittent beneficial use

E, P, and I shall be protected as required

Footnotes are consistent for all beneficial use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries. Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.

c Coastal waterbodies which are also listed in Inland Surface Waters Table (2-1) or in Coastal Features Table (2-3).

d Limited public access precludes full utilization.

e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.

f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.

n Area is currently under control of the Navy: swimming is prohibited.

o Marine Habitats of the Channel Islands and Mugu Lagoon serve as pinniped haul-out areas for one or more species (i.e., sea lions).

p Habitat of the Clapper Rail.

2. BENEFICIAL USES

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Introduction

Beneficial uses form the cornerstone of water quality protection under the Basin Plan. Once beneficial uses are designated, appropriate water quality objectives can be established and programs that maintain or enhance water quality can be implemented to ensure the protection of beneficial uses. The designated beneficial uses, together with water quality objectives (referred to as criteria in federal regulations), form water quality standards. Such standards are mandated for all waterbodies within the state under the California Water Code. In addition, the federal Clean Water Act mandates standards for all surface waters, including wetlands.

Twenty-four beneficial uses in the Region are identified in this Chapter. These beneficial uses and their definitions were developed by the State and Regional Boards for use in the Regional Board Basin Plans. Three beneficial uses were added since the original 1975 Basin Plans. These new beneficial uses are Aquaculture, Estuarine Habitat, and Wetlands Habitat.

Beneficial uses can be designated for a waterbody in a number of ways. Those beneficial uses that have been attained for a waterbody on, or after, November 28, 1975, must be designated as "existing" in the Basin Plans. Other uses can be designated, whether or not they have been attained on a waterbody, in order to implement either federal or state mandates and goals (such as fishable and swimmable) for regional waters. Beneficial uses of streams that have intermittent flows, as is typical of many streams in southern California, are designated as intermittent. During dry periods, however, shallow ground water or small pools of water can support some beneficial uses associated with intermittent streams; accordingly, such beneficial uses (e.g., wildlife habitat) must be protected throughout the year and are designated "existing." In addition, beneficial uses can be designated as "potential" for several reasons, including:

- implementation of the State Board's policy entitled "Sources of Drinking Water Policy" (State Board Resolution No. 88-63, described in Chapter 5),
- plans to put the water to such future use,
- potential to put the water to such future use,
- designation of a use by the Regional Board as a regional water quality goal, or
- public desire to put the water to such future use.

Beneficial Use Definitions

Beneficial uses for waterbodies in the Los Angeles Region are listed and defined below. The uses are listed in no preferential order.

Municipal and Domestic Supply (MUN)
Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR)
Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

Industrial Process Supply (PROC)
Uses of water for industrial activities that depend primarily on water quality.

Industrial Service Supply (IND)
Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

Ground Water Recharge (GWR)
Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Freshwater Replenishment (FRSH)

Uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).

Navigation (NAV)
Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Hydropower Generation (POW)
Uses of water for hydropower generation.

Water Contact Recreation (REC-1)
Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-contact Water Recreation (REC-2)
Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Commercial and Sport Fishing (COMM)
Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Aquaculture (AQUA)
Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

Warm Freshwater Habitat (WARM)
Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD)
Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Inland Saline Water Habitat (SAL)
Uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish, or wildlife, including invertebrates.

Estuarine Habitat (EST)
Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

Wetland Habitat (WET)
Uses of water that support wetland ecosystems, including, but not limited to, preservation or enhancement of wetland habitats, vegetation, fish, shellfish, or wildlife, and other unique wetland functions which enhance water quality, such as providing flood and erosion control, stream bank stabilization, and filtration and purification of naturally occurring contaminants.

Marine Habitat (MAR)
Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).

Wildlife Habitat (WILD)
Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Preservation of Biological Habitats (BIOL)
Uses of water that support designated areas or habitats, such as **Areas of Special Biological Significance (ASBS),** established refuges, parks, sanctuaries, ecological reserves, or other areas where the preservation or enhancement of natural resources requires special protection.

The following coastal waters have been designated as ASBS in the Los Angeles Region. For detailed descriptions of their boundaries, see the Ocean Plan discussion in Chapter 5, Plans and Policies:

- San Nicolas Island and Begg Rock
- Santa Barbara Island and Anacapa Island
- San Clemente Island
- Mugu Lagoon to Latigo Point

- Santa Catalina Island, Subarea One, Isthmus Cove to Catalina Head
- Santa Catalina Island, Subarea Two, North End of Little Harbor to Ben Weston Point
- Santa Catalina Island, Subarea Three, Farnsworth Bank Ecological Reserve
- Santa Catalina Island, Subarea Four, Binnacle Rock to Jewfish Point

The following areas are designated Ecological Reserves or Refuges:

- Channel Islands National Marine Sanctuary
- Santa Barbara Island Ecological Reserve
- Anacapa Island Ecological Reserve
- Catalina Marine Science Center Marine Life
- Point Fermin Marine Life Refuge
- Farnsworth Bank Ecological Reserve
- Lowers Cove Reserve
- Abalone Cove Ecological Reserve
- Big Sycamore Canyon Ecological Reserve

Rare, Threatened, or Endangered Species (RARE)
Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.

Migration of Aquatic Organisms (MIGR)
Uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.

Spawning, Reproduction, and/or Early Development (SPWN)
Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Shellfish Harvesting (SHELL)
Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.

Beneficial Uses for Specific Waterbodies

Tables 2-1 through 2-4 list the major regional waterbodies and their designated beneficial uses. These tables are organized by waterbody type: (i) inland surface waters (rivers, streams, lakes, and inland wetlands), (ii) ground water, (iii) coastal waters (bays, estuaries, lagoons, harbors, beaches, and ocean waters), and (iv) coastal wetlands. Within Table 2-1 waterbodies are organized by major watersheds. Hydrologic unit, area, and subarea numbers are noted in the surface water tables (2-1, 2-3, and 2-4) as a cross reference to the classification system developed by the California Department of Water Resources. For those surface waterbodies that cross into other hydrologic units, such waterbodies appear more than once in a table. Furthermore, certain coastal waterbodies are duplicated in more than one table for completeness (e.g., many lagoons are listed both in inland surface waters and in coastal features tables). Major groundwater basins are classified in Table 2-2 according to the Department of Water Resources Bulletin No. 118 (1980). A series of maps (Figures 2-1 to 2-22) illustrates regional surface waters, ground waters, and major harbors.

The Regional Board contracted with the California Department of Water Resources for a study of beneficial uses and objectives for the upper Santa Clara River (DWR, 1989) and for another study of the beneficial uses and objectives the Piru, Sespe, and Santa Paula Hydrologic areas of the Santa Clara River (DWR, 1993). In addition, the Regional Board contracted with Dr. Prem Saint of California State University at Fullerton to survey and research beneficial uses of all waterbodies throughout the Region (Saint, et al., 1993a and 1993b). Information from these studies was used to update this Basin Plan.

State Board Resolution No. 88-63 (Sources of Drinking Water) followed by Regional Board Resolution No. 89-03 (Incorporation of Sources of Drinking Water Policy into the Water Quality Control Plans (Basin Plans)) states that " All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic waters supply and should be so designated by the Regional Boards ... [with certain exceptions which must be adopted by the Regional Board]." In adherence with these policies, all inland surface and ground waters have been designated as MUN - presuming at least a potential suitability for such a designation.

These policies allow for Regional Boards to consider the allowance of certain exceptions according to criteria set forth in SB Resolution No. 88-63. While supporting the protection of all waters that may be used as a municipal water supply in the future, the

Regional Board realizes that there may be exceptions to this policy.

In recognition of this fact, the Regional Board will soon implement a detailed review of criteria in the State Sources of Drinking Water policy and identify those waters in the Region that should be excepted from the MUN designation. Such exceptions will be proposed under a special Basin Plan Amendment and will apply exclusively to those waters designated as MUN under SB Res. No. 88-63 and RB Res. No. 89-03.

In the interim, no new effluent limitations will be placed in Waste Discharge Requirements as a results of these designations until the Regional Board adopts this amendment.

The following sections summarize general information regarding beneficial uses designated for the various waterbody types.

Inland Surface Waters

Inland surface waters consist of rivers, streams, lakes, reservoirs, and inland wetlands. Beneficial uses of these inland surface waters and their tributaries (which are graphically represented on Figures 2-1 to 2-10) are designated on Table 2-1.

Beneficial uses of inland surface waters generally include REC-1 (swimmable) and WARM, COLD, SAL, or COMM (fishable), reflecting the goals of the federal Clean Water Act. In addition, inland waters are usually designated as IND, PRO, REC-2, WILD, and are sometimes designated as BIOL and RARE. In a few cases, such as reservoirs used primarily for drinking water, REC-1 uses can be restricted or prohibited by the entities that manage these waters. Many of these reservoirs, however, are designated as potential for REC-1, again reflecting federal goals. Furthermore, many regional streams are primary sources of replenishment for major groundwater basins that supply water for drinking and other uses, and as such must be protected as GWR. Inland surface waters that meet the criteria mandated by the *Sources of Drinking Water Policy* (which became effective when the State Board adopted Resolution No. 88-63 in 1988) are designated MUN. (This policy is reprinted in Chapter 5, Plans and Policies).

Under federal law, all surface waters must have water quality standards designated in the Basin Plans. Most of the inland surface waters in the Region have beneficial uses specifically designated for them. Those waters not specifically listed (generally smaller tributaries) are designated with the same beneficial uses as the streams, lakes, or reservoirs to which they are tributary. This is commonly referred to as the "tributary rule."

Ground Waters

Beneficial uses for regional groundwater basins (Figure 1-9) are designated on Table 2-2. For reference, Figures 2-11 to 2-18 show enlargements of all of the major basins and sub-basins referred to in the ground water beneficial use table (Table 2-2) and the water quality objective table (Table 3-8) in Chapter 3.

Many groundwater basins are designated MUN, reflecting the importance of ground water as a source of drinking water in the Region and as required by the State Board's *Sources of Drinking Water Policy.* Other beneficial uses for ground water are generally IND, PROC, and AGR. Occasionally, ground water is used for other purposes (e.g., ground water pumped for use in aquaculture operations at the Fillmore Fish Hatchery).

Coastal Waters

Coastal waters in the Region include bays, estuaries, lagoons, harbors, beaches, and ocean waters. Beneficial uses for these coastal waters provide habitat for marine life and are used extensively for recreation, boating, shipping, and commercial and sport fishing, and are accordingly designated in Table 2-3. Figures 2-19 to 2-22 show specific sub-areas of some of these coastal waters.

Wetlands

Wetlands include freshwater, estuarine, and saltwater marshes, swamps, mudflats, and riparian areas. As the California Water Code (§13050[e]) defines "waters of the state" to be "any water, surface or underground, including saline waters, within the boundaries of the state," natural wetlands are therefore entitled to the same level of protection as other waters of the state.

Wetlands also are protected under the Clean Water Act, which was enacted to restore and maintain the physical, chemical, and biological integrity of the nation's waters, including wetlands. Regulations developed under the CWA specifically include

wetlands "as waters of the United States" (40 CFR 116.3) and defines them as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Although the definition of wetlands differs widely among federal agencies, both the USEPA and the U.S. Army Corps of Engineers use this definition in administrating the 404 permit program.

Recently, both state and federal wetlands policies have been developed to protect these valuable waters. Executive Order W-59-93 (signed by Governor Pete Wilson on August 23, 1993) established state policy guidelines for wetlands conservation. The primary goal of this policy is to ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage in California. The federal wetlands policy, representing a significant advance in wetlands protection, was unveiled by nine federal agencies on August 24, 1993. This policy represents an agreement that is sensitive to the needs of landowners, more efficient, and provides flexibility in the permit process.

The USEPA has requested that states adopt water quality standards (beneficial uses and objectives) for wetlands as part of their overall effort to protect the nation's water resources. The 1975 Basin Plans identified a number of waters which are known to include wetlands; these wetlands, however, were not specifically identified as such. In this Basin Plan, a wetlands beneficial use category has been added to identify inland waters that support wetland habitat as well as a variety of other beneficial uses. The wetlands habitat definition recognizes the uniqueness of these areas and functions they serve in protecting water quality. Table 2-4 identifies and designates beneficial uses for significant coastal wetlands in the Region. These waterbodies are also included on Tables 2-1 and 2-3. Beneficial uses of wetlands include many of the same uses designated for the rivers, lakes, and coastal waters to which they are adjacent, and include REC-1, REC-2, WARM, COLD, EST, MAR, WET, GWR, COMM, SHELL, MIGR, SPWN, WILD and often RARE or BIOL.

As some wetlands can not be easily identified in southern California because of the hydrologic regime, the Regional Board identifies wetlands using indicators such as hydrology, presence of hydrophytic plants (plants adapted for growth in water), and/or hydric soils (soils saturated for a period of time during the growing season). The Regional Board contracted with Dr. Prem Saint, et al. (1993a and 1993b), to inventory and describe major regional wetlands. Information from this study was used to update this Basin Plan.

2008 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SECTIONS

WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	INTEGRATED REPORT CATEGORY	POLLUTANT *Revelant Notes*	TMDL REQUIREMENT STATUS*	EXPECTED TMDL COMPLETION DATE	DATE USEPA APPROVED TMDL
				Selenium	A	01/01/2021	
Crystal Lake	40543000	3.71 Acres	5	Organic Enrichment/Low Dissolved Oxygen	A	01/01/2019	
Dan Blocker Memorial (Coral) Beach	40431000	2.1 Miles	4A	Coliform Bacteria *(This listing includes the area of the beach at Latigo Beach and Solstice Canyon.)*	B		01/01/2002
Dockweiler Beach	40512000	4.61 Miles	4A	Indicator Bacteria	B		06/19/2003
Dominguez Channel (lined portion above Vermont Ave)	40351000	6.7 Miles	5	Ammonia	A	01/01/2019	
				Copper	A	01/01/2019	
				Diazinon	A	01/01/2021	
				Indicator Bacteria	A	01/01/2007	
				Lead	A	01/01/2019	
				Toxicity	A	01/01/2021	
				Zinc	A	01/01/2019	
Dominguez Channel Estuary (unlined portion below Vermont Ave)	40512000	140 Acres	5	Ammonia	A	01/01/2019	
				Benthic Community Effects	A	01/01/2019	
				Benzo(a)pyrene (3,4-Benzopyrene -7-d)	A	01/01/2019	
				Benzo[a]anthracene	A	01/01/2019	
				Chlordane (tissue)	A	01/01/2019	
				Chrysene (C1-C4)	A	01/01/2019	

Staff Report

Los Angeles Region Integrated Report

Clean Water Act Section 305(b) Report and Section 303(d) List of Impaired Waters

2008 Update

Prepared by
California Regional Water Quality Control Board, Los Angeles Region

July 2009

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1 Executive Summary

This Integrated Report provides the recommendations of the staff of the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) for changes to the Clean Water Act (CWA) Section 303(d) list of impaired waterbodies and provides a draft Clean Water Act Section 305(b) report (Integrated Report). The Integrated Report includes both the list of impaired waterbodies and identified waters which are known to be meeting beneficial uses within the Los Angeles Region.

The Introduction to this Integrated Report provides the context and purpose and an overview of the approach and describes the public process that will be used for adoption of the changes to the 303(d) list and finalization of the Integrated Report. The remainder of the report describes data sources used, the objectives and criteria against which data were compared, the methodology for comparing the available data to the criteria to assess attainment of water quality standards and determine potential 303(d) listings and the methodology used to categorize waterbody segments according to beneficial use support for the 305(b) report. Results are briefly summarized and discussed following descriptions of the methodology.

Recommendations are shown in detail in the appendices. Appendix A shows the public solicitation letters requesting that the public submit any and all available data to support the assessment of water quality in the Region. Appendices B through E provide lists of waterbodies in Integrated Report categories of beneficial use support. Appendix F presents a list of all impairments by waterbody including those waterbodies in Integrated Report categories 4 and 5 (appendices D and E) which is the list referred to as the 303(d) list. Appendix G presents "fact sheets" for each waterbody-pollutant combination that was analyzed for the proposed 303(d) listing decisions. These fact sheets include at least one "Line of Evidence" describing the data and information used as a basis for each proposed decision. Appendix H presents fact sheets for other miscellaneous changes to the 303(d) list. Appendix I provides citations for all of the references used in developing the Integrated Report.

There are 68 proposed new 303(d) listings in 41 waterbodies and 30 proposed de-listings in 19 waterbodies on the Los Angeles Region 303(d) list.

Additions of new impaired waterbodies to the list ('listings') or deletions of no longer impaired waterbodies from the list ('delistings') were constrained by availability of water quality data. Many waterbodies in the Region are not sampled on a regular basis. In addition, identification of waterbodies which are not impaired by pollutants and meet all beneficial uses has also been driven by availability of data.

Regional Board staff reviewed all data available to determine impairment or the absence of impairment but staff focused on developing listing or delisting decisions and factsheets for the update and did not usually develop do-not-list or do-not-delist decisions and factsheets as these decisions would not alter the final 303(d) list.

The Los Angeles Region Integrated Report and updated 303(d) list included in this staff report is being circulated for public comments. Written comments received before June 17, 2009 will be responded to in writing. The reports and the response to comments will then be brought before the Los Angeles Water Board at a public hearing for potential approval. Public testimony will also be heard at the public hearing. After approval by the Los Angeles Water Board, the Integrated Report, including the updated 303(d) list, will be submitted to the State Water Resources Control Board (State Board) for approval along with the other Region's reports. The full State Integrated Report will then be submitted to the USEPA for approval and will then be final.

2 Introduction

The purpose of this report is to identify those surface waters in the Los Angeles Region which are impaired by pollutants or conditions which prevent them from meeting beneficial uses and to identify those waterbodies which data show are meeting beneficial uses.

An important requirement of the Clean Water Act is to identify those waters which are polluted, not meeting established standards and not supporting the uses expected of those waterbodies. With identification is the recognition of the need for action. Appropriate action after identifying a polluted waterbody is generally the development of a Total Maximum Daily Load (TMDL) but, in some cases, may also include permitting actions or prohibiting discharges to the waterbody, taking cleanup actions, or restoration projects.

2.1 Regulatory Process

The Clean Water Act (CWA) requires each State to assess the status of water quality in the State (Section 305(b)), and provide a list of impaired water bodies (Section 303(d)) to the U.S. Environmental Protection Agency (U.S. EPA) every two years. For water quality limited segments included on the 303(d) list, the state is required to develop a Total Maximum Daily Load (TMDL)or take other action to address the impairment.

The last review and update of the State's 303(d) list occurred in 2006. That review was conducted by the State Water Resources Control Board using the State Board's *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List* (Listing Policy) (SWRCB 2004) developed in 2004. The 2006 update was the first review and update to use that policy.

For the 2008 update, each Regional Water Board is conducting their own reviews of new and previous water quality data and updating the assessment and list of impaired waterbodies according to the Listing Policy.

This staff report presents this Regional Board's assessment of the current status of water quality in the Los Angeles Region for water bodies with readily available data, and identifies

the methods and data used to evaluate the water quality. This report proposes additions, deletions, and changes to the 2006 303(d) list. The water quality assessments also result in the identification of water bodies where water quality standards are met or where not enough information is available to accurately assess water quality.

Certain sections of the Integrated Report require public review and approval by the Regional Board and then approval by the State Board. These sections, or categories, are the lists of water quality limited segments whether being addressed by a TMDL or action other than a TMDL or not yet being addressed (Category lists 4 and 5, the 303(d) list). The other sections of the Integrated Report, which are waters supporting beneficial uses and waters with insufficient data (Categories lists 1, 2, and 3), are provided as information and do not require Board action.

After approval by the Los Angeles Water Board, the Integrated Report will be submitted to the State Water Resources Control Board for approval along with the other Region's reports. The results of the water quality assessments will be compiled with other Regional Board reports into a statewide integrated report referred to as the 303(d)/305(b) Integrated Report by the State Board. The statewide list of all the water quality limited segments will require final approval by the USEPA. The US EPA then compiles these assessments into their biennial "National Water Quality Inventory Report" to Congress.

3 Development of the Integrated Report

3.1 Data solicitation

Federal regulation [(40 CFR § 130.7(b)(5)] states that "Each State shall assemble and evaluate all existing and readily available water quality-related data and information" when developing the 303(d) list. On December 4, 2006, Water Board staff solicited the public to submit any and all water quality data to be considered in preparation of the 2008 303(d) list and 305(b) report. This solicitation established a data submittal deadline of February 28, 2007. On January 30, 2007, staff transmitted a notice clarifying that there were no limits on the type or format of data and information that the public could provide to the Water Boards for their assessment. The notices provided to the public can be found in Appendix A of this report.

The Regional Board received 17 submissions in response to the data solicitation. In addition, staff assembled all other available data. Larger databases considered included:

- National Pollutant Discharge Elimination System (NPDES) permitting data from major NPDES discharges. These data included data collected under the Municipal Separate Storm Sewer System (MS4) NPDES permits.

- Surface Water Ambient Monitoring Program (SWAMP) data. SWAMP is a statewide monitoring effort, administered by the State Water Board, designed to assess the conditions of surface waters throughout the state of California. Monitoring is

conducted in SWAMP through the Department of Fish and Game and Regional Boards monitoring contracts.

- Southern California Bight Regional Monitoring (Bight) data. The Southern California Water Research Project (SCCWRP) coordinates the efforts of many participating organization to conduct the Coastal Ecology component of the Bight regional monitoring effort. These surveys seek to determine the spatial extent of contaminant accumulation in marine sediments and assess the effects of this contamination on living marine resources. Coastal Ecology regional monitoring is conducted every five years. More than 60 organizations have participated as partners in the Coastal Ecology portion of SCCWRP's Bight regional monitoring efforts.

3.2 Listing Policy and Evaluation Criteria

The proposed 2008 303(d) list of impaired water bodies in the Los Angeles Region was developed in accordance with the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (State Board Listing Policy) and the Functional Equivalent Document, both adopted by the State Water Resources Control Board in September 2004. The Listing Policy establishes a standardized approach for developing California's section 303(d) list. It outlines an approach that provides the rules for making listing decisions based upon different types of data and establishes a systematic framework for statistical analysis of water quality data.

The Listing Policy also establishes requirements for data quality, data quantity, and administration of the listing process. Decision rules for listing and delisting are provided for: chemical-specific water quality standards; bacterial water quality standards; health advisories; bioaccumulation of chemicals in aquatic life tissues; nuisances such as trash, odor, and foam; nutrients; water and sediment toxicity; adverse biological response; and degradation of aquatic life populations and communities. The listing policy specifies the frequency of exceedance of applicable water quality objectives that is necessary to make a determination that the water is impaired.

Listing and delisting decisions were made in accordance with the listing policy, using all applicable narrative and numeric water quality criteria contained in the Los Angeles Region Basin Plan and in the California and National Toxic Rules.

3.3 Standards Used in the Analysis

Beneficial Uses:
The beneficial uses for waters in the Los Angeles Region are identified in the Los Angeles Regional Water Quality Control Plan (Basin Plan). For consistency with other Regions in California and other States, six "core" beneficial uses were assessed. The designated beneficial uses in the Basin Plans fit within these six "core" beneficial uses categories, which are:

1. Aquatic Life Support
2. Drinking Water Supply
3. Fish Consumption
4. Secondary Contact
5. Shell fishing, and
6. Swimming.

Water Quality Objectives, Criteria and Guidelines:
The water quality objectives and criteria used in the assessments were from existing and available State Policy and Plans and included the following:

- Water Quality Control Plan, Los Angeles Region (Basin Plan)
- Statewide Water Quality Control Plans (e.g., the California Ocean Plan)
- California Toxics Rule (40 CFR 131.38)
- Maximum Contaminant Levels in California Code of Regulations, Title 22.

Narrative water quality objectives were evaluated using evaluation guidelines as allowed by the Listing Policy. When evaluating narrative water quality objectives, staff identified evaluation guidelines that represented standards attainment or beneficial use protection. Depending on the beneficial use and narrative standard, the following were used in the selection of evaluation guidelines:

1. Sediment Quality Guidelines for Marine, Estuarine, and Freshwater Sediments: When applying narrative water or sediment quality criteria, staff used guidelines developed by the U.S. EPA and other government agencies together with findings published in the scientific peer-reviewed literature to interpret data and evaluate the water quality conditions. Sediment quality guidelines published in the peer-reviewed literature or developed by state or federal agencies were used. Acceptable guidelines included selected values (e.g., effects range-median, probable effects level, probable effects concentration), and other sediment quality guidelines. Only those sediment guidelines that were predictive of sediment toxicity were used (i.e., those guidelines that have been shown in published studies to be predictive of sediment toxicity in 50 percent or more of the samples analyzed).

2. Evaluation Guidelines for Protection from the Consumption of Fish and Shellfish: Evaluation guidelines published by USEPA or OEHHA were used.

3. Evaluation Guidelines for Protection of Aquatic Life from Bioaccumulation of Toxic Substances: Evaluation values for the protection of aquatic life published by the National Academy of Science were used.

The State Listing Policy and the use of the same water quality objectives criteria and guidelines ensure that all Regions develop listing or delisting decisions in a consistent manner. Below are three pollutant categories which require some Los Angeles Region-specific elaboration

3.3.1 Indicator bacteria

For indicator bacteria listing decisions, the Los Angeles Region followed the State Listing Policy but used a Los Angeles Region-specific exceedance day approach as outlined below.

Previous iterations of the Los Angeles Region's 303(d) list included impairments for "total coliform," "enterococcus," "viruses (enteric)," "coliform," "beach closures," "swimming restrictions," "high coliform count," "bacteria indicators," and "fecal coliform." In this update, Regional Board staff have begun to categorize these impairments all as "indicator bacteria."

"Indicator bacteria" impairments can include impairments due to any sewage or fecal matter bacterial indicator including total coliform, fecal coliform, *E. coli*, and *enterococcus*.

In this update, Regional Board staff have calculated the frequency of exceedances of standards for indicator bacteria using a exceedance day approach.

Basin Plan
The Los Angeles Region Basin Plan lists bacteria water quality objectives to protect the water contact recreation and non-contact water recreation beneficial uses in marine and fresh water. The marine water objectives for bacteria are also mirrored in the State Water Resources Control Board's Water Quality Control Plan for Ocean Waters of California (Ocean Plan).

Regional Board Resolution **2002-022,** effective on July 15, 2003, to the Basin Plan included Implementation Provisions for Water Contact Recreation Bacteria Objectives which allow a reference system approach. In part, below

> *...In the context of a TMDL, the Regional Board may implement the single sample objectives in fresh and marine waters by using a 'reference system/antidegradation approach' or 'natural sources exclusion approach' as discussed below. ...*
>
> *Under the reference system/antidegradation implementation procedure, a certain frequency of exceedance of the single sample objectives above shall be permitted on the basis of the observed exceedance frequency in the selected reference system or the targeted water body, whichever is less. The reference system/anti-degradation 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.*

Bacterial TMDLs and exceedance days in the Los Angeles Region
All bacterial TMDLs developed in the Los Angeles Region have used the reference system approach and have calculated the number of exceedance days at the reference system to define the reference condition. These TMDLs include the Santa Monica Bay Beaches Dry Weather Bacteria TMDL (effective 2003), the Santa Monica Bay Beaches Wet Weather

Bacteria TMDL (effective 2003), Marina Del Rey Back Basins Bacteria TMDL (effective 2004), Los Angeles Harbor Inner Cabrillo Beach and Main Ship Channel Bacteria TMDL (effective 2005), the Malibu Creek and Lagoon Bacteria TMDL (effective 2006), the Ballona Creek Bacteria TMDL (effective 2007), and the Harbor Beaches of Ventura County (Channel Islands Harbor Beaches) Bacteria TMDL (effective 2008).

With an exceedance day method, all appropriate bacterial indicators (i.e. marine or fresh water indicators) are evaluated in one analysis to determine if the waterbody is impaired as opposed to evaluating each bacterial indicator separately and then considering those two or three evaluations to determine if the waterbody is impaired.

To calculate the number of exceedance days, the number of days during a defined period during which one or more indicator bacteria exceeds the standard is an exceedance day. For example, at a freshwater, REC-1 site, a day in which ***E. coli*** exceeds the standard is one exceedance day, a day in which Fecal Coliform exceeds the standard is one exceedance day and a day in which ***both E. coli*** and Fecal Coliform exceeds the standard is also one exceedance day.

Calculating exceedance days for all applicable indicators may be in some instances a more conservative approach (i.e. more likely to find a waterbody to be impaired) than a straight indicator by indicator approach and therefore is more protective of human health.

The Listing Policy has specific listing factors for bacterial data from coastal beaches. Section 3.3 and of the Listing Policy discuss methodology for listing water bodies. For ***listing*** coastal beaches, "if water quality monitoring was conducted April 1 through October 31 only, a four percent exceedance percentage shall be used" (SWRCB, 2004). The 4% exceedance percentage applies to the null hypothesis for the binomial distribution formula at the bottom of Table 3.2. Section 4.3 of the Listing Policy discuss methodology for ***delisting*** water bodies and does not specifically describe the use of more stringent exceedance percentage for coastal beach water quality monitoring conducted April 1 through October 31 only, though one is inferred. A 19% exceedance percentage was used for water quality monitoring conducted April 1 through October 31 only when assessing delisting status. The 19% exceedance percentage applies to the null hypothesis for the binomial distribution formula at the bottom of Table 4.2. Therefore, for coastal beach datasets in which both year-round monitoring was conducted following by subsequent monitoring from April 1 to October 31 (e.g., year-round from 2000 to 2002 and April 1 to October 31 from 2003 to 2005), the datasets were evaluated in two parts due to differing exceedance percentages for assessing listing and delisting status.

Regional Board staff followed the Listing Policy methodology and exceedance percentages and calculated exceedance days by both single sample exceedances and geometric mean exceedances.

a. Single Sample

The Basin Plan lists four single sample limits for marine waters and two for fresh water. If samples tested for indicator bacteria exceed any of the indicator bacteria limits, a "single sample exceedance day" for indicator bacteria was designated.

b. Geometric Means

The Basin Plan lists three geometric mean bacteria limits for marine waters and two for fresh water. Receiving water data was evaluated based on these numeric limits and the exceedance day approach in a similar manner to single samples. As such, a calendar month approach as opposed to a rolling 30 day sample approach was used to assess geometric mean to maintain sample independence. Two or more samples were used per calendar month for calculating geometric means.

3.3.2 Invasive species

In this update, Regional Board staff propose new listings for invasive species.

Several other Region's 303 (d) lists include listings for "exotic species," which were made in recent listing updates. In the Los Angeles Region there is one listing for "exotic vegetation," a listing made prior to 1998.

Table 3-1 Listings for exotic species in the State 2006 303(d)

	Region	Number of listings	listing	notes
1	North Coast	1	exotic species	european green crab
2	San Francisco Bay	12	exotic species	ballast water
5	Central Valley	10	exotic species	source unknown
4	Los Angeles	1	exotic vegetation	Ballona Creek

For this listing update, Regional Board staff are proposing listings for "invasive species" as opposed to exotic species" Staff prefer not listing for "exotics" or "non-native" because not all exotic or non-native species are invasive or cause loss of beneficial uses and may even support beneficial uses. For example, the Department of Fish and Game has regulations to protect certain non-native species (e.g. striped bass) and mosquito fish are "non-native" but are used as a biological control by most mosquito abatement districts. In fact, in this listing update, The State Board is re-naming the "exotic species" listings as "invasive species" listings to reflect this.

Invasive species is defined as: an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. This definition is taken from United States Executive Order 13112 of February 3, 1999 on Invasive Species (USA, 1999).

However, there are still several issues inherent in listing for such a non-traditional pollutant.

> 1) While certain "biological materials" have been considered pollutants, populations of animals have not been traditionally considered "pollutants." Section 502(6) of the Clean Water Act defines "pollutants" to include "biological materials…*discharged into water*". The courts have interpreted the term "biological materials" to include "invasive" species that might be found in ballast water which is discharged. It is not clear that these Clean Water Act definitions and court interpretations would apply equally to invasive or non-native species that are already established (i.e. non-native species whose populations are not sustained or increased by ongoing discharges) as they would to invasive species that are continuing to be discharged.
>
> 2) Standards have not been written explicitly for invasives.
>
> 3) A 303(d) listing would trigger an obligation by the Regional Board to develop a program to address the "invasive" species impairment. It would be a significant challenge to develop the regulatory program to regulate a population of an established invasive species.

In this 2008 update, Regional Board staff have recommended the new listing of Malibu Creek, Medea Creek, Lindero Creek and Las Virgenes Creek in the Malibu Creek watershed and Solstice Canyon Creek in the Santa Monica Bay watershed as impaired for invasive species, specifically the New Zealand mudsnail. Factsheets for these decisions are included in Appendix G.

Cold Creek, and Triunfo Creek also have mudsnails but are not recommended for listing at this time. Factsheets for these decisions are included in Appendix G.

New Zealand mudsnails, ***Potamopyrgus antipodarum,*** are tiny (3-5 mm), highly invasive aquatic snails. From the Santa Monica Bay Restoration Commission/Santa Monica Baykeeper (2009):

> *In large numbers, these small snails can completely cover a stream bed and wreak havoc on local stream ecosystems. Several studies have documented NZMS [New Zealand Mud Snail] densities in streams at more than 500,000 organisms per square meter. These massive colonies simply outcompete native aquatic invertebrates that the watershed's fish and amphibians rely on for food, disrupting the entire food web. NZMS are easily transported from stream-to-stream by hitchhiking, they attach themselves to shoes (especially waders), equipment (fishing gear, bicycle tires), animals (native and non-native), and even boats. Anything that contacts a stream infested by NZMS will likely become contaminated. New Zealand mudsnails were discovered in Idaho in the mid-1980s, and have since spread to every western state except New Mexico. NZMS were first identified in benthic macroinvertebrate (BMI) samples*

collected in the Malibu Creek watershed in May 2005. Unfortunately, the Malibu Creek watershed samples containing NZMS were not identified until May 2006. NZMS pose a significant danger to streams throughout the Santa Monica Mountains and threaten the many efforts at habitat restoration and protection, particularly those to restore populations of the endangered steelhead trout in this region.

The data available for mudsnails was evaluated by the State Listing Policy, Section 3.10, Trends in Water Quality, using the narrative toxicity standard in the Basin Plan as the criteria. This approach is similar to the approach taken by State Board for listing "exotic species" during the 2006 listing update and is in accordance with the Listing Policy.

For mudsnails in the Los Angeles Region specifically, a waterbody is proposed to be included on the 303(d) list as impaired for invasive species if a negative trend in water quality has been demonstrated and the Aquatic Life Support core beneficial use was not supported. Staff considered a reach to be demonstrating a negative trend in water quality if at least one site in the waterbody exhibited an increase in density of mudsnails (with at least a three years sampled). Staff considered the core beneficial use of Aquatic Life Support not to be supported if at least one site exhibited a medium or high density of mudsnails.

3.3.3 **Biostimulatory Substances- possible future impairment determinations**

In this Integrated Report and 303(d) list update, Regional Board staff have continued to determine impairments and list and de-list decisions for nitrogen compounds as in the past based on Basin Plan nitrogen compound objectives. The Basin Plan contains a specific nitrogen (nitrate nitrite) water quality objective, which is established at 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen. This objective is specifically set to protect drinking water beneficial uses and is consistent with the California Department Public Health nitrate drinking water standard.

This nitrogen water quality objective does not protect waterbodies from impairments related to biostimulatory substances and eutrophication. However, Basin Plan also contains a narrative standard for biostimulatory substances and the Regional Board recognizes the need for a clear approach for determinations of impairment under the biostimulatory substances standard in the Basin Plan.

Previous iterations of the Los Angeles Region's 303(d) list have recognized the need to determine impairment based on biostimulatory substances and eutrophication and have included impairments for 'low DO/org. enrichment,' 'algae,' 'nutrient/(algae),' 'odors, scum,' 'Eutroph,' and 'unnatural scum/foam.' In future updates, Regional Board staff is considering categorizing these impairments all as 'biostimulatory substances' using a Los Angeles Region specific, nutrient concentration/biological response method as described below. In this 2008 list update, however, no "biostimulatory substances" impairments have been included.

The biostimulatory substances water quality objective in the Basin Plan addresses water quality impairments related to nutrient enrichment (eutrophication). The Basin Plan identifies biostimulatory substances as 'nitrogen, phosphorus and other compounds that stimulate growth'. The water quality objective states:

> *Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.*

Eutrophication and nutrient enrichment problems rank as the most widespread water quality problems nationwide; for example, more lake acres are affected by nutrients than any other pollutant or stressor (EPA 2000). Eutrophication is defined by increased nutrient loading to a waterbody and the resulting increased growth of phytoplankton and other aquatic plants. Additionally, other parameters such as decreased dissolved oxygen and water clarity can also indicate eutrophic conditions. Phosphorus and nitrogen are recognized as key nutrients for the growth of phytoplankton, algae, and aquatic plants and are responsible for the eutrophication of surface waters.

A waterbody's biological response to nutrient loading is often what actually impairs beneficial uses. For example, increased nitrogen and phosphorus loading can lead to harmful algal blooms, which impair the beneficial uses of the waterbody. Therefore, it is useful to evaluate potential biostimulatory substance impairments in terms of both nutrient concentrations and biological response indicators. Key biological response indicators include the following:

Low Dissolved Oxygen (DO)
Dramatic Diurnal Variations in DO
Increased pH
Decreased Water Clarity
Increased Chlorophyll a Concentration
Increase Macro and/or Benthic Algal Biomass
Unpleasant Odors, Taste and/or Aesthetics

By evaluating both nutrient concentrations and biological response indicators together, a more direct linkage is made between water quality conditions and beneficial use impairments. This approach provides a more robust water quality assessment.

The Los Angeles Regional Water Board is considering including waterbodies on the State's 303(d) list of impaired waterbodies for biostimulatory substances when both nutrient concentrations and one or more biological response indicators are at levels which characterize eutrophic conditions and/or beneficial uses of the waterbody are impaired.

However, there are many nutrient and biological response indicator criteria that may be reviewed and applied for the purposes of placing a waterbody on the State's 303(d) list. Table 3.1 and 3.2 below present various nutrient concentrations and associated biological

response indicator criteria limits. These criteria are being considered by the Regional Board to assess the biostimulatory substances water quality objective. The sources of these criteria include EPA Nutrient Criteria Technical Guidance Manual, EPA Ambient Water Quality Criteria Recommendations Nutrient Ecoregion III, and California Nutrient Numeric Endpoints. The Regional Board intends to solicit stakeholder comments regarding the criteria presented below for development of the guidelines to be used for listing in future updates of the 303(d) list.

Table 3-2 Rivers and Streams: Nutrient Concentration and Biological Response Indicators Criteria Limits

Potential Criteria to assess Biostimulatory Substances Water Quality Objective

Rivers and Streams

Total Nitrogen (mg/L)	Total Phosphorus (mg/L)	Benthic Algal Biomass (mg/m^2)	Percent Cover	pH	Dissolved Oxygen (mg/L)	Source
0.65	0.09	150	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA National Nutrient Criteria Technical Guidance
0.37	0.022	43.9	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA Nutrient Criteria Recommendations Ecoregion III
0.5	0.03	none	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA Nutrient Criteria Recommendations Ecoregion III: Sub -Ecoregion 6 - Southern and Central CA
0.06	0.002	150	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	Nutrient Numeric Endpoints - Malibu Creek Case Study
0.23	0.02	WARM 150 COLD 100	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	Nutrient Numeric Endpoints - SWRCB Nutrient Screening tools for 303(d) Listing
< 0.295 as SIN*	< 0.026 as SRP**	120	Floating 30% Benthic 60%	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	New Zealand Periphyton Guideline. Barry Biggs, June 2000

*Soluble Inorganic Nitrogen (SIN). **Soluble Reactive Phosphorus (SRP)
Basin Plan Water Quality Objectives are applied for pH and dissolved oxygen

Table 3-3 Lakes: Nutrient Concentration and Biological Response Indicators Criteria Limits

Potential Criteria to assess Biostimulatory Substances Water Quality Objective						
Lakes						
Total Nitrogen (mg/L)	**Total Phosphorus (mg/L)**	**Chlorophyll a (ug/L)**	**Secchi Depth (m)**	**pH**	**Dissolved Oxygen (mg/L)**	**Source**
1	0.1	14	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA National Nutrient Criteria Technical Guidance
0.4	0.017	3.5	2.8	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA Nutrient Criteria Recommendations Ecoregion III
0.51	0.172	24.6	1.9	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	EPA Nutrient Criteria Recommendations Ecoregion III: Sub - Ecoregion 6 - Southern and Central CA
0.84	0.05	20	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	Nutrient Numeric Endpoints - Malibu Creek Case Study
1.2 (summer mean)	0.1 (summer mean)	WARM 10 COLD 5	none	Shall not be < 6.5 or > 8.5 or change 0.5 units from ambient condition due to waste discharge	WARM ≥5 COLD ≥ 6 COLD & SPWN ≥ 7	Nutrient Numeric Endpoints - SWRCB Nutrient Screening tools for 303(d) Listing
Basin Plan Water Quality Objectives are applied for pH and dissolved oxygen						

3.4 Data Analysis

Water Board staff evaluated the submitted data and additional data in accordance with the Listing Policy, taking into account data quality and spatial and temporal representativeness.

LOEs. A determination that a waterbody is impaired by a particular pollutant was dependent on one or more Lines of Evidence (LOE). A Line of Evidence is the specific information for a single pollutant from a single data source in a waterbody. The LOE includes the beneficial use(s) impacted; the pollutant name(s) pertaining to that water segment and data; the water quality objective (WQO), criterion (WQC) or guideline used to assess the data; detailed information specific to that data; how the data was assessed including the type of data, the total number of samples assessed and those samples that exceeded the WQO, WQC or guideline; where and when the data was collected.

Factsheets. The factsheet includes all LOEs developed for a certain pollutant waterbody combination and the resulting listing or delisting decision.

All available data was reviewed by staff. Analyses were documented in Lines of Evidence, factsheets and listing or delisting decisions according to established priorities. All high priority factsheets were completed.

Los Angeles Region Factsheet Development Priorities

1. High Priority

a. factsheets (decision: *list*) for waterbody/pollutant combinations not on the 2006 303(d) list where an examination of the data indicate standards were not met. This factsheet may refer to more than one core beneficial use.

b. factsheets (decision: *de-list*) for waterbody/pollutant combinations on the 2006 303(d) list where an examination of the data indicate standards were met.

c. factsheets (decision: *a core use is being supported*) for waterbody/core use combination where an examination of the data indicate that all standards (for which there are data) are being met for that core use (305(b)). This factsheet may refer to more than one pollutant.

d. factsheets for waterbody/pollutant combinations on the 303(d) list where a TMDL has been completed and approved by EPA (new approved TMDLs since 2006 303(d) list).

2. Medium Priority

a. factsheets (decision *a core use is being supported)* for waterbody/core use combination where a preliminary examination of the data indicate that standards are being met for that core use (305(b)). This factsheet may refer to more than one pollutant. However, there may be a waterbody/pollutant combinations on the list impairing other core uses.

b. factsheets (decision: *clarification*) for waterbody/pollutant combinations where the name of the pollutant has changed (e.g. PAHs to become individual PAHs (e.g. aldrin, fluoranthene)) or it is advisable to make a change in the extent of the waterbody (e.g. one waterbody is broken into two or a the dividing line between two reaches is modified).

c. factsheets (decision: *do not list or do not de-list)* for waterbody/pollutant combinations where there is significant new data (new line of evidence) but a preliminary examination of the data indicate that the list status (listed or not listed) would not change.

3. Low Priority

a. factsheets for waterbody/pollutant combinations where a preliminary examination of the data indicate standards were met (the creation of a "do not list" factsheet where the waterbody is listed for some other waterbody/pollutant combination or a 305(b) supporting factsheet has been completed).

b. factsheets for waterbody/pollutant combinations where the waterbody/pollutant combination is on the 303(d) list for that waterbody/pollutant combination and a preliminary examination of the data indicate standards were not met (the creation of a "do not de-list" factsheet).

c. factsheets for waterbody/pollutant combinations where available data is of insufficient quantity or quality to make assessments.

3.5 Integrated Report Categories

In this report, each assessed waterbody segment was assigned to one of five non-overlapping categories.

First, for each core beneficial use associated with each waterbody segment, a rating of fully supporting, not supporting, or insufficient information was assigned based on the readily available data and the analyses and criteria described, above. Then each assessed water segment was placed into one of five non-overlapping categories of water bodies. These Integrated Report categories are based on the USEPA guidance for states' Integrated Reports, but contain some modifications based on the State Listing Policy. The distribution of waterbodies into these categories may not be representative of the true state of waterbodies in the Los Angles Region due to the availability of water quality data and Regional Board decision development priorities.

Category 1: A water segment that 1) supports a minimum of one Beneficial Use for each Core Beneficial Use that is applicable to the water; and 2) has no other uses impaired. (No appendix to this report has been included for this category since, at this time, the Los Angeles Region has no waterbodies for which data supports that all beneficial uses are being supported.)

Category 2 (Appendix B): A water segment that 1) supports some, but not all, of its beneficial uses; 2) can have other uses that are not assessed or lack sufficient

information to be assessed; 3) cannot have uses are which not supported; and 4) in agreement with the USEPA, may be included in this category with a minimum of one pollutant assessed for one use.

Category 3: (Appendix C): A water segment with water quality information that could not be used for an assessment, for reasons such as: monitoring data have poor quality assurance, not enough samples in a dataset, no existing numerical objective or evaluation guideline, the information alone cannot support an assessment, etc. Waters completely lacking water quality information are considered "not assessed".

Category 4A (Appendix D): A water segment where ALL its 303(d) listings are being addressed; and 2) at least one of those listings is being addressed by a USEPA approved TMDL.

Category 4B: A water segment where ALL its 303(d) listings are being addressed by action(s) other than TMDL(s). (No appendix to this report has been included for this category since, at this time, the Los Angeles Region does not have waterbodies in this category.)

Category 4C: A water segment that is impacted by non-pollutant related cause(s). (No appendix to this report has been included for this category since, at this time, the Los Angeles Region does not have waterbodies in this category.)

Category 5 (Appendix E): A water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for this segment.

3.6 Information Management

All LOEs, factsheets and listing or delisting decisions were entered into the statewide *California Water Quality Assessment (CalWQA) Database.* The CalWQA database stores all LOEs, listing decisions, and beneficial use support ratings for assessed water bodies in California. This database was developed in 2007 for the purpose of storing detailed water quality assessment information. The database is designed so that this information can be easily reevaluated in future assessment updates and can be exported to the USEPA's Assessment Database at the end of each assessment update.

4 Summary of Assessment Results

A full summary of the Los Angeles Region Integrated Report is included as Table 4-1.

Table 4-1 Integrated Report Summary

Integrated Report Category Number	Integrated Report Category definition	Number of waterbodies
1	Waters Supporting All Beneficial Uses	0
2 (Appendix **B**)	Waters Supporting Some Beneficial Uses	26
3 (Appendix C)	Waters With Insufficient Information	23
4 (Appendix D)	Water Quality Limited Segments Addressed	31
5 (Appendix E)	Water Quality Limited Segments not Fully Addressed	158
Total		*238 assessed waterbodies*
(4 and 5) (Appendix F) 303(d) list	*List of All Waterbody Impairments (the updated 303 (d) list)*	*189 waterbodies on the 303(d) list*

Of the waterbodies included in the Integrated Report, a total of 68 new listings are proposed and 30 de-listings are proposed. In addition, in this update, 113 previous listings are now included in the list as 'being addressed by a TMDL' because a USEPA approved TMDL has been completed. A summary of new additions to the Integrated Report is found in Table 4-2. In this Table, decisions to List are shown in three categories. "List" is the decision to include a waterbody/pollutant combination on the 303(d) list for the first time; "List (being addressed by TMDL)" is the decision to move a waterbody/pollutant combination from the 'requires a TMDL" portion of the list to the "being addressed by a TMDL" portion of the list because a USEPA approved TMDL has been completed since the last update to the 303(d) list in 2006; "List (being addressed by action other than TMDL)" is the decision to move a waterbody/pollutant combination from the 'requires a TMDL" portion of the list to the "being addressed by action other than TMDL" portion of the list because another regulatory action(such as a permitted restoration action) is sufficient to address the impairment. Factsheets for all these decisions are found in Appendix G.

Table 4-2 Integrated Report Summary for NEW decisions in 2008 including *delist, do not delist, do not list and list*

New Decision in 2008	Number of waterbodies	Number of waterbody/pollutant combinations
Delist	19	30
Do Not Delist	23	29
Do Not List	50	86
List	41	68
List (being addressed by TMDL)	55	113
List (being addressed by action other than TMDL)	2	3
Total		329

The total number of waterbody/pollutant combinations in the proposed 2008 303(d) list is 829. 448 of these waterbody/pollutant combinations, or 54%, require the completion of a TMDL or other regulatory action to address the impairment. 381 of these waterbody/pollutant combinations, or 46%, are currently being addressed by an EPA approved TMDL or other regulatory action.

This was the first time that the Water Boards have prepared an Integrated 303(d)/305(b) Report under the current Listing Policy and USEPA Integrated Report Guidance and the first time that the Regional Boards have used the CalWQA database. Combining the 303(d) list update with the 305(b) report and using the same database as all other Regions added efficiency and ensured consistency, but provided challenges in terms of workload and project management. While individual assessments for potential 303(d) listings or de-listings provided valuable information for the 305(b) report, creating the overall 305(b) report using 303(d) listing decisions as the primary input also had limitations. Preparing assessment fact sheets at the level of detail required for 303(d) list changes under the Listing Policy limited the amount of data which could be developed in the manner necessary for inclusion in the CalWQA database. In addition, the readily available data are also often biased towards areas with more potential discharges, since these areas are where the bulk of the monitoring activity takes place. For these reasons, the number of waterbody segments in each Integrated Report category is not necessarily a representative sampling of all the waterbodies within the Los Angeles Region. Despite these limitations, this Integrated Report provides the most complete 305(b) report for the Los Angeles Region to date.

5 TMDL Scheduling

As part of its 1996 and 1998 regional water quality assessments, the Regional Board identified over 700 waterbody-pollutant combinations in the Los Angeles Region where TMDLs would be required (LARWQCB, 1996, 1998). A 13-year schedule for development of TMDLs in the Los Angeles Region was established in a consent decree (Heal the Bay Inc., et al. v. Browner, et al. C 98-4825 SBA) (United States District Court, Northern District of California, 1999) approved on March 22, 1999 (USEPA/Heal the Bay Consent Decree).

For the purpose of scheduling TMDL development, the decree combined the over 700 waterbody-pollutant combinations into 92 TMDL analytical units. Proposed de-listings in this report would discharge or partially discharge 12 TMDL analytical units as specified in the USEPA/Heal the Bay Consent Decree between the U.S. EPA and Heal the Bay, Inc. et al. filed on March 22, 1999.

Staff identified the new listings as a low priority, to be started after the USEPA/Heal the Bay Consent Decree commitments are met. A possible exception to this would be if a new listing could be folded into an existing analytical unit without the need for additional resources to develop the resulting TMDL. The assignment of a low priority to these new TMDL analytical units is not a reflection on their importance, but is given because the Regional Board has first prioritized existing USEPA/Heal the Bay Consent Decree commitments before beginning new TMDLs. The maximum time that can elapse between 303(d) listing and TMDL completion is 13 years. Accordingly, staff have assigned all new listings a TMDL completion date of 2021. This does not suggest that all new listings have the same priority, but rather that the factors determining TMDL priorities have not yet been evaluated as part of this listing process.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

LOS ANGELES REGION

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http://www.waterboards.ca.gov/losangeles

ORDER NO. R4-2012-0175
NPDES PERMIT NO. CAS004001

WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) DISCHARGES WITHIN THE COASTAL WATERSHEDS OF LOS ANGELES COUNTY, EXCEPT THOSE DISCHARGES ORIGINATING FROM THE CITY OF LONG BEACH MS4

The municipal discharges of storm water and non-storm water by the Los Angeles County Flood Control District, the County of Los Angeles, and 84 incorporated cities within the coastal watersheds of Los Angeles County with the exception of the City of Long Beach (hereinafter referred to separately as Permittees and jointly as the Dischargers) from the discharge points identified below are subject to waste discharge requirements as set forth in this Order.

I. FACILITY INFORMATION

Table 1. Discharger Information

Dischargers	The Los Angeles County Flood Control District, the County of Los Angeles, and 84 incorporated cities within the coastal watersheds of Los Angeles County with the exception of the City of Long Beach (See Table 4)
Name of Facility	Municipal Separate Storm Sewer Systems (MS4s) within the coastal watersheds of Los Angeles County with the exception of the City of Long Beach MS4
Facility Address	Various (see Table 2)
The U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, Los Angeles Region (Regional Water Board) have classified the Greater Los Angeles County MS4 as a large municipal separate storm sewer system (MS4) pursuant to 40 CFR section 122.26(b)(4) and a major facility pursuant to 40 CFR section 122.2.	

Table 2. Facility Information

Permittee (WDID)	**Contact Information**	
Agoura Hills (*4B190147001*)	**Mailing Address**	30001 Ladyface Court
		Agoura Hills, CA 91301
	Facility Contact, Title, and E-mail	Ken Berkman, City Engineer kberkman@agoura-hills.ca.us

Permittee (WDID)	Contact Information	
Alhambra (*4B190148001*)	**Mailing Address**	111 South First Street
		Alhambra, CA 91801-3796
	Facility Contact and E-mail	David Dolphin ddolphin@cityofalhambra.org
Arcadia (*4B190149001*)	**Mailing Address**	11800 Goldring Road
		Arcadia, CA 91006-5879
	Facility Contact, Title, Phone, and E-mail	Vanessa Hevener, Environmental Services Officer (626) 305-5327 vhevener@ci.arcadia.ca.us
Artesia (*4B190150001*)	**Mailing Address**	18747 Clarkdale Avenue
		Artesia, CA 90701-5899
	Facility Contact, Title, and E-mail	Maria Dadian, Director of Public Works mdadian@cityofartesia.ci.us
Azusa (*4B190151001*)	**Mailing Address**	213 East Foothill Boulevard
		Azusa, CA 91702
	Facility Contact, Title, and E-mail	Carl Hassel, City Engineer chassel@ci.azusa.ca.us
Baldwin Park (*4B190152001*)	**Mailing Address**	14403 East Pacific Avenue
		Baldwin Park, CA 91706-4297
	Facility Contact, Title, and E-mail	David Lopez, Associate Engineer dlopez@baldwinpark.com
Bell (*4B190153001*)	**Mailing Address**	6330 Pine Avenue
		Bell, CA 90201-1291
	Facility Contact, Title, and E-mail	Terri Rodrigue, City Engineer trodrigue@cityofbell.org
Bell Gardens (*4B190139002*)	**Mailing Address**	7100 South Garfield Avenue
		Bell Gardens, CA 90201-3293
	Facility Contact, Title, and Phone	John Oropeza, Director of Public Works (562) 806-7700
Bellflower (*4B190154001*)	**Mailing Address**	16600 Civic Center Drive
		Bellflower, CA 90706-5494
	Facility Contact, Title, and E-mail	Bernie Iniguez, Environmental Services Manager biniguez@bellflower.org
Beverly Hills (*4B190132002*)	**Mailing Address**	455 North Rexford Drive
		Beverly Hills, CA 90210
	Facility Contact, Title, and E-mail	Vincent Chee, Project Civil Engineer kgettler@beverlyhills.org
Bradbury (*4B190155001*)	**Mailing Address**	600 Winston Avenue
		Bradbury, CA 91010-1199
	Facility Contact, Title, and E-mail	Elroy Kiepke, City Engineer mkeith@cityofbradbury.org
Burbank (*4B190101002*)	**Mailing Address**	P.O. Box 6459
		Burbank, CA 91510
	Facility Contact, Title, and E-mail	Bonnie Teaford, Public Works Director bteaford@ci.burbank.ca.us
Calabasas (*4B190157001*)	**Mailing Address**	100 Civic Center Way
		Calabasas, CA 91302-3172
	Facility Contact, Title, and E-mail	Alex Farassati, ESM afarassati@cityofcalabasas.com
Carson (*4B190158001*)	**Mailing Address**	P.O. Box 6234
		Carson, CA 90745
	Facility Contact, Title,	Patricia Elkins, Building Construction Manager

Permittee (WDID)	Contact Information	
	and E-mail	pelkins@carson.ca.us
Cerritos (*4B190159001*)	**Mailing Address**	P.O. Box 3130
		Cerritos, CA 90703-3130
	Facility Contact, Title, and E-mail	Mike O'Grady, Environmental Services mo'grady@cerritos.us
Claremont (*4B190160001*)	**Mailing Address**	207 Harvard Avenue
		Claremont, CA 91711-4719
	Facility Contact, Title, and E-mail	Craig Bradshaw, City Engineer cbradshaw@ci.claremont.ca.us
Commerce (*4B190161001*)	**Mailing Address**	2535 Commerce Way
		Commerce, CA 90040-1487
	Facility Contact and E-mail	Gina Nila gnila@ci.commerce.ca.us
Compton (*4B190162001*)	**Mailing Address**	205 South Willowbrook Avenue
		Compton, CA 90220-3190
	Facility Contact, Title, and Phone	Hien Nguyen, Assistant City Engineer (310) 761-1476
Covina (*4B190163001*)	**Mailing Address**	125 East College Street
		Covina, CA 91723-2199
	Facility Contact, Title, and E-mail	Vivian Castro, Environmental Services Manager vcastro@covinaca.gov
Cudahy (*4B190164001*)	**Mailing Address**	P.O. Box 1007
		Cudahy, CA 90201-6097
	Facility Contact, Title, and E-mail	Hector Rodriguez, City Manager hrodriguez@cityofcudahy.ca.us
Culver City (*4B190165001*)	**Mailing Address**	9770 Culver Boulevard
		Culver City, CA 90232-0507
	Facility Contact, Title, and Phone	Damian Skinner, Manager (310) 253-6421
Diamond Bar (*4B190166001*)	**Mailing Address**	21825 East Copley Drive
		Diamond Bar, CA 91765-4177
	Facility Contact, Title, and E-mail	David Liu, Director of Public Works dliu@diamondbarca.gov
Downey (*4B190167001*)	**Mailing Address**	P.O. Box 7016
		Downey, CA 90241-7016
	Facility Contact , Title, and E-mail	Yvonne Blumberg yblumberg@downeyca.org
Duarte (*4B190168001*)	**Mailing Address**	1600 Huntington Drive
		Duarte, CA 91010-2592
	Facility Contact, Title, and Phone	Steve Esbenshades, Engineering Division Manager (626) 357-7931 ext. 233
El Monte (*4B190169001*)	**Mailing Address**	P.O. Box 6008
		El Monte, CA 91731
	Facility Contact, Title, and Phone	James A Enriquez, Director of Public Works (626) 580-2058
El Segundo (*4B190170001*)	**Mailing Address**	350 Main Street
		El Segundo, CA 90245-3895
	Facility Contact, Title, Phone, and E-mail	Stephanie Katsouleas, Public Works Director (310) 524-2356 skatsouleas@elsegundo.org
Gardena (*4B190118002*)	**Mailing Address**	P.O. Box 47003
		Gardena, CA 90247-3778

Permittee (WDID)	Contact Information	
	Facility Contact, Title, and E-mail	Ron Jackson, Building Maintenance Supervisor jfelix@ci.gardena.ci.us
Glendale (*4B190171001*)	**Mailing Address**	Engineering Section, 633 East Broadway, Room 209
		Glendale, CA 91206-4308
	Facility Contact, Title, and E-mail	Maurice Oillataguerre, Senior Environmental Program Scientist moillataguerre@ci.glendale.ca.us
Glendora (*4B190172001*)	**Mailing Address**	116 East Foothill Boulevard
		Glendora, CA 91741
	Facility Contact, Title, and E-mail	Dave Davies, Deputy Director of Public Works ddavies@ci.glendora.ca.us
Hawaiian Gardens (*4B190173001*)	**Mailing Address**	21815 Pioneer Boulevard
		Hawaiian Gardens, CA 90716
	Facility Contact, Title, and E-mail	Joseph Colombo, Director of Community Development jcolombo@ghcity.org
Hawthorne (*4B190174001*)	**Mailing Address**	4455 West 126th Street
		Hawthorne, CA 90250-4482
	Facility Contact, Title, and E-mail	Arnold Shadbehr, Chief General Service and Public Works ashadbehr@cityofhawthorne.org
Hermosa Beach (*4B190175001*)	**Mailing Address**	1315 Valley Drive
		Hermosa Beach, CA 90254-3884
	Facility Contact, Title, and E-mail	Homayoun Behboodi, Associate Engineer hbehboodi@hermosabch.org
Hidden Hills (*4B190176001*)	**Mailing Address**	6165 Spring Valley Road
		Hidden Hills, CA 91302
	Facility Contact, Title, and Phone	Kimberly Colberts, Environmental Coordinator (310) 257-2004
Huntington Park (*4B190177001*)	**Mailing Address**	6550 Miles Avenue
		Huntington Park, CA 90255
	Facility Contact, Title, and Phone	Craig Melich, City Engineer and City Official (323) 584-6253
Industry (*4B190178001*)	**Mailing Address**	P.O. Box 3366
		Industry, CA 91744-3995
	Facility Contact and Title	Mike Nagaoka, Director of Public Safety
Inglewood (*4B190179001*)	**Mailing Address**	1 W. Manchester Blvd, 3rd Floor
		Inglewood, CA 90301-1750
	Facility Contact, Title, and E-mail	Lauren Amimoto, Senior Administrative Analyst lamimoto@cityofinglewood.org
Irwindale (*4B190180001*)	**Mailing Address**	5050 North Irwindale Avenue
		Irwindale, CA 91706
	Facility Contact, Title, and E-mail	Kwok Tam, Director of Public Works ktam@ci.irwindale.ca.us
La Canada Flintridge (*4B190181001*)	**Mailing Address**	1327 Foothill Boulevard
		La Canada Flintridge, CA 91011-2137
	Facility Contact, Title, and E-mail	Edward G. Hitti, Director of Public Works ehitti@lcf.ca.gov
La Habra Heights (*4B190182001*)	**Mailing Address**	1245 North Hacienda Boulevard
		La Habra Heights, CA 90631-2570
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La Mirada	**Mailing Address**	13700 La Mirada Boulevard

Permittee (WDID)	**Contact Information**	
(*4B190183001*)		La Mirada, CA 90638-0828
	Facility Contact, Title, and E-mail	Steve Forster, Public Works Director sforster@cityoflamirada.org
La Puente (*4B190184001*)	**Mailing Address**	15900 East Marin Street
		La Puente, CA 91744-4788
	Facility Contact, Title, and E-mail	John DiMario, Director of Development Services jdimario@lapuente.org
La Verne (*4B190185001*)	**Mailing Address**	3660 "D" Street
		La Verne, CA 91750-3599
	Facility Contact, Title, and E-mail	Daniel Keesey, Director of Public Works dkeesey@ci.la-verne.ca.us
Lakewood (*4B190186001*)	**Mailing Address**	P.O. Box 158
		Lakewood, CA 90714-0158
	Facility Contact and E-mail	Konya Vivanti kvivanti@lakewoodcity.org
Lawndale (*4B190127002*)	**Mailing Address**	14717 Burin Avenue
		Lawndale, CA 90260
	Facility Contact and Title	Marlene Miyoshi, Senior Administrative Analyst
Lomita (*4B190187001*)	**Mailing Address**	P.O. Box 339
		Lomita, CA 90717-0098
	Facility Contact, Title, and E-mail	Tom A. Odom, City Administrator d.tomita@lomitacity.com
Los Angeles (*4B190188001*)	**Mailing Address**	1149 S. Broadway, 10th Floor
		Los Angeles, CA 90015
	Facility Contact, Title, and Phone	Shahram Kharaghani, Program Manager (213) 485-0587
Lynwood (*4B190189001*)	**Mailing Address**	11330 Bullis Road
		Lynwood, CA 90262-3693
	Facility Contact and Phone	Josef Kekula (310) 603-0220 ext. 287
Malibu (*4B190190001*)	**Mailing Address**	23825 Stuart Ranch Road
		Malibu, CA 90265-4861
	Facility Contact, Title, and E-mail	Jennifer Brown, Environmental Program Analyst jbrown@malibucity.org
Manhattan Beach (*4B190191001*)	**Mailing Address**	1400 Highland Avenue
		Manhattan Beach, CA 90266-4795
	Facility Contact, Title, and Email	Brian Wright, Water Supervisor bwright@citymb.info
Maywood (*4B190192001*)	**Mailing Address**	4319 East Slauson Avenue
		Maywood, CA 90270-2897
	Facility Contact, Title, and Phone	Andre Dupret, Project Manager (323) 562-5721
Monrovia (*4B190193001*)	**Mailing Address**	415 South Ivy Avenue
		Monrovia, CA 91016-2888
	Facility Contact and E-mail	Heather Maloney hmaloney@ci.monrovia.ca.gov
Montebello (*4B190194001*)	**Mailing Address**	1600 West Beverly Boulevard
		Montebello, CA 90640-3970
	Facility Contact and E-mail	Cory Roberts croberts@aaeinc.com
Monterey Park	**Mailing Address**	320 West Newmark Avenue

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(*4B190195001*)		Monterey Park, CA 91754-2896
	Facility Contact, Phone, and E-mail	Amy Ho (626) 307-1383 amho@montereypark.ca.gov John Hunter (Consultant) at jhunter@jhla.net
Norwalk (*4B190196001*)	**Mailing Address**	P.O. Box 1030
		Norwalk, CA 90651-1030
	Facility Contact and Title	Chino Consunji, City Engineer
Palos Verdes Estates (*4B190197001*)	**Mailing Address**	340 Palos Verdes Drive West
		Palos Verdes Estates, CA 90274
	Facility Contact, Title, and E-mail	Allan Rigg, Director of Public Works arigg@pvestates.org
Paramount (*4B190198001*)	**Mailing Address**	16400 Colorado Avenue
		Paramount, CA 90723-5091
	Facility Contact, Title, and E-mail	Chris Cash, Utility and Infrastructure Assistant Director ccash@paramountcity,org
Pasadena (*4B190199001*)	**Mailing Address**	P.O. Box 7115
		Pasadena, CA 91109-7215
	Facility Contact and E-mail	Stephen Walker swalker@cityofpasadena.net
Pico Rivera (*4B190200001*)	**Mailing Address**	P.O. Box 1016
		Pico Rivera, CA 90660-1016
	Facility Contact, Title, and E-mail	Art Cervantes, Director of Public Works acervantes@pico-rivera.org
Pomona (*4B190145003*)	**Mailing Address**	P.O. Box 660
		Pomona, CA 91769-0660
	Facility Contact, Title, and E-mail	Julie Carver, Environmental Programs Coordinator Julie_Carver@ci.pomona.ca.us
Rancho Palos Verdes (*4B190201001*)	**Mailing Address**	30940 Hawthorne Boulevard
		Rancho Palos Verdes, CA 90275
	Facility Contact, Title, and E-mail	Ray Holland, Interim Public Works Director clehr@rpv.com
Redondo Beach (*4B190143002*)	**Mailing Address**	P.O. Box 270
		Redondo Beach, CA 90277-0270
	Facility Contact, Title, and E-mail	Mike Shay, Principal Civil Engineer mshay@redondo.org
Rolling Hills (*4B190202001*)	**Mailing Address**	2 Portuguese Bend Road
		Rolling Hills, CA 90274-5199
	Facility Contact, Title, and E-mail	Greg Grammer, Assistant to the City Manager ggrammer@rollinghillsestatesca.gov
Rolling Hills Estates (*4B190203001*)	**Mailing Address**	4045 Palos Verdes Drive North
		Rolling Hills Estates, CA 90274
	Facility Contact, Title, and E-mail	Greg Grammer, Assistant to the City Manager ggrammer@rollinghillsestatesca.gov
Rosemead (*4B190204001*)	**Mailing Address**	8838 East Valley Boulevard
		Rosemead, CA 91770-1787
	Facility Contact, Title, and Phone	Chris Marcarello, Director of PW (626) 569-2118
San Dimas (*4B190205001*)	**Mailing Address**	245 East Bonita Avenue
		San Dimas, CA 91773-3002
	Facility Contact, Title,	Latoya Cyrus, Environmental Services Coordinator

Permittee (WDID)	Contact Information	
	and E-mail	lcyrus@ci.san-dimas.ca.us
San Fernando (*4B190206001*)	**Mailing Address**	117 Macneil Street
		San Fernando, CA 91340
	Facility Contact, Title, and E-mail	Ron Ruiz, Director of Public Works rruiz@sfcity.org
San Gabriel (*4B190207001*)	**Mailing Address**	425 South Mission Drive
		San Gabriel, CA 91775
	Facility Contact, Title, and Phone	Daren T. Grilley, City Engineer (626) 308-2806 ext. 4631
San Marino (*4B190208001*)	**Mailing Address**	2200 Huntington Drive
		San Marino, CA 91108-2691
	Facility Contact, Title, and E-mail	Chuck Richie, Director of Parks and Public Works crichie@cityofsanmarino.org
Santa Clarita (*4B190117001*)	**Mailing Address**	23920 West Valencia Boulevard, Suite 300
		Santa Clarita, CA 91355
	Facility Contact, Title, and Phone	Travis Lange, Environmental Services Manager (661) 255-4337
Santa Fe Springs (*4B190108003*)	**Mailing Address**	P.O. Box 2120
		Santa Fe Springs, CA 90670-2120
	Facility Contact, Title, and E-mail	Sarina Morales-Choate, Civil Engineer Assistant smorales-choate@santafesprings.org
Santa Monica (*4B190122002*)	**Mailing Address**	1685 Main Street
		Santa Monica, CA 90401-3295
	Facility Contact, Title, and E-mail	Neal Shapiro, Urban Runoff Coordinator nshapiro@smgov.net
Sierra Madre (*4B190209001*)	**Mailing Address**	232 West Sierra Madre Boulevard
		Sierra Madre, CA 91024-2312
	Facility Contact, Title, and Phone	James Carlson, Management Analyst (626) 355-7135 ext. 803
Signal Hill (*4B190210001*)	**Mailing Address**	2175 Cherry Avenue
		Signal Hill, CA 90755
	Facility Contact, Phone, and E-mail	John Hunter (562) 802-7880 jhunter@jlha.net
South El Monte (*4B190211001*)	**Mailing Address**	1415 North Santa Anita Avenue
		South El Monte, CA 91733-3389
	Facility Contact and Phone	Anthony Ybarra, City Manager (626) 579-6540
South Gate (*4B190212001*)	**Mailing Address**	8650 California Avenue
		South Gate, CA 90280
	Facility Contact, Phone, and E-mail	John Hunter (562) 802-7880 jhunter@jlha.net
South Pasadena (*4B190213001*)	**Mailing Address**	1414 Mission Street
		South Pasadena, CA 91030-3298
	Facility Contact, Phone, and E-mail	John Hunter (562) 802-7880 jhunter@jlha.net
Temple City (*4B190214001*)	**Mailing Address**	9701 Las Tunas Drive
		Temple City, CA 91780-2249
	Facility Contact,	Joe Lambert at (626) 285-2171 or

Permittee (WDID)	**Contact Information**	
	Phone, and E-mail	John Hunter at (562) 802-7880/jhunter@jlha.net
Torrance (*4B190215001*)	**Mailing Address**	3031 Torrance Boulevard
		Torrance, CA 90503-5059
	Facility Contact and Title	Leslie Cortez, Senior Administrative Assistant
Vernon (*4B190216001*)	**Mailing Address**	4305 Santa Fe Avenue
		Vernon, CA 90058-1786
	Facility Contact and Phone	Claudia Arellano (323) 583-8811
Walnut (*4B190217001*)	**Mailing Address**	P.O. Box 682
		Walnut, CA 91788
	Facility Contact and Title	Jack Yoshino, Senior Management Assistant
West Covina (*4B190218001*)	**Mailing Address**	P.O. Box 1440
		West Covina, CA 91793-1440
	Facility Contact, Title, and E-mail	Samuel Gutierrez, Engineering Technician sam.gutierrez@westcovina.org
West Hollywood (*4B190219001*)	**Mailing Address**	8300 Santa Monica Boulevard
		West Hollywood, CA 90069-4314
	Facility Contact, Title, and E-mail	Sharon Perlstein, City Engineer sperlstein@weho.org
Westlake Village (*4B190220001*)	**Mailing Address**	31200 Oak Crest Drive
		Westlake Village, CA 91361
	Facility Contact, Title, Phone, and E-mail	Joe Bellomo, Stormwater Program Manager (805) 279-6856 jbellomo@willdan.com
Whittier (*4B190221001*)	**Mailing Address**	13230 Penn Street
		Whittier, CA 90602-1772
	Facility Contact, Title, and E-mail	David Mochizuki, Director of Public Works dmochizuki@cityofwhittier.org
County of Los Angeles (*4B190107099*)	**Mailing Address**	900 South Fremont Avenue
		Alhambra, CA 91803
	Facility Contact, Title, Phone, and E-mail	Gary Hildebrand, Assistant Deputy Director, Division Engineer (626) 458-4300 ghildeb@dpw.lacounty.gov
Los Angeles County Flood Control District (*4B190107101*)	**Mailing Address**	900 South Fremont Avenue
		Alhambra, CA 91803
	Facility Contact, Title, Phone, and E-mail	Gary Hildebrand, Assistant Deputy Director, Division Engineer (626) 458-4300 ghildeb@dpw.lacounty.gov

Table 3. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
All Municipal Separate Storm Sewer System discharge points within Los Angeles County with the exception of the City of Long Beach	Storm Water and Non-Storm Water	Numerous	Numerous	Surface waters identified in Tables 2-1, 2-1a, 2-3, and 2-4, and Appendix 1, Table 1 of the ***Water Quality Control Plan - Los Angeles Region*** (***Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties***), and other unidentified tributaries to these surface waters within the following Watershed Management Areas: (1) Santa Clara River Watershed; (2) Santa Monica Bay Watershed Management Area, including Malibu Creek Watershed and Ballona Creek Watershed; (3) Los Angeles River Watershed; (4) Dominguez Channel and Greater Los Angeles/Long Beach Harbors Watershed Management Area; (5) Los Cerritos Channel and Alamitos Bay Watershed Management Area; (6) San Gabriel River Watershed; and (7) Santa Ana River Watershed.[1]

Table 4. Administrative Information

This Order was adopted by the California Regional Water Quality Control Board, Los Angeles Region on:	**November 8, 2012**
This Order becomes effective on:	**December 28, 2012**
This Order expires on:	**December 28, 2017**
In accordance with Title 23, Division 3, Chapter 9 of the California Code of Regulations and Title 40, Part 122 of the Code of Federal Regulations, each Discharger shall file a Report of Waste Discharge as application for issuance of new waste discharge requirements no later than:	**180 days prior to the Order expiration date above**

[1] Note that the Santa Ana River Watershed lies primarily within the boundaries of the Santa Ana Regional Water Quality Control Board. However, a portion of the Chino Basin subwatershed lies within the jurisdictions of Pomona and Claremont in Los Angeles County. The primary receiving waters within the Los Angeles County portion of the Chino Basin subwatershed are San Antonio Creek and Chino Creek.

In accordance with section 2235.4 of Title 23 of the California Code of Regulations, the terms and conditions of an expired permit are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on continuation of expired permits are complied with. Accordingly, if a new order is not adopted by the expiration date above, then the Permittees shall continue to implement the requirements of this Order until a new one is adopted.

I, Samuel Unger, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on November 8, 2012.

Samuel Unger

Samuel Unger, Executive Officer

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II. FINDINGS

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter Regional Water Board) finds:

A. Nature of Discharges and Sources of Pollutants

Storm water and non-storm water discharges consist of surface runoff generated from various land uses, which are conveyed via the municipal separate storm sewer system and ultimately discharged into surface waters throughout the region. Discharges of storm water and non-storm water from the Municipal Separate Storm Sewer Systems (MS4s) within the Coastal Watersheds of Los Angeles County convey pollutants to surface waters throughout the Los Angeles Region. In general, the primary pollutants of concern in these discharges identified by the Los Angeles County Flood Control District Integrated Receiving Water Impacts Report (1994-2005) are indicator bacteria, total aluminum, copper, lead, zinc, diazinon, and cyanide. Aquatic toxicity, particularly during wet weather, is also a concern based on a review of Annual Monitoring Reports from 2005-10. Storm water and non-storm water discharges of debris and trash are also a pervasive water quality problem in the Los Angeles Region though significant strides have been made by a number of Permittees in addressing this problem through the implementation of control measures to achieve wasteload allocations established in trash TMDLs.

Pollutants in storm water and non-storm water have damaging effects on both human health and aquatic ecosystems. Water quality assessments conducted by the Regional Water Board have identified impairment of beneficial uses of water bodies in the Los Angeles Region caused or contributed to by pollutant loading from municipal storm water and non-storm water discharges. As a result of these impairments, there are beach postings and closures, fish consumption advisories, local and global ecosystem and aesthetic impacts from trash and debris, reduced habitat for threatened and endangered species, among others. The Regional Water Board and USEPA have established 33 total maximum daily loads (TMDLs) that identify Los Angeles County MS4 discharges as one of the pollutant sources causing or contributing to these water quality impairments.

B. Permit History

Prior to the issuance of this Order, Regional Water Board Order No. 01-182 served as the NPDES Permit for MS4 storm water and non-storm water discharges within the Coastal Watersheds of the County of Los Angeles. The requirements of Order No. 01-182 applied to the Los Angeles County Flood Control District, the unincorporated areas of Los Angeles County under County jurisdiction, and 84 Cities within the Los Angeles County Flood Control District with the exception of the City of Long Beach. The first county-wide MS4 permit for the County of Los Angeles and the incorporated areas therein was Order No. 90-079, adopted by the Regional Water Board on June 18, 1990.

Under Order No. 01-182, the Los Angeles County Flood Control District was designated the Principal Permittee, and the County of Los Angeles and 84 incorporated Cities were each designated Permittees. The Principal Permittee coordinated and facilitated activities necessary to comply with the requirements of Order No. 01-182, but was not responsible for ensuring compliance of any of the other Permittees. The designation of a Principal Permittee has not been carried over from Order No. 01-182.

Order No. 01-182 was subsequently amended by the Regional Water Board on September 14, 2006 by Order No. R4-2006-0074 to incorporate provisions consistent with the assumptions and requirements of the Santa Monica Bay Beaches Dry Weather Bacteria TMDL (SMB Dry Weather Bacteria TMDL) waste load allocations (WLAs). As a result of a legal challenge to Order No. R4-2006-0074, the Los Angeles County Superior Court issued a peremptory writ of mandate on July 23, 2010 requiring the Regional Water Board to void and set aside the amendments adopted through Order No. R4-2006-0074 in Order No. 01-182. The Court concluded that the permit proceeding at which Order No. R4-2006-0074 was adopted was procedurally deficient. The Court did not address the substantive merits of the amendments themselves, and thus made no determination about the substantive validity of Order No. R4-2006-0074. In compliance with the writ of mandate, the Regional Water Board voided and set aside the amendments adopted through Order No. R4-2006-0074 on April 14, 2011. This Order reincorporates requirements equivalent to the 2006 provisions to implement the SMB Dry Weather Bacteria TMDL.

In addition, Order No. 01-182 was amended on August 9, 2007 by Order No. R4-2007-0042 to incorporate provisions consistent with the assumptions and requirements of the Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL, and was again amended on December 10, 2009 by Order No. R4-2009-0130 to incorporate provisions consistent with the assumptions and requirements of the Los Angeles River Watershed Trash TMDL.

C. Permit Application

On June 12, 2006, prior to the expiration date of Order No. 01-182, all of the Permittees filed Reports of Waste Discharge (ROWD) applying for renewal of their waste discharge requirements that serve as an NPDES permit to discharge storm water and authorized and conditionally exempt non-storm water through their MS4 to surface waters. Specifically, the Los Angeles County Flood Control District (LACFCD) submitted an ROWD application on behalf of itself, the County of Los Angeles, and 78 other Permittees. Several Permittees under Order No. 01-182 elected to not be included as part of the Los Angeles County Flood Control District's ROWD. On June 12, 2006, the Cities of Downey and Signal Hill each submitted an individual ROWD application requesting a separate MS4 Permit; and the Upper San Gabriel River Watershed Coalition, comprised of the cities of Azusa, Claremont, Glendora, Irwindale, and Whittier also submitted an individual ROWD application requesting a separate MS4 Permit for these cities. In 2010, the LACFCD withdrew from its participation in the 2006 ROWD submitted in conjunction with the County and 78 other co-permittees, and submitted a new ROWD also requesting an individual MS4 permit. The LACFCD also requested that, if an individual MS4 permit was not issued to it, it no longer be designated as the

Principal Permittee and it be relieved of Principal Permittee responsibilities. The Regional Water Board evaluated each of the 2006 ROWDs and notified all of the Permittees that their ROWDs did not satisfy federal storm water regulations contained in the USEPA Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems; Final Rule, August 9, 1996 (61 ***Fed Reg.*** 41697). Because each ROWD did not satisfy federal requirements, the Regional Water Board deemed all four 2006 ROWDs incomplete. The Regional Water Board also evaluated the LACFCD's 2010 ROWD and found that it too did not satisfy federal requirements for MS4s.

Though five separate ROWDs were submitted, the Regional Water Board retains discretion as the permitting authority to determine whether to issue permits for discharges from MS4s on a system-wide or jurisdiction-wide basis (Clean Water Act (CWA) § 402(p)(3)(B)(i); 40 CFR section 122.26, subdivisions (a)(1)(v) and (a)(3)(ii)). Because of the complexity and networking of the MS4 within Los Angeles County, which often results in commingled discharges, the Regional Water Board has previously adopted a system-wide approach to permitting MS4 discharges within Los Angeles County.

In evaluating the five separate ROWDs, the Regional Water Board considered the appropriateness of permitting discharges from MS4s within Los Angeles County on a system-wide or jurisdiction-wide basis or a combination of both. Based on that evaluation, the Regional Water Board again determined that, because of the complexity and networking of the MS4 within Los Angeles County, that one system-wide permit is appropriate. In order to provide individual Permittees with more specific requirements, certain provisions of this Order are organized by watershed management area, which is appropriate given the requirements to implement 33 watershed-based TMDLs. The Regional Water Board also determined that because the LACFCD owns and operates large portions of the MS4 infrastructure, including but not limited to catch basins, storm drains, outfalls and open channels, in each coastal watershed management area within Los Angeles County, the LACFCD should remain a Permittee in the single system-wide permit; however, this Order relieves the LACFCD of its role as "Principal Permittee."

D. Permit Coverage and Facility Description

The Los Angeles County Flood Control District, the County of Los Angeles, and 84 incorporated cities within the Los Angeles County Flood Control District with the exception of the City of Long Beach (see Table 5, List of Permittees), hereinafter referred to separately as Permittees and jointly as the Dischargers, discharge storm water and non-storm water from municipal separate storm sewer systems (MS4s), also called storm drain systems. For the purposes of this Order, references to the "Discharger" or "Permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger, or Permittees herein.

The area covered under this Order encompasses more than 3,000 square miles. This area contains a vast drainage network that serves incorporated and unincorporated areas in every Watershed Management Area within the Los Angeles Region. Maps

depicting the major drainage infrastructure within the area covered under this Order are included in Attachment C of this Order.

Table 5. List of Permittees

Agoura Hills	Hawaiian Gardens	Pomona
Alhambra	Hawthorne	Rancho Palos Verdes
Arcadia	Hermosa Beach	Redondo Beach
Artesia	Hidden Hills	Rolling Hills
Azusa	Huntington Park	Rolling Hills Estates
Baldwin Park	Industry	Rosemead
Bell	Inglewood	San Dimas
Bell Gardens	Irwindale	San Fernando
Bellflower	La Canada Flintridge	San Gabriel
Beverly Hills	La Habra Heights	San Marino
Bradbury	La Mirada	Santa Clarita
Burbank	La Puente	Santa Fe Springs
Calabasas	La Verne	Santa Monica
Carson	Lakewood	Sierra Madre
Cerritos	Lawndale	Signal Hill
Claremont	Lomita	South El Monte
Commerce	Los Angeles	South Gate
Compton	Lynwood	South Pasadena
Covina	Malibu	Temple City
Cudahy	Manhattan Beach	Torrance
Culver City	Maywood	Vernon
Diamond Bar	Monrovia	Walnut
Downey	Montebello	West Covina
Duarte	Monterey Park	West Hollywood
El Monte	Norwalk	Westlake Village
El Segundo	Palos Verdes Estates	Whittier
Gardena	Paramount	County of Los Angeles
Glendale	Pasadena	Los Angeles County Flood Control District
Glendora	Pico Rivera	

E. Los Angeles County Flood Control District

In 1915, the California Legislature enacted the Los Angeles County Flood Control Act, establishing the Los Angeles County Flood Control District (LACFCD). The objects and purposes of the Act are to provide for the control and conservation of the flood, storm and other waste waters within the flood control district. Among its other powers, the LACFCD also has the power to preserve, enhance, and add recreational features to lands or interests in lands contiguous to its properties for the protection, preservation, and use of the scenic beauty and natural environment for the properties or the lands. The LACFCD is governed, as a separate entity, by the County of Los Angeles Board of Supervisors.

The LACFCD's system includes the majority of drainage infrastructure within incorporated and unincorporated areas in every watershed, including approximately 500 miles of open channel, 3,500 miles of underground drains, and an estimated 88,000 catch basins, and several dams. Portions of the LACFCD's current system were originally unmodified natural rivers and water courses.

The LACFCD's system conveys both storm and non-storm water throughout the Los Angeles basin. Other Permittees' MS4s connect and discharge to the LACFCD's system.

The waters and pollutants discharged from the LACFCD's system come from various sources. These sources can include storm water and non-storm water from the Permittees under this permit and other NPDES and non-NPDES Permittees discharging into the LACFCD's system, including industrial waste water dischargers, waste water treatment facilities, industrial and construction stormwater Permittees, water suppliers, government entities, CERCLA potentially responsible parties, and Caltrans. Sources can also include discharges from school districts that do not operate large or medium-sized municipal storm sewers and discharges from entities that have waste discharge requirements or waivers of waste discharge requirements.

Unlike other Permittees, including the County of Los Angeles, the LACFCD does not own or operate any municipal sanitary sewer systems, public streets, roads, or highways.

The LACFCD in contrast to the County of Los Angeles has no planning, zoning, development permitting or other land use authority over industrial or commercial facilities, new developments or re-development projects, or development construction sites located in any incorporated or unincorporated areas within its service area. The Permittees that have such land use authority are responsible for implementing a storm water management program to inspect and control pollutants from industrial and commercial facilities, new development and re-development projects, and development construction sites within their jurisdictional boundaries. Nonetheless, as an owner and operator of MS4s, the LACFCD is required by federal regulations to control pollutant discharges into and from its MS4, including the ability to control through interagency agreements among co-Permittees and other owners of a MS4 the contribution of pollutants from one portion of the MS4 to another portion of the MS4.

F. Permit Scope

This Order regulates municipal discharges of storm water and non-storm water from the Permittees' MS4s. Section 122.26(b)(8) of title 40 of the Code of Federal Regulations (CFR) defines an MS4 as "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) [o]wned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian

tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) [d]esigned or used for collecting or conveying storm water; (iii) [w]hich is not a combined sewer; and (iv) [w]hich is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

Storm water discharges consist of those discharges that originate from precipitation events. Federal regulations define "storm water" as "storm water runoff, snow melt runoff, and surface runoff and drainage." (40 CFR § 122.26(b)(13).) While "surface runoff and drainage" is not defined in federal law, USEPA's preamble to its final storm water regulations demonstrates that the term is related to precipitation events such as rain and/or snowmelt. (55 ***Fed. Reg.*** 47990, 47995-96 (Nov. 16, 1990)).

Non-storm water discharges consist of all discharges through an MS4 that do not originate from precipitation events. Non-storm water discharges through an MS4 are prohibited unless authorized under a separate NPDES permit; authorized by USEPA pursuant to Sections 104(a) or 104(b) of the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); composed of natural flows; the result of emergency fire fighting activities; or conditionally exempted in this Order.

A permit issued to more than one Permittee for MS4 discharges may contain separate storm water management programs for particular Permittees or groups of Permittees. 40 CFR § 122.26(d)(2)(iv). Given the LACFCD's limited land use authority, it is appropriate for the LACFCD to have a separate and uniquely-tailored storm water management program. Accordingly, the storm water management program minimum control measures imposed on the LACFCD in Part VI.D of this Order differ in some ways from the minimum control measures imposed on other Permittees. Namely, aside from its own properties and facilities, the LACFCD is not subject to the Industrial/Commercial Facilities Program, the Planning and Land Development Program, and the Development Construction Program. However, as a discharger of storm and non-storm water, the LACFCD remains subject to the Public Information and Participation Program and the Illicit Connections and Illicit Discharges Elimination Program. Further, as the owner and operator of certain properties, facilities and infrastructure, the LACFCD remains subject to requirements of a Public Agency Activities Program.

G. Geographic Coverage and Watershed Management Areas

The municipal storm water and non-storm water discharges flow into receiving waters in the Watershed Management Areas of the Santa Clara River Watershed; Santa Monica Bay Watershed Management Area, including Malibu Creek Watershed and Ballona Creek Watershed; Los Angeles River Watershed; Dominguez Channel and Greater Los Angeles/Long Beach Harbors Watershed Management Area; Los Cerritos Channel and Alamitos Bay Watershed Management Area; San Gabriel River Watershed; and Santa Ana River Watershed.

This Order redefines Watershed Management Areas (WMAs) consistent with the delineations used in the Regional Water Board's Watershed Management Initiative. Permittees included in each of the WMAs are listed in Attachment K.

Maps depicting each WMA, its subwatersheds, and the major receiving waters therein are included in Attachment B.

Federal, state, regional or local entities in jurisdictions outside the Los Angeles County Flood Control District, and not currently named as Permittee to this Order, may operate MS4 facilities and/or discharge to the MS4 and water bodies covered by this Order. Pursuant to 40 CFR sections 122.26(d)(1)(ii) and 122.26(d)(2)(iv), each Permittee shall maintain the necessary legal authority to control the contribution of pollutants to its MS4 and shall include in its storm water management program a comprehensive planning process that includes intergovernmental coordination, where necessary.

Sources of MS4 discharges into receiving waters in the County of Los Angeles but not covered by this Order include the following:

- About 34 square miles of unincorporated area in Ventura County, which drain into Malibu Creek and then to Santa Monica Bay,
- About 9 square miles of the City of Thousand Oaks, which also drain into Malibu Creek and then to Santa Monica Bay, and
- About 86 square miles of area in Orange County, which drain into Coyote Creek and then into the San Gabriel River.

Specifically, the Orange County Flood Control District (OCFCD) owns and operates the Los Alamitos Retarding Basin and Pumping Station (Los Alamitos Retarding Basin). The Los Alamitos Retarding Basin is within the San Gabriel River Watershed, and is located adjacent to the Los Angeles and Orange County boundary. The majority of the 30-acre Los Alamitos Retarding Basin is in Orange County; however, the northwest corner of the facility is located in the County of Los Angeles. Storm water and non-storm water discharges, which drain to the Los Alamitos Retarding Basin, are pumped to the San Gabriel River Estuary (SGR Estuary) through pumps and subterranean piping. The pumps and discharge point are located in the County of Los Angeles.

The OCFCD pumps the water within the Los Alamitos Retarding Basin to the San Gabriel River Estuary through four discharge pipes, which are covered by tide gates. The discharge point is located approximately 700 feet downstream from the 2nd Street Bridge in Long Beach. The total pumping capacity of the four pumps is 800 cubic feet per second (cfs). There is also a 5 cfs sump pump that discharges nuisance flow continuously to the Estuary though a smaller diameter uncovered pipe.

The discharge from the Los Alamitos Retarding Basin is covered under the Orange County Municipal NPDES Storm Water Permit (NPDES Permit No. CAS618030, Santa Ana Regional Water Quality Control Board Order No. R8-2010-0062), which was issued to the County of Orange, Orange County Flood Control District and Incorporated Cities on May 22, 2009. The Orange County MS4 Permit references the San Gabriel River Metals and Selenium TMDL (Metals TMDL). The waste load allocations listed in the

Metals TMDL for Coyote Creek are included in the Orange County MS4 Permit. However, the Orange County MS4 Permit does not contain the dry weather copper waste load allocations assigned to the Estuary.

H. Legal Authorities

This Order is issued pursuant to CWA section 402 and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). This Order serves as an NPDES permit for point source discharges from the Permittees' MS4s to surface waters. This Order also serves as waste discharge requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with Section 13260).

I. Municipal Separate Storm Sewer System Requirements. The 1972 Clean Water Act[2] established the NPDES Program to regulate the discharge of pollutants from point sources to waters of the United States. However, pollution from storm water and dry-weather urban runoff was largely unabated for over a decade. In response to the 1987 Amendments to the Clean Water Act, USEPA developed Phase I of the NPDES Storm Water Permitting Program in 1990, which established a framework for regulating municipal and industrial discharges of storm water and non-storm water. The Phase I program addressed sources of storm water and dry-weather urban runoff that had the greatest potential to negatively impact water quality. In particular, under Phase I, USEPA required NPDES Permit coverage for discharges from medium and large MS4 with populations of 100,000 or more. Operators of MS4s regulated under the Phase I NPDES Storm Water Program were required to obtain permit coverage for municipal discharges of storm water and non-storm water to waters of the United States

Early in the history of this MS4 Permit, the Regional Water Board designated the MS4s owned and/or operated by the incorporated cities and Los Angeles County unincorporated areas within the Coastal Watersheds of Los Angeles County as a large MS4 due to the total population of Los Angeles County, including that of unincorporated and incorporated areas, and the interrelationship between the Permittees' MS4s, pursuant to 40 CFR section 122.26(b)(4). The total population of the cities and County unincorporated areas covered by this Order was 9,519,338 in 2000 and has increased by approximately 300,000 to 9,818,605 in 2010, according to the United States Census.

This Order implements the federal Phase I NPDES Storm Water Program requirements. These requirements include three fundamental elements: (i) a requirement to effectively prohibit non-storm water discharges through the MS4, (ii) requirements to implement controls to reduce the discharge of pollutants to the maximum extent practicable, and (iii) other provisions the Regional Water Board has determined appropriate for the control of such pollutants.

J. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the Permittees' applications, through monitoring and reporting programs, and other available

[2] Federal Water Pollution Control Act; 33 U.S.C. § 1251 et seq., which, as amended in 1977, is commonly known as the Clean Water Act.

information. In accordance with federal regulations at 40 CFR section 124.8, a Fact Sheet (Attachment F) has been prepared to explain the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing this Order. The Fact Sheet is hereby incorporated into this Order and also constitutes part of the Findings of the Regional Water Board for this Order. Attachments A through E and G through R are also incorporated into this Order.

K. Water Quality Control Plans. The Clean Water Act requires the Regional Water Board to establish water quality standards for each water body in its region. Water quality standards include beneficial uses, water quality objectives and criteria that are established at levels sufficient to protect those beneficial uses, and an antidegradation policy to prevent degrading waters. The Regional Water Board adopted a ***Water Quality Control Plan - Los Angeles Region*** (hereinafter Basin Plan) on June 13, 1994 and has amended it on multiple occasions since 1994. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Los Angeles Region. Pursuant to California Water Code section 13263(a), the requirements of this Order implement the Basin Plan. Beneficial uses applicable to the surface water bodies that receive discharges from the Los Angeles County MS4 generally include those listed below.

Table 6. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Uses
All Municipal Separate Storm Sewer Systems (MS4s) discharge points within Los Angeles County coastal watersheds with the exception of the City of Long Beach	Multiple surface water bodies of the Los Angeles Region	Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); Industrial Process Supply (PROC); Ground Water Recharge (GWR); Freshwater Replenishment (FRSH); Navigation (NAV); Hydropower Generation (POW); Water Contact Recreation (REC-1); Limited Contact Recreation (LREC-1); Non-Contact Water Recreation (REC-2); Commercial and Sport Fishing (COMM); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Preservation of Areas of Special Biological Significance (BIOL); Wildlife Habitat (WILD); Preservation of Rare and Endangered Species (RARE); Marine Habitat (MAR); Wetland Habitat (WET); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); Shellfish Harvesting (SHELL)

1. Total Maximum Daily Loads (TMDLs)

Clean Water Act section 303(d)(1) requires each state to identify the waters within its boundaries that do not meet water quality standards. Water bodies that do not meet water quality standards are considered impaired and are placed on the state's "CWA Section 303(d) List". For each listed water body, the state is required to establish a TMDL of each pollutant impairing the water quality standards in that water body. A TMDL is a tool for implementing water quality standards and is based on the relationship between pollution sources and in-stream water quality conditions. The

TMDL establishes the allowable pollutant loadings for a water body and thereby provides the basis to establish water quality-based controls. These controls should provide the pollution reduction necessary for a water body to meet water quality standards. A TMDL is the sum of the allowable pollutant loads of a single pollutant from all contributing point sources (the waste load allocations or WLAs) and non-point sources (load allocations or LAs), plus the contribution from background sources and a margin of safety. (40 CFR section 130.2(i).) MS4 discharges are considered point source discharges.

Numerous receiving waters within Los Angeles County do not meet water quality standards or fully support beneficial uses and therefore have been classified as impaired on the State's 303(d) List. The Regional Water Board and USEPA have each established TMDLs to address many of these water quality impairments. Pursuant to CWA section 402(p)(B)(3)(iii) and 40 CFR section 122.44(d)(1)(vii)(B), this Order includes requirements that are consistent with and implement WLAs that are assigned to discharges from the Los Angeles County MS4 from 33 State-adopted and USEPA established TMDLs. This Order requires Permittees to comply with the TMDL Provisions in Part VI.E and Attachments L through R, which are consistent with the assumptions and requirements of the TMDL WLAs assigned to discharges from the Los Angeles County MS4. A comprehensive list of TMDLs by watershed management area and the Permittees subject to each TMDL is included in Attachment K.

Waste load allocations in these TMDLs are expressed in several ways depending on the nature of the pollutant and its impacts on receiving waters and beneficial uses. Bacteria WLAs assigned to MS4 discharges are expressed as the number of allowable exceedance days that a water body may exceed the Basin Plan water quality objectives for protection of the REC-1 beneficial use. Since the TMDLs and the WLAs contained therein are expressed as receiving water conditions, receiving water limitations have been included in this Order that are consistent with and implement the allowable exceedance day WLAs. Water quality-based effluent limitations are also included equivalent to the Basin Plan water quality objectives to allow the opportunity for Permittees to individually demonstrate compliance at an outfall or jurisdictional boundary, thus isolating the Permittee's pollutant contributions from those of other Permittees and from other pollutant sources to the receiving water.

WLAs for trash are expressed as progressively decreasing allowable amounts of trash discharges from a Permittee's jurisdictional area within the drainage area to the impaired water body. The Trash TMDLs require each Permittee to make annual reductions of its discharges of trash over a set period, until the numeric target of zero trash discharged from the MS4 is achieved. The Trash TMDLs specify a specific formula for calculating and allocating annual reductions in trash discharges from each jurisdictional area within a watershed. The formula results in specified annual amounts of trash that may be discharged from each jurisdiction into the receiving waters. Translation of the WLAs or compliance points described in the TMDLs into jurisdiction-specific load reductions from the baseline levels, as specified

in the TMDL, logically results in the articulation of an annual limitation on the amount of a pollutant that may be discharged. The specification of allowable annual trash discharge amounts meets the definition of an “effluent limitation”, as that term is defined in subdivision (c) of section 13385.1 of the California Water Code. Specifically, the trash discharge limitations constitute a “numeric restriction … on the quantity [or] discharge rate … of a pollutant or pollutants that may be discharged from an authorized location.”

TMDL WLAs for other pollutants (e.g., metals and toxics) are expressed as concentration and/or mass and water quality-based effluent limitations have been specified consistent with the expression of the WLA, including any applicable averaging periods. Some TMDLs specify that, if certain receiving water conditions are achieved, such achievement constitutes attainment of the WLA. In these cases, receiving water limitations and/or provisions outlining these alternate means of demonstrating compliance are included in the TMDL provisions in Part VI.E of this Order.

The inclusion of water quality-based effluent limitations and receiving water limitations to implement applicable WLAs provides a clear means of identifying required water quality outcomes within the permit and ensures accountability by Permittees to implement actions necessary to achieve the limitations.

A number of the TMDLs for bacteria, metals, and toxics establish WLAs that are assigned jointly to a group of Permittees whose storm water and/or non-storm water discharges are or may be commingled in the MS4 prior to discharge to the receiving water subject to the TMDL. TMDLs address commingled MS4 discharges by assigning a WLA to a group of MS4 Permittees based on co-location within the same subwatershed. Permittees with co-mingled MS4 discharges are jointly responsible for meeting the water quality-based effluent limitations and receiving water limitations assigned to MS4 discharges in this Order. "Joint responsibility" means that the Permittees that have commingled MS4 discharges are responsible for implementing programs in their respective jurisdictions, or within the MS4 for which they are an owner and/or operator, to meet the water quality-based effluent limitations and/or receiving water limitations assigned to such commingled MS4 discharges.

In these cases, federal regulations state that co-permittees need only comply with permit conditions relating to discharges from the MS4 for which they are owners or operators (40 CFR § 122.26(a)(3)(vi)). Individual co-permittees are only responsible for their contributions to the commingled MS4 discharge. This Order does not require a Permittee to individually ensure that a commingled MS4 discharge meets the applicable water quality-based effluent limitations included in this Order, unless such Permittee is shown to be solely responsible for an exceedance.

Additionally, this Order allows a Permittee to clarify and distinguish their individual contributions and demonstrate that its MS4 discharge did not cause or contribute to exceedances of applicable water quality-based effluent limitations and/or receiving

water limitations. If such a demonstration is made, though the Permittee's discharge may commingle with that of other Permittees, the Permittee would not be held jointly responsible for the exceedance of the water quality-based effluent limitation or receiving water limitation. Individual co-permittees who demonstrate compliance with the water quality-based effluent limitations will not be held responsible for violations by non-compliant co-permittees.

Given the interconnected nature of the Permittees' MS4s, however, the Regional Water Board expects Permittees to work cooperatively to control the contribution of pollutants from one portion of the MS4 to another portion of the system through inter-agency agreements or other formal arrangements.

L. Ocean Plan. In 1972, the State Water Resources Control Board (State Water Board) adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (hereinafter Ocean Plan). The State Water Board adopted the most recent amended Ocean Plan on September 15, 2009. The Office of Administration Law approved it on March 10, 2010. On October 8, 2010, USEPA approved the 2009 Ocean Plan. The Ocean Plan is applicable, in its entirety, to the ocean waters of the State. In order to protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Pursuant to California Water Code section 13263(a), the requirements of this Order implement the Ocean Plan. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized in the table below.

Table 7. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Uses
All Municipal Separate Storm Sewer Systems (MS4s) discharge points within Los Angeles County coastal watersheds with the exception of the City of Long Beach	Pacific Ocean	Industrial Water Supply (IND); Water Contact (REC-1) and Non-Contact Recreation (REC-2), including aesthetic enjoyment; Navigation (NAV); Commercial and Sport Fishing (COMM); Mariculture; Preservation and Enhancement of Designated Areas of Special Biological Significance (ASBS); Rare and Endangered Species (RARE); Marine Habitat (MAR); Fish Migration (MIGR); Fish Spawning (SPWN) and Shellfish Harvesting (SHELL)

M. Antidegradation Policy

40 CFR section 131.12 requires that state water quality standards include an antidegradation policy consistent with the federal antidegradation policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining the Quality of the Waters of the State"). Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is

justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

N. Anti-Backsliding Requirements. Section 402(o)(2) of the CWA and federal regulations at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous permit.

O. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2115.5) or the Federal Endangered Species Act (16 U.S.C.A., §§ 1531 to 1544). This Order requires compliance with requirements to protect the beneficial uses of waters of the United States. Permittees are responsible for meeting all requirements of the applicable Endangered Species Act.

P. Monitoring and Reporting. Section 308(a) of the federal Clean Water Act, and 40 CFR sections 122.41(h), (j)-(l), 122.41(i), and 122.48, require that all NPDES permits specify monitoring and reporting requirements. Federal regulations applicable to large and medium MS4s also specify additional monitoring and reporting requirements. (40 C.F.R. §§ 122.26(d)(2)(i)(F) & (d)(2)(iii)(D), 122.42(c).) California Water Code section 13383 authorizes the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program establishes monitoring, reporting, and recordkeeping requirements that implement the federal and State laws and/or regulations. This Monitoring and Reporting Program is provided in Attachment E.

Q. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in Attachment D. Dischargers must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR section 122.42 provided in Attachment D. The Regional Water Board has also included in Part VI of this Order various special provisions applicable to the Dischargers. A rationale for the various special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).

R. State Mandates

Article XIII B, Section 6(a) of the California Constitution provides that whenever "any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service." The requirements of this Order do not constitute state mandates that are subject to a

subvention of funds for several reasons as described in detail in the attached Fact Sheet (Attachment F).

S. California Water Code Section 13241. The California Supreme Court has ruled that although California Water Code section 13263 requires the State and Regional Water Boards (collectively, Water Boards) to consider the factors set forth in California Water Code section 13241 when issuing an NPDES permit, the Water Boards may not consider the factors to justify imposing pollutant restriction that are less stringent than the applicable federal regulations require. (***City of Burbank v. State Water Resources Control Bd.*** (2005) 35 Cal.4th 613, 618, 626-627). However, when the pollutant restrictions in an NPDES permit are more stringent than federal law requires, California Water Code section 13263 requires that the Water Boards consider the factors described in section 13241 as they apply to those specific restrictions. As noted in the preceding finding, the Regional Water Board finds that the requirements in this permit are not more stringent than the minimum federal requirements. Therefore, a 13241 analysis is not required for permit requirements that implement the effective prohibition on the discharge of non-storm water discharges into the MS4, or for controls to reduce the discharge of pollutants in storm water to the maximum extent practicable, or other provisions that the Regional Water Board has determined appropriate to control such pollutants, as those requirements are mandated by federal law. Notwithstanding the above, the Regional Water Board has developed an economic analysis of the permit's requirements, consistent with California Water Code section 13241. That analysis is provided in the Fact Sheet (Attachment F of this Order).

T. California Environmental Quality Act (CEQA). This action to adopt an NPDES Permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code, § 21100, et seq.) pursuant to California Water Code section 13389. (***County of Los Angeles v. Cal. Water Boards*** (2006) 143 Cal.App.4th 985.)

U. Notification of Interested Parties. In accordance with State and federal laws and regulations, the Regional Water Board has notified the Permittees and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharges authorized by this Order and has provided them with an opportunity to provide written and oral comments. Details of notification, as well as the meetings and workshops held on drafts of the permit, are provided in the Fact Sheet of this Order.

V. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all oral and written comments pertaining to the discharges authorized by this Order and the requirements contained herein. The Regional Water Board has prepared written responses to all timely comments, which are incorporated by reference as part of this Order.

W. This Order serves as an NPDES permit pursuant to CWA section 402 or amendments thereto, and becomes effective fifty (50) days after the date of its adoption, provided that the Regional Administrator, USEPA, Region IX, expresses no objections.

X. This Order supersedes Order No. 01-182 as amended, except for enforcement purposes.

Y. Review by the State Water Board. Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must ***receive*** the petition by 5:00 p.m., 30 days after the Regional Water Board action, except that if the thirtieth day following the action falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

THEREFORE, IT IS HEREBY ORDERED, that the Dischargers, in order to meet the provisions contained in Division 7 of the California Water Code (commencing with section 13000), and regulations, plans, and policies adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following requirements:

III. DISCHARGE PROHIBITIONS

A. Prohibitions – Non-Storm Water Discharges

1. Prohibition of Non-Storm Water Discharges. Each Permittee shall, for the portion of the MS4 for which it is an owner or operator, prohibit non-storm water discharges through the MS4 to receiving waters except where such discharges are either:

a. Authorized non-storm water discharges separately regulated by an individual or general NPDES permit;

b. Temporary non-storm water discharges authorized by USEPA[3] pursuant to sections 104(a) or 104(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that either: (i) will comply with water quality standards as applicable or relevant and appropriate requirements ("ARARs") under section 121(d)(2) of CERCLA; or (ii) are subject to either (a) a written waiver of ARARs by USEPA pursuant to section 121(d)(4) of CERCLA or (b) a written determination by USEPA that compliance with ARARs is not practicable considering the exigencies of the situation pursuant to 40 CFR. section 300.415(j);

c. Authorized non-storm water discharges from emergency fire fighting activities (i.e., flows necessary for the protection of life or property)[4];

d. Natural flows, including:

i. Natural springs;

[3] These typically include short-term, high volume discharges resulting from the development or redevelopment of groundwater extraction wells, or USEPA or State-required compliance testing of potable water treatment plants, as part of a USEPA authorized groundwater remediation action under CERCLA.

[4] Discharges from vehicle washing, building fire suppression system maintenance and testing (e.g., sprinkler line flushing), fire hydrant maintenance and testing, and other routine maintenance activities are not considered emergency fire fighting activities.

ii. Flows from riparian habitats and wetlands;

iii. Diverted stream flows, authorized by the State or Regional Water Board;

iv. Uncontaminated ground water infiltration[5];

v. Rising ground waters, where ground water seepage is not otherwise covered by a NPDES permit[6]; or

e. Conditionally exempt non-storm water discharges in accordance with Parts III.A.2 and III.A.3 below.

2. Conditional Exemptions from Non-Storm Water Discharge Prohibition. The following categories of non-storm water discharges are conditionally exempt from the non-storm water discharge prohibition, provided they meet all required conditions specified below, or as otherwise approved by the Regional Water Board Executive Officer, in all areas regulated by this Order with the exception of direct discharges to Areas of Special Biological Significance (ASBS) within Los Angeles County. Conditional exemptions from the prohibition on non-storm water discharges through the MS4 to an ASBS are identified in Part III.A.3 below.

a. Conditionally Exempt Essential Non-Storm Water Discharges: These consist of those discharges that fall within one of the categories below; meet all required best management practices (BMPs) as specified in i. and ii. below, including those enumerated in the referenced BMP manuals; are essential public services discharge activities; and are directly or indirectly required by other state or federal statute and/or regulation:

i. Discharges from essential ***non-emergency*** fire fighting activities[7] provided appropriate BMPs are implemented based on the CAL FIRE, Office of the State Fire Marshal's ***Water-Based Fire Protection Systems Discharge Best Management Practices Manual*** (September 2011) for water-based fire protection system discharges, and based on Riverside County's ***Best Management Practices Plan for Urban Runoff Management*** (May 1, 2004) or equivalent BMP manual for fire training activities and post-emergency fire fighting activities;

ii. Discharges from drinking water supplier distribution systems, where not otherwise regulated by an individual or general NPDES permit[8], provided

[5] Uncontaminated ground water infiltration is water other than waste water that enters the MS4 (including foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow. (See 40 CFR § 35.2005(20).)

[6] A NPDES permit for discharges associated with ground water dewatering is required within the Los Angeles Region.

[7] This includes fire fighting training activities, which simulate emergency responses, and routine maintenance and testing activities necessary for the protection of life and property, including building fire suppression system maintenance and testing (e.g. sprinkler line flushing) and fire hydrant testing and maintenance. Discharges from vehicle washing are not considered essential and as such are not conditionally exempt from the non-storm water discharge prohibition.

[8] Drinking water supplier distribution system releases means sources of flows from drinking water storage, supply and distribution systems (including flows from system failures), pressure releases, system maintenance, distribution line testing, and flushing and dewatering of pipes, reservoirs, and vaults, and minor non-invasive well maintenance activities not involving chemical addition(s) where not otherwise regulated by NPDES Permit No. CAG674001, NPDES Permit No. CAG994005, or another separate NPDES permit.

appropriate BMPs are implemented based on the American Water Works Association (California-Nevada Section) ***Guidelines for the Development of Your Best Management Practices (BMP) Manual for Drinking Water System Releases*** (2005) or equivalent industry standard BMP manual. Additionally, each Permittee shall work with drinking water suppliers that may discharge to the Permittee's MS4 to ensure for all discharges greater than 100,000 gallons: (1) notification at least 72 hours prior to a planned discharge and as soon as possible after an unplanned discharge; (2) monitoring of any pollutants of concern[9] in the drinking water supplier distribution system release; and (3) record keeping by the drinking water supplier. Permittees shall require that the following information is maintained by the drinking water supplier(s) for all discharges to the MS4 (planned and unplanned) greater than 100,000 gallons: name of discharger, date and time of notification (for planned discharges), method of notification, location of discharge, discharge pathway, receiving water, date of discharge, time of the beginning and end of the discharge, duration of the discharge, flow rate or velocity, total number of gallons discharged, type of dechlorination equipment used, type of dechlorination chemicals used, concentration of residual chlorine, type(s) of sediment controls used, pH of discharge, type(s) of volumetric and velocity controls used, and field and laboratory monitoring data. Records shall be retained for five years and made available upon request by the Permittee or Regional Water Board.

b. Those discharges that fall within one of the categories below, provided that the discharge itself is not a source of pollutants and meets all required conditions specified in Table 8 or as otherwise specified or approved by the Regional Water Board Executive Officer:

i. Dewatering of lakes[10];

ii. Landscape irrigation;

iii. Dechlorinated/debrominated swimming pool/spa discharges[11], where not otherwise regulated by a separate NPDES permit;

iv. Dewatering of decorative fountains[12];

v. Non-commercial car washing by residents or by non-profit organizations;

[9] Pollutants of concern from drinking water supplier distribution system releases may include trash and debris, including organic matter, total suspended solids (TSS), residual chlorine, pH, and any pollutant for which there is a water quality-based effluent limitation (WQBEL) in Part VI.E applicable to discharges from the MS4 to the receiving water. Determination of the pollutants of concern for a particular discharge shall be based on an evaluation of the potential for the constituent(s) to be present in the discharge at levels that may cause or contribute to exceedances of applicable WQBELs or receiving water limitations.

[10] Dewatering of lakes does not include dewatering of drinking water reservoirs. Dewatering of drinking water reservoirs is addressed in Part III.A.2.a.ii.

[11] Conditionally exempt dechlorinated/debrominated swimming pool/spa discharges do not include swimming pool/spa filter backwash or swimming pool/spa water containing bacteria, detergents, wastes, or algaecides, or any other chemicals including salts from pools commonly referred to as "salt water pools" in excess of applicable water quality objectives.

[12] Conditionally exempt discharges from dewatering of decorative fountains do not include fountain water containing bacteria, detergents, wastes, or algaecides, or any other chemicals in excess of applicable water quality objectives.

vi. Street/sidewalk wash water[13].

3. Conditional Exemptions from Non-Storm Water Discharge Prohibition within an ASBS. The following non-storm water discharges from the MS4 directly to an ASBS are conditionally exempt pursuant to the California Ocean Plan as specified below, provided that:

a. The discharges are essential for emergency response purposes, structural stability, slope stability or occur naturally, including the following discharges:

i. Discharges associated with emergency fire fighting activities (i.e., flows necessary for the protection of life or property)[14];

ii. Foundation and footing drains;

iii. Water from crawl space or basement pumps;

iv. Hillside dewatering;

v. Naturally occurring ground water seepage via a MS4; and

vi. Non-anthropogenic flows from a naturally occurring stream via a culvert or MS4, as long as there are no contributions of anthropogenic runoff.

b. The discharges fall within one of the conditionally exempt essential non-storm water discharge categories in Part III.A.2.a. above.

c. Conditionally exempt non-storm water discharges shall not cause or contribute[15] to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations in this Order or the water quality objectives in Chapter II of the Ocean Plan, or alter natural ocean water quality in an ASBS.

4. Permittee Requirements. Each Permittee shall:

a. Develop and implement procedures to ensure that a discharger, if not a named Permittee in this Order, fulfills the following for non-storm water discharges to the Permittee's MS4:

i. Notifies the Permittee of the planned discharge in advance, consistent with requirements in Table 8 or recommendations pursuant to the applicable BMP manual;

ii. Obtains any local permits required by the MS4 owner(s) and/or operator(s);

[13] Conditionally exempt non-storm water discharges of street/sidewalk wash water only include those discharges resulting from use of high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area in accordance with Regional Water Board Resolution No. 98-08. Conditionally exempt non-storm water discharges of street/sidewalk wash water do not include hosing of any sidewalk or street with a garden hose with a pressure nozzle.
[14] See note 4.
[15] Based on the water quality characteristics of the conditionally exempt non-storm water discharge itself.

iii. Provides documentation that it has obtained any other necessary permits or water quality certifications[16] for the discharge;

iv. Conducts monitoring of the discharge, if required by the Permittee;

v. Implements BMPs and/or control measures as specified in Table 8 or in the applicable BMP manual(s) as a condition of the approval to discharge into the Permittee's MS4; and

vi. Maintains records of its discharge to the MS4, consistent with requirements in Table 8 or recommendations pursuant to the applicable BMP manual. For lake dewatering, Permittees shall require that the following information is maintained by the lake owner / operator: name of discharger, date and time of notification, method of notification, location of discharge, discharge pathway, receiving water, date of discharge, time of the beginning and end of the discharge, duration of the discharge, flow rate or velocity, total number of gallons discharged, type(s) of sediment controls used, pH of discharge, type(s) of volumetric and velocity controls used, and field and laboratory monitoring data. Records shall be made available upon request by the Permittee or Regional Water Board.

b. Develop and implement procedures that minimize the discharge of landscape irrigation water into the MS4 by promoting conservation programs.

i. Permittees shall coordinate with the local water purveyor(s), where applicable, to promote landscape water use efficiency requirements for existing landscaping, use of drought tolerant, native vegetation, and the use of less toxic options for pest control and landscape management.

ii. Permittees shall develop and implement a coordinated outreach and education program to minimize the discharge of irrigation water and pollutants associated with irrigation water consistent with Part VI.D.4.c of this Order (Public Information and Participation Program).

c. Evaluate monitoring data collected pursuant to the Monitoring and Reporting Program (MRP) of this Order (Attachment E), and any other associated data or information, and determine whether any of the authorized or conditionally exempt non-storm water discharges identified in Parts III.A.1, III.A.2, and III.A.3 above are a source of pollutants that may be causing or contributing to an exceedance of applicable receiving water limitations in Part V and/or water quality-based effluent limitations in Part VI.E. To evaluate monitoring data, the Permittee shall either use applicable interim or final water quality-based effluent limitations for the pollutant or, if there are no applicable interim or final water quality-based effluent limitations for the pollutant, use applicable action levels provided in Attachment G. Based on non-storm water outfall-based monitoring as implemented through the MRP, if monitoring data show

[16] Pursuant to the Federal Clean Water Act § 401.

exceedances of applicable water quality-based effluent limitations or action levels, the Permittee shall take further action to determine whether the discharge is causing or contributing to exceedances of receiving water limitations in Part V.

d. If the Permittee determines that any of the conditionally exempt non-storm water discharges identified in Part III.A.2.b above is a source of pollutants that causes or contributes to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations, the Permittee(s) shall report its findings to the Regional Water Board in its annual report. Based on this determination, the Permittee(s) shall also either:

i. Effectively prohibit[17] the non-storm water discharge to the MS4; or

ii. Impose conditions in addition to those in Table 8, subject to approval by the Regional Water Board Executive Officer, on the non-storm water discharge such that it will not be a source of pollutants; or

iii. Require diversion of the non-storm water discharge to the sanitary sewer; or

iv. Require treatment of the non-storm water discharge prior to discharge to the receiving water.

e. If the Permittee determines that any of the authorized or conditionally exempt essential non-storm water discharges identified in Parts III.A.1.a through III.A.1.c, III.A.2.a, or III.A.3 above is a source of pollutants that causes or contributes to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations, the Permittee shall notify the Regional Water Board within 30 days if the non-storm water discharge is an authorized discharge with coverage under a separate NPDES permit or authorized by USEPA under CERCLA in the manner provided in Part III.A.1.b above, or a conditionally exempt essential non-storm water discharge or emergency non-storm water discharge.

f. If the Permittee prohibits the discharge from the MS4, as per Part III.A.4.d.i, then the Permittee shall implement procedures developed under Part VI.D.9 (Illicit Connections and Illicit Discharges Elimination Program) in order to eliminate the discharge to the MS4.

5. If a Permittee demonstrates that the water quality characteristics of a specific authorized or conditionally exempt essential non-storm water discharge resulted in an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations during a specific sampling event, the Permittee shall not be found in violation of applicable receiving water limitations and/or water quality-based effluent limitations for that specific sampling event. Such

[17] To "effectively prohibit" means to not allow the non-storm water discharge through the MS4 unless the discharger obtains coverage under a separate NPDES permit prior to discharge to the MS4.

demonstration must be based on source specific water quality monitoring data from the authorized or conditionally exempt essential non-storm water discharge or other relevant information documenting the characteristics of the specific non-storm water discharge as identified in Table 8.

6. Notwithstanding the above, the Regional Water Board Executive Officer, based on an evaluation of monitoring data and other relevant information for specific categories of non-storm water discharges, may modify a category or remove categories of conditionally exempt non-storm water discharges from Parts III.A.2 and III.A.3 above if the Executive Officer determines that a discharge category is a source of pollutants that causes or contributes to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations, or may require that a discharger obtain coverage under a separate individual or general State or Regional Water Board permit for a non-storm water discharge.

Table 8. Required Conditions for Conditionally Exempt Non-Storm Water Discharges

Discharge Category	General Conditions Under Which Discharge Through the MS4 is Allowed	Conditions/BMPs that are Required to be Implemented Prior to Discharge Through the MS4
All Discharge Categories	See discharge specific conditions below.	Ensure conditionally exempt non-storm water discharges avoid potential sources of pollutants in the flow path to prevent introduction of pollutants to the MS4 and receiving water. Whenever there is a discharge of 100,000 gallons or more into the MS4, Permittees shall require advance notification by the discharger to the potentially affected MS4 Permittees, including at a minimum the LACFCD, if applicable, and the Permittee with jurisdiction over the land area from which the discharge originates.
Dewatering of lakes	Discharge allowed only if all necessary permits/water quality certifications for dredge and fill activities, including water diversions, are obtained prior to discharge.	Ensure procedures for advanced notification by the lake owner / operator to the Permittee(s) no less than 72 hours prior to the planned discharge. Immediately prior to discharge, visible trash on the shoreline or on the surface of the lake shall be removed and disposed of in a legal manner. Immediately prior to discharge, the discharge pathway and the MS4 inlet to which the discharge is directed, shall be inspected and cleaned out. Discharges shall be volumetrically and velocity controlled to minimize resuspension of sediments. Measures shall be taken to stabilize lake bottom sediments. Ensure procedures for water quality monitoring for pollutants of concern[18] in the lake. Ensure record-keeping of lake dewatering by the lake owner / operator.

[18] Pollutants of concern include, at a minimum, trash and debris, including organic matter, TSS, and any pollutant for which there is a water quality-based effluent limitation in Part VI.E for the lake and/or receiving water.

Landscape irrigation using potable water	Discharge allowed if runoff due to potable landscape irrigation is minimized through the implementation of an ordinance specifying water efficient landscaping standards, as well as an outreach and education program focusing on water conservation and landscape water use efficiency.	Implement BMPs to minimize runoff and prevent introduction of pollutants to the MS4 and receiving water. Implement water conservation programs to minimize discharge by using less water.
Landscape irrigation using reclaimed or recycled water	Discharge of reclaimed or recycled water runoff from landscape irrigation is allowed if the discharge is in compliance with the producer and distributor operations and management (O&M) plan, and all relevant portions thereof, including the Irrigation Management Plan.	Discharges must comply with applicable O&M Plans, and all relevant portions thereof, including the Irrigation Management Plan.

Dechlorinated/ debrominated swimming pool/spa discharges	Discharges allowed after implementation of specified BMPs. Pool or spa water containing copper-based algaecides is not allowed to be discharged to the MS4. Discharges of cleaning waste water and filter backwash allowed only if authorized by a separate NPDES permit.	Implement BMPs and ensure discharge avoids potential sources of pollutants in the flow path to prevent introduction of pollutants prior to discharge to the MS4 and receiving water. Swimming pool water must be dechlorinated or debrominated using holding time, aeration, and/or sodium thiosulfate. Chlorine residual in the discharge shall not exceed 0.1 mg/L. Swimming pool water shall not contain any detergents, wastes, or algaecides, or any other chemicals including salts from pools commonly referred to as "salt water pools" in excess of applicable water quality objectives.[19] Swimming pool discharges are to be pH adjusted, if necessary, and be within the range of 6.5 and 8.5 standard units. Swimming pool discharges shall be volumetrically and velocity controlled to promote evaporation and/or infiltration. Ensure procedures for advanced notification by the pool owner to the Permittee(s) at least 72 hours prior to planned discharge for discharges of 100,000 gallons or more. For discharges of 100,000 gallons or more, immediately prior to discharge, the discharge pathway and the MS4 inlet to which the discharge is directed, shall be inspected and cleaned out.
Dewatering of decorative fountains	Discharges allowed after implementation of specified BMPs. Fountain water containing copper-based algaecides may not be discharged to the MS4. Fountain water containing dyes my not be discharged to the MS4.	Implement BMPs and ensure discharge avoids potential sources of pollutants in the flow path to prevent introduction of pollutants prior to discharge to the MS4 and receiving water. Fountain water must be dechlorinated or debrominated using holding time, aeration, and/or sodium thiosulfate. Chlorine residual in the discharge shall not exceed 0.1 mg/L. Fountain discharges are to be pH adjusted, if necessary, and be within the range of 6.5 and 8.5 standard units. Fountain discharges shall be volumetrically and velocity controlled to promote evaporation and/or infiltration. Ensure procedures for advanced notification by the fountain owner to the Permittee(s) at least 72 hours prior to planned discharge for discharges of 100,000 gallons or more. For discharges of 100,000 gallons or more, immediately prior to discharge, the discharge pathway and the MS4 inlet to which the discharge is directed, shall be inspected and cleaned out.
Non-commercial car washing by residents or by non-	Discharges allowed after implementation of specified BMPs.	Implement BMPs and ensure discharge avoids potential sources of pollutants in the flow path to prevent introduction of pollutants prior to discharge to the MS4 and receiving water. Minimize the amount of water used by employing water conservation practices such as turning off

[19] Applicable mineral water quality objectives for surface waters are contained in Chapter 3 of the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.

profit organizations		nozzles or kinking the hose when not spraying a car, and using a low volume pressure washer. Encourage use of biodegradable, phosphate free detergents and non-toxic cleaning products. Where possible, wash cars on a permeable surface where wash water can percolate into the ground (e.g. gravel or grassy areas). Empty buckets of soapy or rinse water into the sanitary sewer system (e.g., sinks or toilets).
Street/sidewalk wash water	Discharges allowed after implementation of specified BMPs.	Sweeping should be used as an alternate BMP whenever possible and sweepings should be disposed of in the trash. BMPs shall be in accordance with Regional Water Board Resolution No. 98-08 that requires: 1) removal of trash, debris, and free standing oil/grease spills/leaks (use absorbent material if necessary) from the area before washing and 2) use of high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area. In areas of unsanitary conditions (e.g., areas where the congregation of transient populations can reasonably be expected to result in a significant threat to water quality), whenever practicable, Permittees shall collect and divert street and alley wash water from the Permittee's street and sidewalk cleaning public agency activities to the sanitary sewer.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. **Technology Based Effluent Limitations**: Each Permittee shall reduce pollutants in storm water discharges from the MS4 to the maximum extent practicable (MEP).

2. **Water Quality-Based Effluent Limitations (WQBELs).** This Order establishes WQBELs consistent with the assumptions and requirements of all available TMDL waste load allocations assigned to discharges from the Permittees' MS4s.

   a. Each Permittee shall comply with applicable WQBELs as set forth in Part VI.E of this Order, pursuant to applicable compliance schedules.

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Receiving Water Limitations

1. Discharges from the MS4 that cause or contribute to the violation of receiving water limitations are prohibited.

2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible[20], shall not cause or contribute to a condition of nuisance.

3. The Permittees shall comply with Parts V.A.1 and V.A.2 through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the storm water management program and its components and other requirements of this Order including any modifications. The storm water management program and its components shall be designed to achieve compliance with receiving water limitations. If exceedances of receiving water limitations persist, notwithstanding implementation of the storm water management program and its components and other requirements of this Order, the Permittee shall assure compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:

   a. Upon a determination by either the Permittee or the Regional Water Board that discharges from the MS4 are causing or contributing to an exceedance of an applicable Receiving Water Limitation, the Permittee shall promptly notify and thereafter submit an Integrated Monitoring Compliance Report (as described in the Program Reporting Requirements, Part XVIII.A.5 of the Monitoring and Reporting Program) to the Regional Water Board for approval. The Integrated Monitoring Compliance shall describe the BMPs that are currently being

[20] Pursuant to 40 CFR § 122.26(a)(3)(vi), a Permittee is only responsible for discharges of storm water and non-storm water from the MS4 for which it is an owner or operator.

implemented by the Permittee and additional BMPs, including modifications to current BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedances of receiving water limitations. The Integrated Monitoring Compliance Report shall include an implementation schedule. This Integrated Monitoring Compliance Report shall be incorporated in the annual Storm Water Report unless the Regional Water Board directs an earlier submittal. The Regional Water Board may require modifications to the Integrated Monitoring Compliance Report.

b. The Permittee shall submit any modifications to the Integrated Monitoring Compliance Report required by the Regional Water Board within 30 days of notification.

c. Within 30 days following the Regional Water Board Executive Officer's approval of the Integrated Monitoring Compliance Report, the Permittee shall revise the storm water management program and its components and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, an implementation schedule, and any additional monitoring required.

d. The Permittee shall implement the revised storm water management program and its components and monitoring program according to the approved implementation schedule.

4. So long as the Permittee has complied with the procedures set forth in Part V.A.3. above and is implementing the revised storm water management program and its components, the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Regional Water Board to modify current BMPs or develop additional BMPs.

B. Ground Water Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions. Each Permittee shall comply with all Standard Provisions included in Attachment D of this Order, in accordance with 40 CFR sections 122.41 and 122.42.

2. Legal Authority

a. Each Permittee must establish and maintain adequate legal authority, within its respective jurisdiction, to control pollutant discharges into and from its MS4 through ordinance, statute, permit, contract or similar means. This legal authority must, at a minimum, authorize or enable the Permittee to:

i. Control the contribution of pollutants to its MS4 from storm water discharges associated with industrial and construction activity and control the quality of storm water discharged from industrial and construction sites. This requirement applies both to industrial and construction sites with coverage under an NPDES permit, as well as to those sites that do not have coverage under an NPDES permit.

ii. Prohibit all non-storm water discharges through the MS4 to receiving waters not otherwise authorized or conditionally exempt pursuant to Part III.A;

iii. Prohibit and eliminate illicit discharges and illicit connections to the MS4;

iv. Control the discharge of spills, dumping, or disposal of materials other than storm water to its MS4;

v. Require compliance with conditions in Permittee ordinances, permits, contracts or orders (i.e., hold dischargers to its MS4 accountable for their contributions of pollutants and flows);

vi. Utilize enforcement mechanisms to require compliance with applicable ordinances, permits, contracts, or orders;

vii. Control the contribution of pollutants from one portion of the shared MS4 to another portion of the MS4 through interagency agreements among Co-permittees;

viii. Control of the contribution of pollutants from one portion of the shared MS4 to another portion of the MS4 through interagency agreements with other owners of the MS4 such as the State of California Department of Transportation;

ix. Carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with applicable municipal ordinances, permits, contracts and orders, and with the provisions of this Order, including the prohibition of non-storm water discharges into the MS4 and receiving waters. This means the Permittee must have authority to enter, monitor, inspect, take measurements, review and copy records, and require regular reports from entities discharging into its MS4;

x. Require the use of control measures to prevent or reduce the discharge of pollutants to achieve water quality standards/receiving water limitations;

xi. Require that structural BMPs are properly operated and maintained; and

xii. Require documentation on the operation and maintenance of structural BMPs and their effectiveness in reducing the discharge of pollutants to the MS4.

b. Each Permittee must submit a statement certified by its chief legal counsel that the Permittee has the legal authority within its jurisdiction to implement and enforce each of the requirements contained in 40 CFR § 122.26(d)(2)(i)(A-F) and this Order. Each Permittee shall submit this certification annually as part of its Annual Report beginning with the first Annual Report required under this Order. These statements must include:

i. Citation of applicable municipal ordinances or other appropriate legal authorities and their relationship to the requirements of 40 CFR § 122.26(d)(2)(i)(A)-(F) and of this Order; and

ii. Identification of the local administrative and legal procedures available to mandate compliance with applicable municipal ordinances identified in subsection (i) above and therefore with the conditions of this Order, and a statement as to whether enforcement actions can be completed administratively or whether they must be commenced and completed in the judicial system.

3. Fiscal Resources

a. Each Permittee shall conduct a fiscal analysis of the annual capital and operation and maintenance expenditures necessary to implement the requirements of this Order.

b. Each Permittee shall also enumerate and describe in its Annual Report the source(s) of funds used in the past year, and proposed for the coming year, to meet necessary expenditures on the Permittee's storm water management program.

4. Responsibilities of the Permittees

a. Each Permittee is required to comply with the requirements of this Order applicable to discharges within its boundaries. Permittees are not responsible for the implementation of the provisions applicable to other Permittees. Each Permittee shall:

i. Comply with the requirements of this Order and any modifications thereto.

ii. Coordinate among its internal departments and agencies, as necessary, to facilitate the implementation of the requirements of this Order applicable to such Permittees in an efficient and cost-effective manner.

iii. Participate in intra-agency coordination (e.g. Planning Department, Fire Department, Building and Safety, Code Enforcement, Public Health, Parks and Recreation, and others) and inter-agency coordination (e.g. co-Permittees, other NPDES permittees) necessary to successfully implement the provisions of this Order.

5. Public Review

a. All documents submitted to the Regional Water Board in compliance with the terms and conditions of this Order shall be made available to members of the public pursuant to the Freedom of Information Act (5 U.S.C. § 552 (as amended)) and the Public Records Act (Cal. Government Code § 6250 et seq.).

b. All documents submitted to the Regional Water Board Executive Officer for approval shall be made available to the public for a 30-day period to allow for public comment.

6. Regional Water Board Review

Any formal determination or approval made by the Regional Water Board Executive Officer pursuant to the provisions of this Order may be reviewed by the Regional Water Board. A Permittee(s) or a member of the public may request such review upon petition within 30 days of the effective date of the notification of such decision to the Permittee(s) and interested parties on file at the Regional Water Board.

7. Reopener and Modification

a. This Order may be modified, revoked, reissued, or terminated in accordance with the provisions of 40 CFR sections 122.44, 122.62, 122.63, 122.64, 124.5, 125.62, and 125.64. Causes for taking such actions include, but are not limited to:

i. Endangerment to human health or the environment resulting from the permitted activity, including information that the discharge(s) regulated by this Order may have the potential to cause or contribute to adverse impacts on water quality and/or beneficial uses;

ii. Acquisition of newly-obtained information that would have justified the application of different conditions if known at the time of Order adoption;

iii. To address changed conditions identified in required reports or other sources deemed significant by the Regional Water Board;

iv. To incorporate provisions as a result of future amendments to the Basin Plan, such as a new or revised water quality objective or the adoption or reconsideration of a TMDL, including the program of implementation. Within 18 months of the effective date of a revised TMDL or as soon as practicable thereafter, where the revisions warrant a change to the provisions of this Order, the Regional Water Board may modify this Order consistent with the assumptions and requirements of the revised WLA(s), including the program of implementation;

v. To incorporate provisions as a result of new or amended statewide water quality control plans or policies adopted by the State Water Board, or in consideration of any State Water Board action regarding the precedential language of State Water Board Order WQ 99-05;

vi. To incorporate provisions as a result of the promulgation of new or amended federal or state laws or regulations, USEPA guidance concerning regulated activities, or judicial decisions that becomes effective after adoption of this Order.

vii. To incorporate effluent limitations for toxic constituents determined to be present in significant amount in the discharge through a more comprehensive monitoring program included as part of this Order and based on the results of the reasonable potential analysis;

viii. In accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include requirements for the implementation of the watershed management approach or to include new Minimum Levels (MLs); and/or

ix. To include provisions or modifications to WQBELs in Part VI.E and Attachments L-R in this Order prior to the final compliance deadlines, if practicable, that would allow an action-based, BMP compliance demonstration approach with regard to final WQBELs for storm water discharges. Such modifications shall be based on the Regional Water Board's evaluation of whether Watershed Management Programs in Part VI.C. have resulted in attainment of interim WQBELs for storm water and review of relevant research, including but not limited to data and information provided by Permittees and other stakeholders, on storm water quality and the efficacy and reliability of storm water control technologies. Provisions or modifications to WQBELs in Part VI.E. shall only be included in this Order where there is evidence that storm water control technologies can reliably achieve final WQBELs.

b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

i. Violation of any term or condition contained in this Order;

ii. Obtaining this Order by misrepresentation, or failure to disclose all relevant facts; or

iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The filing of a request by a Permittee for a modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

d. This Order may be modified to make corrections or allowances for changes in the permitted activity, following the procedures at 40 CFR section 122.63, if processed as a minor modification. Minor modifications may only:

i. Correct typographical errors; or

ii. Require more frequent monitoring or reporting by a Permittee.

8. Any discharge of waste to any point(s) other than specifically described in this Order is prohibited, and constitutes a violation of this Order.

9. A copy of this Order shall be maintained by each Permittee so as to be available during normal business hours to Permittee employees responsible for implementation of the provisions of this Order and members of the public.

10. The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act to any waste stream that may ultimately be released to waters of the United States, is prohibited, unless specifically authorized elsewhere in this Order or another NPDES permit. This requirement is not applicable to products used for lawn and agricultural purposes.

11. Oil or oily material, chemicals, refuse, or other pollutionable materials shall not be stored or deposited in areas where they may be picked up by rainfall and carried off of the property and/or discharged to surface waters. Any such spill of such materials shall be contained and removed immediately.

12. If there is any storage of hazardous or toxic materials or hydrocarbons at a facility owned and/or operated by a Permittee and if the facility is not manned at all times, a 24-hour emergency response telephone number shall be prominently posted where it can easily be read from the outside.

13. Enforcement

a. Violation of any of the provisions of this Order may subject the violator to any of the penalties described herein or in Attachment D of this Order, or any combination thereof, at the discretion of the prosecuting authority; except that only one kind of penalty may be applied for each kind of violation.

b. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges through the MS4 to receiving waters, may subject a Permittee to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject a Permittee to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

c. The California Water Code provides that any person who violates a waste discharge requirement or a provision of the California Water Code is subject to civil penalties of up to $5,000 per day, $10,000 per day, or $25,000 per day of

violation, or when the violation involves the discharge of pollutants, is subject to civil penalties of up to $10 per gallon per day or $25 per gallon per day of violation; or some combination thereof, depending on the violation, or upon the combination of violations.

d. California Water Code section 13385(h)(1) requires the Regional Water Board to assess a mandatory minimum penalty of three-thousand dollars ($3,000) for each serious violation. Pursuant to California Water Code section 13385(h)(2), a "serious violation" is defined as any waste discharge that violates the effluent limitations contained in the applicable waste discharge requirements for a Group II pollutant by 20 percent or more, or for a Group I pollutant by 40 percent or more. Appendix A of 40 CFR section 123.45 specifies the Group I and II pollutants. Pursuant to California Water Code section 13385.1(a)(1), a "serious violation" is also defined as "a failure to file a discharge monitoring report required pursuant to Section 13383 for each complete period of 30 days following the deadline for submitting the report, if the report is designed to ensure compliance with limitations contained in waste discharge requirements that contain effluent limitations."

e. California Water Code section 13385(i) requires the Regional Water Board to assess a mandatory minimum penalty of three-thousand dollars ($3,000) for each violation whenever a person violates a waste discharge requirement effluent limitation in any period of six consecutive months, except that the requirement to assess the mandatory minimum penalty shall not be applicable to the first three violations within that time period.

f. Pursuant to California Water Code section 13385.1(d), for the purposes of section 13385.1 and subdivisions (h), (i), and (j) of section 13385, "effluent limitation" means a numeric restriction or a numerically expressed narrative restriction, on the quantity, discharge rate, concentration, or toxicity units of a pollutant or pollutants that may be discharged from an authorized location. An effluent limitation may be final or interim, and may be expressed as a prohibition. An effluent limitation, for these purposes, does not include a receiving water limitation, a compliance schedule, or a best management practice.

g. Unlike subdivision (c) of California Water Code section 13385, where violations of effluent limitations may be assessed administrative civil liability on a per day basis, the mandatory minimum penalties provisions identified above require the Regional Water Board to assess mandatory minimum penalties for "each violation" of an effluent limitation. Some water quality-based effluent limitations in Attachments L through R of this Order (e.g., trash, as described immediately below) are expressed as annual effluent limitations. Therefore, for such limitations, there can be no more than one violation of each interim or final effluent limitation per year.

h. Trash TMDLs.

i. Consistent with the 2009 amendments to Order No. 01-182 to incorporate the Los Angeles River Trash TMDL, the water quality-based effluent limitations in Attachments L through R of this Order for trash are expressed as annual effluent limitations. Therefore, for such limitations, there can be no more than one violation of each interim or final effluent limitation per year. Trash is considered a Group I pollutant, as specified in Appendix A to 40 CFR section 123.45. Therefore, each annual violation of a trash effluent limitation in Attachments L through R of this Order by forty percent or more would be considered a "serious violation" under California Water Code section 13385(h). With respect to the final effluent limitation of zero trash, any detectable discharge of trash necessarily is a serious violation, in accordance with the State Water Board's Enforcement Policy. Violations of the effluent limitations in Attachments L through R of this Order would not constitute "chronic" violations that would give rise to mandatory liability under California Water Code section 13385(i) because four or more violations of the effluent limitations subject to a mandatory penalty cannot occur in a period of six consecutive months.

ii. For the purposes of enforcement under California Water Code section 13385, subdivisions (a), (b), and (c), not every storm event may result in trash discharges. In trash TMDLs adopted by the Regional Water Board, the Regional Water Board states that improperly deposited trash is mobilized during storm events of greater than 0.25 inches of precipitation. Therefore, violations of the effluent limitations are limited to the days of a storm event of greater than 0.25 inches. Once a Permittee has violated the annual effluent limitation, any subsequent discharges of trash during any day of a storm event of greater than 0.25 inches during the same storm year constitutes an additional "day in which the violation [of the effluent limitation] occurs".

14. This Order does not exempt any Permittee from compliance with any other laws, regulations, or ordinances that may be applicable.

15. The provisions of this Order are severable. If any provisions of this Order or the application of any provision of this Order to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Order shall not be affected.

B. Monitoring and Reporting Program (MRP) Requirements

Dischargers shall comply with the MRP and future revisions thereto, in Attachment E of this Order or may, in coordination with an approved Watershed Management Program per Part VI.C, implement a customized monitoring program that achieves the five Primary Objectives set forth in Part II.A. of Attachment E and includes the elements set forth in Part II.E. of Attachment E.

C. Watershed Management Programs

1. General

a. The purpose of this Part VI.C is to allow Permittees the flexibility to develop Watershed Management Programs to implement the requirements of this Order on a watershed scale through customized strategies, control measures, and BMPs.

b. Participation in a Watershed Management Program is voluntary and allows a Permittee to address the highest watershed priorities, including complying with the requirements of Part V.A. (Receiving Water Limitations), Part VI.E (Total Maximum Daily Load Provisions) and Attachments L through R, by customizing the control measures in Parts III.A.4 (Prohibitions – Non-Storm Water Discharges) and VI.D (Minimum Control Measures).

c. Customized strategies, control measures, and BMPs shall be implemented on a watershed basis, where applicable, through each Permittee's storm water management program and/or collectively by all participating Permittees through a Watershed Management Program.

d. The Watershed Management Programs shall ensure that discharges from the Permittee's MS4: (i) achieve applicable water quality-based effluent limitations in Part VI.E and Attachments L through R pursuant to the corresponding compliance schedules, (ii) do not cause or contribute to exceedances of receiving water limitations in Parts V.A and VI.E and Attachments L through R, and (iii) do not include non-storm water discharges that are effectively prohibited pursuant to Part III.A. The programs shall also ensure that controls are implemented to reduce the discharge of pollutants to the maximum extent practicable (MEP) pursuant to Part IV.A.1.

e. Watershed Management Programs shall be developed either collaboratively or individually using the Regional Water Board's Watershed Management Areas (WMAs). Where appropriate, WMAs may be separated into subwatersheds to focus water quality prioritization and implementation efforts by receiving water.

f. Each Watershed Management Program shall be consistent with Part VI.C.5-C.8 and shall:

i. Prioritize water quality issues resulting from storm water and non-storm water discharges from the MS4 to receiving waters within each WMA,

ii. Identify and implement strategies, control measures, and BMPs to achieve the outcomes specified in Part VI.C.1.d,

iii. Execute an integrated monitoring program and assessment program pursuant to Attachment E – MRP, Part IV to determine progress towards achieving applicable limitations and/or action levels in Attachment G, and

iv. Modify strategies, control measures, and BMPs as necessary based on analysis of monitoring data collected pursuant to the MRP to ensure that applicable water quality-based effluent limitations and receiving water limitations and other milestones set forth in the Watershed Management Program are achieved in the required timeframes.

v. Provide appropriate opportunity for meaningful stakeholder input, including but not limited to, a permit-wide watershed management program technical advisory committee (TAC) that will advise and participate in the development of the Watershed Management Programs and enhanced Watershed Management Programs from month 6 through the date of program approval. The composition of the TAC may include at least one Permittee representative from each Watershed Management Area for which a Watershed Management Program will be developed, and must include a minimum of one public representative from a non-governmental organization with public membership, and staff from the Regional Water Board and USEPA Region IX.

g. Permittees may elect to develop an enhanced Watershed Management Program (EWMP). An EWMP is one that comprehensively evaluates opportunities, within the participating Permittees' collective jurisdictional area in a Watershed Management Area, for collaboration among Permittees and other partners on multi-benefit regional projects that, wherever feasible, retain (i) all non-storm water runoff and (ii) all storm water runoff from the 85th percentile, 24-hour storm event for the drainage areas tributary to the projects, while also achieving other benefits including flood control and water supply, among others. In drainage areas within the EWMP area where retention of the 85th percentile, 24-hour storm event is not feasible, the EWMP shall include a Reasonable Assurance Analysis to demonstrate that applicable water quality based effluent limitations and receiving water limitations shall be achieved through implementation of other watershed control measures. An EWMP shall:

i. Be consistent with the provisions in Part VI.C.1.a.-f and VI.C.5-C.8;

ii. Incorporate applicable State agency input on priority setting and other key implementation issues;

iii. Provide for meeting water quality standards and other CWA obligations by utilizing provisions in the CWA and its implementing regulations, policies and guidance;

iv. Include multi-benefit regional projects to ensure that MS4 discharges achieve compliance with all final WQBELs set forth in Part VI.E. and do not cause or contribute to exceedances of receiving water limitations in Part V.A. by retaining through infiltration or capture and reuse the storm water volume from the 85th percentile, 24-hour storm for the drainage areas tributary to the multi-benefit regional projects.;

v. In drainage areas where retention of the storm water volume from the 85th percentile, 24-hour event is not technically feasible, include other watershed control measures to ensure that MS4 discharges achieve compliance with all interim and final WQBELs set forth in Part VI.E. with compliance deadlines occurring after approval of a EWMP and to ensure that MS4 discharges do not cause or contribute to exceedances of receiving water limitations in Part V.A.;

vi. Maximize the effectiveness of funds through analysis of alternatives and the selection and sequencing of actions needed to address human health and water quality related challenges and non-compliance;

vii. Incorporate effective innovative technologies, approaches and practices, including green infrastructure;

viii. Ensure that existing requirements to comply with technology-based effluent limitations and core requirements (e.g., including elimination of non-storm water discharges of pollutants through the MS4, and controls to reduce the discharge of pollutants in storm water to the maximum extent practicable) are not delayed;

ix. Ensure that a financial strategy is in place.

2. Compliance with Receiving Water Limitations Not Otherwise Addressed by a TMDL through a WMP or EWMP

a. For receiving water limitations in Part V.A. associated with water body-pollutant combinations not addressed through a TMDL, but which a Permittee elects to address through a Watershed Management Program or EWMP as set forth in this Part VI.C., a Permittee shall comply as follows:

i. For pollutants that are in the same class[21] as those addressed in a TMDL for the watershed and for which the water body is identified as impaired on the State's Clean Water Act Section 303(d) List as of the effective date of this Order:

(1) Permittees shall demonstrate that the Watershed Control Measures to achieve the applicable TMDL provisions identified pursuant to Part VI.C.5.b.iv.(3) will also adequately address contributions of the pollutant(s) within the same class from MS4 discharges to receiving waters, consistent with the assumptions and requirements of the corresponding TMDL provisions, including interim and final requirements and deadlines for their achievement, such that the MS4 discharges of the pollutant(s) will not cause or contribute to exceedances of receiving water limitations in Part V.A.

[21] Pollutants are considered in a similar class if they have similar fate and transport mechanisms, can be addressed via the same types of control measures, and within the same timeline already contemplated as part of the Watershed Management Program for the TMDL.

(2) Permittees shall include the water body-pollutant combination(s) in the Reasonable Assurance Analysis in Part VI.C.5.b.iv.(5).

(3) Permittees shall identify milestones and dates for their achievement consistent with those in the corresponding TMDL.

ii. For pollutants that are not in the same class as those addressed in a TMDL for the watershed, but for which the water body is identified as impaired on the State's Clean Water Act Section 303(d) List as of the effective date of this Order:

(1) Permittees shall assess contributions of the pollutant(s) from MS4 discharges to the receiving waters and sources of the pollutant(s) within the drainage area of the MS4 pursuant to Part VI.C.5.a.iii.
(2) Permittees shall identify Watershed Control Measures pursuant to Part VI.C.5.b. that will adequately address contributions of the pollutant(s) from MS4 discharges to receiving waters such that the MS4 discharges of the pollutant(s) will not cause or contribute to exceedances of receiving water limitations in Part V.A.
(3) Permittees shall include the water body-pollutant in the Reasonable Assurance Analysis in Part VI.C.5.b.iv.(5).
(4) Permittees shall identify enforceable requirements and milestones and dates for their achievement to control MS4 discharges such that they do not cause or contribute to exceedances of receiving water limitations within a timeframe(s) that is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary. The time between dates shall not exceed one year. Milestones shall relate to a specific water quality endpoint (e.g., x% of the MS4 drainage area is meeting the receiving water limitations) and dates shall relate either to taking a specific action or meeting a milestone.

(5) Where the final date(s) in (4) is beyond the term of this Order, the following conditions shall apply:

(a) For an EWMP, in drainage areas where retention of (i) all non-storm water runoff and (ii) all storm water runoff from the 85th percentile, 24-hour storm event will be achieved, each participating Permittee shall continue to target implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges that are a source of pollutants to receiving waters.

(b) For a WMP and in areas of a EWMP where retention of the volume in (a) is technically infeasible and where the Regional Water Board determines that MS4 discharges cause or

contribute to the water quality impairment, participating Permittees may initiate development of a stakeholder-proposed TMDL upon approval of the Watershed Management Program or EWMP. For MS4 discharges from these drainage areas to the receiving waters, any extension of this compliance mechanism beyond the term of this Order shall be consistent with the implementation schedule in a TMDL for the waterbody pollutant combination(s) adopted by the Regional Water Board.

iii. For pollutants for which there are exceedances of receiving water limitations in Part V.A., but for which the water body is not identified as impaired on the State's Clean Water Act Section 303(d) List as of the effective date of this Order:

(1) Upon an exceedance of a receiving water limitation, based on data collected pursuant to the MRP and approved IMPs and CIMPs, Permittees shall assess contributions of the pollutant(s) from MS4 discharges to the receiving waters and sources of the pollutant(s) within the drainage area of the MS4 pursuant to Part VI.C.5.a.iii.

(2) If MS4 discharges are identified as a source of the pollutant(s) that has caused or contributed to, or has the potential to cause or contribute to, the exceedance(s) of receiving water limitations in Part V.A., Permittees shall address contributions of the pollutant(s) from MS4 discharges through modifications to the WMP or EWMP pursuant to Part VI.C.8.a.ii.

(a) In a modified WMP or EWMP, Permittees shall identify Watershed Control Measures pursuant to Part VI.C.5.b. that will adequately address contributions of the pollutant(s) from MS4 discharges to receiving waters such that the MS4 discharges of the pollutant(s) will not cause or contribute to exceedances of receiving water limitations in Part V.A.

(b) Permittees shall modify the Reasonable Assurance Analysis pursuant to Part VI.C.5.b.iv.(5) to address the pollutant(s).

(c) Permittees shall identify enforceable requirements and milestones and dates for their achievement to control MS4 discharges such that they do not cause or contribute to exceedances of receiving water limitations within a timeframe(s) that is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary. The time between dates shall not exceed one year. Milestones shall relate to a specific water quality endpoint (e.g., x% of the MS4 drainage area is meeting the receiving water limitations) and dates shall relate either to taking a specific action or meeting a milestone.

(d) Where the final date(s) in (4) is beyond the term of this Order, the following conditions shall apply:

(i) For an EWMP, in drainage areas where retention of (i) all non-storm water runoff and (ii) all storm water runoff from the 85th percentile, 24-hour storm event will be achieved, each participating Permittee shall continue to target implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges that are a source of pollutants to receiving waters.

(ii) For a WMP and in areas of a EWMP where retention of the volume in (a) is technically infeasible, for newly identified exceedances of receiving water limitations, a Permittee may request that the Regional Water Board approve a modification to its WMP or EWMP to include these additional water body-pollutant combinations.

b. A Permittee's full compliance with all requirements and dates for their achievement in an approved Watershed Management Program or EWMP shall constitute a Permittee's compliance with the receiving water limitations provisions in Part V.A. of this Order for the specific water body-pollutant combinations addressed by an approved Watershed Management Program or EWMP.

c. If a Permittee fails to meet any requirement or date for its achievement in an approved Watershed Management Program or EWMP, the Permittee shall be subject to the provisions of Part V.A. for the waterbody-pollutant combination(s) that were to be addressed by the requirement.

d. Upon notification of a Permittee's intent to develop a WMP or EWMP and prior to approval of its WMP or EWMP, a Permittee's full compliance with all of the following requirements shall constitute a Permittee's compliance with the receiving water limitations provisions in Part V.A. not otherwise addressed by a TMDL, if all the following requirements are met:

i. Provides timely notice of its intent to develop a WMP or EWMP,

ii. Meets all interim and final deadlines for development of a WMP or EWMP,

iii. For the area to be covered by the WMP or EWMP, targets implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges of pollutants through the MS4 to receiving waters, to address known contributions of

pollutants from MS4 discharges that cause or contribute to exceedances of receiving water limitations, and

iv. Receives final approval of its WMP or EWMP within 28 or 40 months, respectively.

3. Compliance with Receiving Water Limitations Addressed by a TMDL through a WMP or EWMP

a. A Permittee's full compliance with all requirements and dates for their achievement in an approved Watershed Management Program or EWMP shall constitute a Permittee's compliance with provisions pertaining to applicable interim water quality based effluent limitations and interim receiving water limitations in Part VI.E. and Attachments L-R for the pollutant(s) addressed by the approved Watershed Management Program or EWMP.

b. Upon notification of a Permittee's intent to develop a WMP or EWMP and prior to approval of its WMP or EWMP, a Permittee's full compliance with all of the following requirements shall constitute a Permittee's compliance with the receiving water limitations provisions in Part V.A., if all the following requirements are met:

i. Provides timely notice of its intent to develop a WMP or EWMP,

ii. Meets all interim and final deadlines for development of a WMP or EWMP,

iii. For the area to be covered by the WMP or EWMP, targets implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges of pollutants through the MS4 to receiving waters, to address known contributions of pollutants from MS4 discharges that cause or contribute to exceedances of receiving water limitations, and

iv. Receives final approval of its WMP or EWMP within 28 or 40 months, respectively.

c. Subdivision b. does not apply to receiving water limitations corresponding to final compliance deadlines pursuant to TMDL provisions in Part VI.E. that have passed or will occur prior to approval of a WMP or EWMP.

4. Process

a. Timelines for Implementation

i. Implementation of the following requirements shall occur per the schedule specified in Table 9 below:

Table 9. Watershed Management Program Implementation Requirements

Part	Provision	Due Date
VI.C.4.b	Notify Regional Water Board of intent to develop Watershed Management Program or enhanced WMP and request submittal date for draft program plan	6 months after Order effective date
VI.C.4.c	For Permittee(s) that elect not to implement the conditions of Part VI.C.4.c.i or c.ii, submit draft plan to Regional Water Board	1 year after Order effective date
VI.C.4.c	For Permittee(s) that elect to implement the conditions of Part VI.C.4.c.i or c.ii, submit draft plan to Regional Water Board	18 months after Order effective date
VI.C.4.c.iv	For Permittees that elect to collaborate on an enhanced WMP that meets the requirements of Part VI.C.4.c.iv,submit draft plan to Regional Water Board	18 months after Order effective date, provide final work plan for development of enhanced WMP 30 months after Order effective date, submit draft plan
VI.C.4.c	Comments provided to Permittees by Regional Water Board	4 months after submittal of draft plan
VI.C.4.c	Submit final plan to Regional Water Board	3 months after receipt of Regional Water Board comments on draft plan
VI.C.4.c	Approval or denial of final plan by Regional Water Board or by the Executive Officer on behalf of the Regional Water Board	3 months after submittal of final plan
VI.C.6	Begin implementation of Watershed Management Program or EWMP	Upon approval of final plan
VI.C.8	Comprehensive evaluation of Watershed Management	Every two years from date of

	Program or EWMP and submittal of modifications to plan	approval

b. Permittees that elect to develop a Watershed Management Program or EWMP must notify the Regional Water Board no later than six months after the effective date of this Order.

i. Such notification shall specify if the Permittee(s) are requesting a 12-month or 18-month submittal date for the draft Watershed Management Program, per Part VI.C.4.c.i – ii, or if the Permittees are requesting a 18/30-month submittal date for the draft EWMP per Part VI.C.4.c.iv.

ii. As part of their notice of intent to develop a WMP or EWMP, Permittees shall identify all applicable interim and final trash WQBELs and all other final WQBELs and receiving water limitations pursuant to Part VI.E. and the applicable attachment(s) with compliance deadlines occurring prior to approval of a WMP or EWMP. Permittees shall identify watershed control measures, where possible from existing TMDL implementation plans, that will be implemented by participating Permittees concurrently with the development of a Watershed Management Program or EWMP to ensure that MS4 discharges achieve compliance with applicable interim and final trash WQBELs and all other final WQBELs and receiving water limitations set forth in Part VI.E. and the applicable attachment(s) by the applicable compliance deadlines occurring prior to approval of a WMP or EWMP.

iii. As part of their notification, Permittees electing to develop an EWMP shall submit all of the following in addition to the requirements of Part VI.C.4.b.i.-ii.:

(1) Plan concept and geographical scope,

(2) Cost estimate for plan development,

(3) Executed MOU/agreement among participating Permittees to fund plan development, or final draft MOU among participating Permittees along with a signed letter of intent from each participating City Manager or head of agency. If a final draft MOU is submitted, the MOU shall be fully executed by all participating Permittees within 12 months of the effective date of this Order.

(4) Interim milestones for plan development and deadlines for their achievement,

(5) Identification of, and commitment to fully implement, one structural BMP or a suite of BMPs at a scale that provides meaningful water quality improvement within each watershed covered by the plan within 30 months of the effective date of this Order in addition to

watershed control measures to be implemented pursuant to b.ii. above. The structural BMP or suite of BMPs shall be subject to approval by the Regional Water Board Executive Officer, and

(6) Demonstration that the requirements in Parts VI.C.4.c.iv.(1) and (2) have been met.

c. Permittees that elect to develop a Watershed Management Program shall submit a draft plan to the Regional Water Board as follows:

i. For Permittees that elect to collaborate on the development of a Watershed Management Program, Permittees shall submit the draft Watershed Management Program no later than 18 months after the effective date of this Order if the following conditions are met in greater than 50% of the land area covered by the WMP:

(1) Demonstrate that there are LID ordinances in place and/or commence development of a Low Impact Development (LID) ordinance(s) meeting the requirements of this Order's Planning and Land Development Program within 60 days of the effective date of the Order and have a draft ordinance within 6 months of the effective date of the Order, and

(2) Demonstrate that there are green streets policies in place and/or commence development of a policy(ies) that specifies the use of green street strategies for transportation corridors within 60 days of the effective date of the Order and have a draft policy within 6 months of the effective date of the Order.

(3) Demonstrate in the notification of the intent to develop a Watershed Management Program that Parts VI.C.4.c.i(1) and (2) have been met in greater than 50% of the watershed area.

ii. For a Permittee that elects to develop an individual Watershed Management Program, the Permittee shall submit the draft Watershed Management Program no later than 18 months after the effective date of this Order if the following conditions are met:

(1) Demonstrate that there is a LID ordinance in place for the Permittee's jurisdiction and/or commence development of a Low Impact Development (LID) ordinance for the Permittee's jurisdiction meeting the requirements of this Order's Planning and Land Development Program within 60 days of the effective date of the Order and have a draft ordinance within 6 months of the effective date of the Order, and

(2) Demonstrate that there is a green streets policy in place for the Permittee's jurisdiction and/or commence development of a policy

that specifies the use of green street strategies for transportation corridors within the Permittee's jurisdiction within 60 days of the effective date of the Order and have a draft policy within 6 months of the effective date of the Order.

(3) Demonstrate in the notification of the intent to develop a Watershed Management Program that Parts VI.C.4.c.ii.(1) and (2) have been met.

iii. For Permittees that elect not to implement the conditions under Part VI.C.4.c.i. or Part VI.C.4.c.ii., Permittees shall submit the draft Watershed Management Program no later than 12 months after the effective date of this Order.

iv. For Permittees that elect to collaborate on the development of an EWMP, Permittees shall submit the work plan for development of the EWMP no later than 18 months after the effective date of this Order, and shall submit the draft program no later than 30 months after the effective date of this Order if the following conditions are met in greater than 50% of the land area in the watershed:

(1) Demonstrate that there are LID ordinances in place and/or commence development of a Low Impact Development (LID) ordinance(s) meeting the requirements of this Order's Planning and Land Development Program within 60 days of the effective date of the Order and have a draft ordinance within 6 months of the effective date of the Order, and

(2) Demonstrate that there are green streets policies in place and/or commence development of a policy(ies) that specifies the use of green street strategies for transportation corridors within 60 days of the effective date of the Order and have a draft policy within 6 months of the effective date of the Order.

(3) Demonstrate in the notification of the intent to develop an EWMP that Parts VI.C.4.c.iv.(1) and (2) have been met in greater than 50% of the watershed area.

d. Until the Watershed Management Program or EWMP is approved by the Regional Water Board or by the Executive Officer on behalf of the Regional Water Board, Permittees that elect to develop a Watershed Management Program or EWMP shall:

i. Continue to implement watershed control measures in their existing storm water management programs, including actions within each of the six categories of minimum control measures consistent with 40 CFR section 122.26(d)(2)(iv),

ii. Continue to implement watershed control measures to eliminate non-storm water discharges through the MS4 that are a source of pollutants to receiving waters consistent with CWA section 402(p)(3)(B)(ii), and

iii. Implement watershed control measures, where possible from existing TMDL implementation plans, to ensure that MS4 discharges achieve compliance with interim and final trash WQBELs and all other final WQBELs and receiving water limitations pursuant to Part VI.E. and set forth in Attachments L through R by the applicable compliance deadlines occurring prior to approval of a WMP or EWMP.

e. Permittees that do not elect to develop a Watershed Management Program or EWMP, or that do not have an approved WMP or EWMP within 28 or 40 months, respectively, of the effective date of this Order, shall be subject to the baseline requirements in Part VI.D and shall demonstrate compliance with receiving water limitations pursuant to Part V.A. and with applicable interim water quality-based effluent limitations in Part VI.E pursuant to subparts VI.E.2.d.i.(1)-(3).

f. Permittees subject to the Middle Santa Ana River Watershed Bacteria Indicator TMDL shall submit a Comprehensive Bacteria Reduction Plan (CBRP) for dry weather to the Regional Water Board Executive Officer no later than nine months after the effective date of this Order. The CBRP shall describe, in detail, the specific actions that have been taken or will be taken to achieve compliance with the dry weather water quality-based effluent limitations and the receiving water limitations for the Middle Santa Ana River Watershed Bacteria Indicator TMDL by December 31, 2015. The CBRP shall also establish a schedule for developing a CBRP to comply with the water quality-based effluent limitations and the receiving water limitations for the Middle Santa Ana River Bacteria TMDL during wet weather by December 31, 2025. The CBRP may be developed in lieu of the Watershed Management Program for MS4 discharges of bacteria within the Middle Santa Ana River Watershed.

5. Program Development

a. Identification of Water Quality Priorities

Permittees shall identify the water quality priorities within each WMA that will be addressed by the Watershed Management Program. At a minimum, these priorities shall include achieving applicable water quality-based effluent limitations and/or receiving water limitations established pursuant to TMDLs, as set forth in Part VI.E and Attachments L through R of this Order.

i. Water Quality Characterization. Each plan shall include an evaluation of existing water quality conditions, including characterization of storm water and non-storm water discharges from the MS4 and receiving water quality,

to support identification and prioritization/sequencing of management actions.

ii. Water Body-Pollutant Classification. On the basis of the evaluation of existing water quality conditions, water body-pollutant combinations shall be classified into one of the following three categories:

(1) Category 1 (Highest Priority): Water body-pollutant combinations for which water quality-based effluent limitations and/or receiving water limitations are established in Part VI.E and Attachments L through R of this Order.

(2) Category 2 (High Priority): Pollutants for which data indicate water quality impairment in the receiving water according to the State's Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (State Listing Policy) and for which MS4 discharges may be causing or contributing to the impairment.

(3) Category 3 (Medium Priority): Pollutants for which there are insufficient data to indicate water quality impairment in the receiving water according to the State's Listing Policy, but which exceed applicable receiving water limitations contained in this Order and for which MS4 discharges may be causing or contributing to the exceedance.

iii. Source Assessment. Utilizing existing information, potential sources within the watershed for the water body-pollutant combinations in Categories 1 - 3 shall be identified.

(1) Permittees shall identify known and suspected storm water and non-storm water pollutant sources in discharges to the MS4 and from the MS4 to receiving waters and any other stressors related to MS4 discharges causing or contributing to the water quality priorities. The identification of known and suspected sources of the highest water quality priorities shall consider the following:

(a) Review of available data, including but not limited to:

(i) Findings from the Permittees' Illicit Connections and Illicit Discharge Elimination Programs;

(ii) Findings from the Permittees' Industrial/Commercial Facilities Programs;

(iii) Findings from the Permittees' Development Construction Programs;

(iv) Findings from the Permittees' Public Agency Activities Programs;

(v) TMDL source investigations;

(vi) Watershed model results;

(vii) Findings from the Permittees' monitoring programs, including but not limited to TMDL compliance monitoring and receiving water monitoring; and

(viii) Any other pertinent data, information, or studies related to pollutant sources and conditions that contribute to the highest water quality priorities.

(b) Locations of the Permittees' MS4s, including, at a minimum, all MS4 major outfalls and major structural controls for storm water and non-storm water that discharge to receiving waters.

(c) Other known and suspected sources of pollutants in non-storm water or storm water discharges from the MS4 to receiving waters within the WMA.

iv. Prioritization. Based on the findings of the source assessment, the issues within each watershed shall be prioritized and sequenced. Watershed priorities shall include at a minimum:

(1) TMDLs

(a) Controlling pollutants for which there are water quality-based effluent limitations and/or receiving water limitations with interim or final compliance deadlines within the permit term, or TMDL compliance deadlines that have already passed and limitations have not been achieved.

(b) Controlling pollutants for which there are water quality-based effluent limitations and/or receiving water limitations with interim or final compliance deadlines between September 6, 2012 and October 25, 2017.

(2) Other Receiving Water Considerations

(a) Controlling pollutants for which data indicate impairment or exceedances of receiving water limitations in the receiving water and the findings from the source assessment implicates discharges from the MS4 shall be considered the second highest priority.

b. Selection of Watershed Control Measures

i. Permittees shall identify strategies, control measures, and BMPs to implement through their individual storm water management programs, and collectively on a watershed scale, with the goal of creating an efficient program to focus individual and collective resources on watershed priorities.

ii. The objectives of the Watershed Control Measures shall include:

(1) Prevent or eliminate non-storm water discharges to the MS4 that are a source of pollutants from the MS4 to receiving waters.

(2) Implement pollutant controls necessary to achieve all applicable interim and final water quality-based effluent limitations and/or receiving water limitations pursuant to corresponding compliance schedules.

(3) Ensure that discharges from the MS4 do not cause or contribute to exceedances of receiving water limitations.

iii. Watershed Control Measures may include:

(1) Structural and/or non-structural controls and operation and maintenance procedures that are designed to achieve applicable water quality-based effluent limitations, receiving water limitations in Part VI.E and/or Attachments L through R;

(2) Retrofitting areas of existing development known or suspected to contribute to the highest water quality priorities with regional or sub-regional controls or management measures; and

(3) Stream and/or habitat rehabilitation or restoration projects where stream and/or habitat rehabilitation or restoration are necessary for, or will contribute to demonstrable improvements in the physical, chemical, and biological receiving water conditions and restoration and/or protection of water quality standards in receiving waters.

iv. The following provisions of this Order shall be incorporated as part of the Watershed Management Program:

(1) Minimum Control Measures.

(a) Permittees shall assess the minimum control measures (MCMs) as defined in Part VI.D.4 to Part VI.D.10 of this Order to identify opportunities for focusing resources on the high priority issues in each watershed. For each of the following minimum control measures, Permittees shall identify potential modifications that will address watershed priorities:

(i) Development Construction Program

(ii) Industrial/Commercial Facilities Program

(iii) Illicit Connection and Illicit Discharges Detection and Elimination Program

(iv) Public Agency Activities Program

(v) Public Information and Participation Program

(b) At a minimum, the Watershed Management Program shall include management programs consistent with 40 CFR section 122.26(d)(2)(iv)(A)-(D).

(c) If the Permittee(s) elects to eliminate a control measure identified in Parts VI.D.4, VI.D.5, VI.D.6 and VI.D.8 to VI.D.10 because that specific control measure is not applicable to the Permittee(s), the Permittee(s) shall provide a justification for its elimination. The Planning and Land Development Program is not eligible for elimination.

(d) Such customized actions, once approved as part of the Watershed Management Program, shall replace in part or in whole the requirements in Parts VI.D.4, VI.D.5, VI.D.6 and VI.D.8 to VI.D.10 for participating Permittees.

(2) Non-Storm Water Discharge Measures. Where Permittees identify non-storm water discharges from the MS4 as a source of pollutants that cause or contribute to exceedance of receiving water limitations, the Watershed Control Measures shall include strategies, control measures, and/or BMPs that must be implemented to effectively eliminate the source of pollutants consistent with Parts III.A and VI.D.10. These may include measures to prohibit the non-storm water discharge to the MS4, additional BMPs to reduce pollutants in the non-storm water discharge or conveyed by the non-storm water discharge, diversion to a sanitary sewer for treatment, or strategies to require the non-storm water discharge to be separately regulated under a general NPDES permit.

(3) TMDL Control Measures. Permittees shall compile control measures that have been identified in TMDLs and corresponding implementation plans. Permittees shall identify those control measures to be modified, if any, to most effectively address TMDL requirements within the watershed. If not sufficiently identified in previous documents, or if implementation plans have not yet been developed (e.g., USEPA established TMDLs), the Permittees shall evaluate and identify control measures to achieve water quality-based effluent limitations and/or

receiving water limitations established in this Order pursuant to these TMDLs.

(a) TMDL control measures shall include where necessary control measures to address both storm water and non-storm water discharges from the MS4.

(b) TMDL control measures may include baseline or customized activities covered under the general MCM categories in Part VI.D as well as BMPs and other control measures covered under the non-storm water discharge provisions of Part III.A of this Order.

(c) The WMP shall include, at a minimum, those actions that will be implemented during the permit term to achieve interim and/or final water quality-based effluent limitations and/or receiving water limitations with compliance deadlines within the permit term.

(4) Each plan shall include the following components:

(a) Identification of specific structural controls and non-structural best management practices, including operational source control and pollution prevention, and any other actions or programs to achieve all water quality-based effluent limitations and receiving water limitations contained in this Part VI.E and Attachments L through R to which the Permittee(s) is subject;

(b) For each structural control and non-structural best management practice, the number, type, and location(s) and/or frequency of implementation;

(c) For any pollution prevention measures, the nature, scope, and timing of implementation;

(d) For each structural control and non-structural best management practice, interim milestones and dates for achievement to ensure that TMDL compliance deadlines will be met; and

(e) The plan shall clearly identify the responsibilities of each participating Permittee for implementation of watershed control measures.

(5) Permittees shall conduct a Reasonable Assurance Analysis for each water body-pollutant combination addressed by the Watershed Management Program. A Reasonable Assurance Analysis (RAA) shall be quantitative and performed using a peer-reviewed model in the public domain. Models to be considered for the RAA, without exclusion, are the Watershed Management Modeling System (WMMS), Hydrologic Simulation Program-FORTRAN (HSPF), and the Structural BMP Prioritization and Analysis Tool (SBPAT). The RAA shall commence with assembly of all available, relevant subwatershed data collected within the last 10 years, including land use and pollutant

loading data, establishment of quality assurance/quality control (QA/QC) criteria, QA/QC checks of the data, and identification of the data set meeting the criteria for use in the analysis. Data on performance of watershed control measures needed as model input shall be drawn only from peer-reviewed sources. These data shall be statistically analyzed to determine the best estimate of performance and the confidence limits on that estimate for the pollutants to be evaluated. The objective of the RAA shall be to demonstrate the ability of Watershed Management Programs and EWMPs to ensure that Permittees' MS4 discharges achieve applicable water quality based effluent limitations and do not cause or contribute to exceedances of receiving water limitations.

(a) Permittees shall demonstrate using the RAA that the activities and control measures identified in the Watershed Control Measures will achieve applicable water quality-based effluent limitations and/or receiving water limitations in Attachments L through R with compliance deadlines during the permit term.

(b) Where the TMDL Provisions in Part VI.E and Attachments L through R do not include interim or final water quality-based effluent limitations and/or receiving water limitations with compliance deadlines during the permit term, Permittees shall identify interim milestones and dates for their achievement to ensure adequate progress toward achieving interim and final water quality-based effluent limitations and/or receiving water limitations with deadlines beyond the permit term.

(c) For water body-pollutant combinations not addressed by TMDLs, Permittees shall demonstrate using the RAA that the activities and control measures identified in the Watershed Control Measures will achieve applicable receiving water limitations as soon as possible.

(6) Permittees shall provide documentation that they have the necessary legal authority to implement the Watershed Control Measures identified in the plan, or that other legal authority exists to compel implementation of the Watershed Control Measures.

c. Compliance Schedules

Permittees shall incorporate compliance schedules in Attachments L through R into the plan and, where necessary develop interim milestones and dates for their achievement. Compliance schedules and interim milestones and dates for their achievement shall be used to measure progress towards addressing the highest water quality priorities and achieving applicable water quality-based effluent limitations and/or receiving water limitations.

i. Schedules must be adequate for measuring progress on a watershed scale once every two years.

ii. Schedules must be developed for both the strategies, control measures and BMPs implemented by each Permittee within its jurisdiction and for those that will be implemented by multiple Permittees on a watershed scale.

iii. Schedules shall incorporate the following:

(1) Compliance deadlines occurring within the permit term for all applicable interim and/or final water quality-based effluent limitations and/or receiving water limitations in Part VI.E and Attachments L through R of this Order,

(2) Interim milestones and dates for their achievement within the permit term for any applicable final water quality-based effluent limitation and/or receiving water limitation in Part VI.E and Attachments L through R, where deadlines within the permit term are not otherwise specified.

(3) For watershed priorities related to addressing exceedances of receiving water limitations in Part V.A and not otherwise addressed by Part VI.E:

(a) Milestones based on measureable criteria or indicators, to be achieved in the receiving waters and/or MS4 discharges,

(a) A schedule with dates for achieving the milestones, and

(b) A final date for achieving the receiving water limitations as soon as possible.

(c) The milestones and implementation schedule in (a)-(c) fulfill the requirements in Part V.A.3.a to prepare an Integrated Monitoring Compliance Report.

6. Watershed Management Program Implementation

Each Permittee shall begin implementing the Watershed Management Program or EWMP immediately upon approval of the plan by the Regional Water Board or the Executive Officer on behalf of the Regional Water Board.

a. Permittees may request an extension of deadlines for achievement of interim milestones established pursuant to Part VI.C.4.c.iii.(3) only. Permittees shall provide requests in writing at least 90 days prior to the deadline and shall include in the request the justification for the extension. Extensions shall be subject to approval by the Regional Water Board Executive Officer.

7. Integrated Watershed Monitoring and Assessment

Permittees in each WMA shall develop an integrated monitoring program as set forth in Part IV of the MRP (Attachment E) or implement a customized monitoring program with the primary objective of allowing for the customization of the outfall monitoring program (Parts VIII and IX) in conjunction with an approved Watershed Management Program or EWMP, as defined below. Each monitoring program shall assess progress toward achieving the water quality-based effluent limitations and/or receiving water limitations per the compliance schedules, and progress toward addressing the water quality priorities for each WMA. The customized monitoring program shall be submitted as part of the Watershed Management Program, or where Permittees elect to develop an EWMP, shall be submitted within 18 months of the effective date of this Order. If pursuing a customized monitoring program, the Permittee(s) shall provide sufficient justification for each element of the program that differs from the monitoring program requirements as set forth in Attachment E. Monitoring programs shall be subject to approval by the Executive Officer following a public comment period. The customized monitoring program shall be designed to address the Primary Objectives detailed in Attachment E, Part II.A and shall include the following program elements:

- Receiving Water Monitoring
- Storm Water Outfall Monitoring
- Non-Storm Water Outfall Monitoring
- New Development/Re-Development Effectiveness Tracking
- Regional Studies

8. Adaptive Management Process

a. Watershed Management Program Adaptive Management Process

i. Permittees in each WMA shall implement an adaptive management process, every two years from the date of program approval, adapting the Watershed Management Program or EWMP to become more effective, based on, but not limited to a consideration of the following:

(1) Progress toward achieving interim and/or final water quality-based effluent limitations and/or receiving water limitations in Part VI.E and Attachments L through R, according to established compliance schedules;

(2) Progress toward achieving improved water quality in MS4 discharges and achieving receiving water limitations through implementation of the watershed control measures based on an evaluation of outfall-based monitoring data and receiving water monitoring data;

(3) Achievement of interim milestones;

(4) Re-evaluation of the water quality priorities identified for the WMA based on more recent water quality data for discharges from the MS4 and the receiving water(s) and a reassessment of sources of pollutants in MS4 discharges;

(5) Availability of new information and data from sources other than the Permittees' monitoring program(s) within the WMA that informs the effectiveness of the actions implemented by the Permittees;

(6) Regional Water Board recommendations; and

(7) Recommendations for modifications to the Watershed Management Program solicited through a public participation process.

ii. Based on the results of the adaptive management process, Permittees shall report any modifications, including where appropriate new compliance deadlines and interim milestones, with the exception of those compliance deadlines established in a TMDL, necessary to improve the effectiveness of the Watershed Management Program or EWMP in the Annual Report, as required pursuant to Part XVIII.A.6 of the MRP (Attachment E), and as part of the Report of Waste Discharge (ROWD) required pursuant to Part II.B of Attachment D – Standard Provisions.

(1) The adaptive management process fulfills the requirements in Part V.A.4 to address continuing exceedances of receiving water limitations.

iii. Permittees shall implement any modifications to the Watershed Management Program or EWMP upon approval by the Regional Water Board Executive Officer or within 60 days of submittal if the Regional Water Board Executive Officer expresses no objections.

D. Storm Water Management Program Minimum Control Measures

1. General Requirements

a. Each Permittee shall implement the requirements in Parts VI.D.4 through VI.D.10 below, or may in lieu of the requirements in Parts VI.D.4 through VI.D.10 implement customized actions within each of these general categories of control measures as set forth in an approved Watershed Management Program per Part VI.C. Implementation shall be consistent with the requirements of 40 CFR § 122.26(d)(2)(iv).

b. Timelines for Implementation

i. Unless otherwise noted in Part VI.D, each Permittee that does not elect to develop a Watershed Management Program or EWMP per Part VI.C shall implement the requirements contained in Part VI.D within 6 months after the

effective date of this Order. In the interim, a Permittee shall continue to implement its existing storm water management program, including actions within each of the six categories of minimum control measures consistent with 40 CFR section 122.26(d)(2)(iv).

ii. Permittees that elect to develop a Watershed Management Program or EWMP shall continue to implement their existing storm water management programs, including actions within each of the six categories of minimum control measures consistent with 40 CFR section 122.26(d)(2)(iv) until the Watershed Management Program or EWMP is approved by the Regional Water Board Executive Officer.

2. Progressive Enforcement and Interagency Coordination

a. Each Permittee shall develop and implement a Progressive Enforcement Policy to ensure that (1) regulated Industrial/Commercial facilities, (2) construction sites, (3) development and redevelopment sites with post-construction controls, and (4) illicit discharges are each brought into compliance with all storm water and non-storm water requirements within a reasonable time period as specified below.

i. Follow-up Inspections

In the event that a Permittee determines, based on an inspection or illicit discharge investigation conducted, that a facility or site operator has failed to adequately implement all necessary BMPs, that Permittee shall take progressive enforcement actions which, at a minimum, shall include a follow-up inspection within 4 weeks from the date of the initial inspection and/or investigation.

ii. Enforcement Action

In the event that a Permittee determines that a facility or site operator has failed to adequately implement BMPs after a follow-up inspection, that Permittee shall take enforcement action as established through authority in its municipal code and ordinances, through the judicial system, or refer the case to the Regional Water Board, per the Interagency Coordination provisions below.

iii. Records Retention

Each Permittee shall maintain records, per their existing record retention policies, and make them available on request to the Regional Water Board, including inspection reports, warning letters, notices of violations, and other enforcement records, demonstrating a good faith effort to bring facilities into compliance.

iv. Referral of Violations of Municipal Ordinances and California Water Code § 13260

A Permittee may refer a violation(s) of its municipal storm water ordinances and/or California Water Code section 13260 by Industrial and Commercial facilities and construction site operators to the Regional Water Board

provided that the Permittee has made a good faith effort of applying its Progressive Enforcement Policy to achieve compliance with its own ordinances. At a minimum, a Permittee's good faith effort must be documented with:

(1) Two follow-up inspections, and

(2) Two warning letters or notices of violation.

v. Referral of Violations of the Industrial and Construction General Permits, including Requirements to File a Notice of Intent or No Exposure Certification

For those facilities or site operators in violation of municipal storm water ordinances and subject to the Industrial and/or Construction General Permits, Permittees may escalate referral of such violations to the Regional Water Board (promptly via telephone or electronically) after one inspection and one written notice of violation (copied to the Regional Water Board) to the facility or site operator regarding the violation. In making such referrals, Permittees shall include, at a minimum, the following documentation:

(1) Name of the facility or site,

(2) Operator of the facility or site,

(3) Owner of the facility or site,

(4) WDID Number (if applicable),

(5) Records of communication with the facility/site operator regarding the violation, which shall include at least one inspection report,

(6) The written notice of violation (copied to the Regional Water Board),

(7) For industrial sites, the industrial activity being conducted at the facility that is subject to the Industrial General Permit, and

(8) For construction sites, site acreage and Risk Factor rating.

b. Investigation of Complaints Transmitted by the Regional Water Board Staff

Each Permittee shall initiate, within one business day,[22] investigation of complaints from facilities within its jurisdiction. The initial investigation shall include, at a minimum, a limited inspection of the facility to confirm validity of the complaint and to determine if the facility is in compliance with municipal storm water ordinances and, if necessary, to oversee corrective action.

c. Assistance with Regional Water Board Enforcement Actions

As directed by the Regional Water Board Executive Officer, Permittees shall assist Regional Water Board enforcement actions by:

i. Assisting in identification of current owners, operators, and lessees of properties and sites.

[22] Permittees may comply with the Permit by taking initial steps (such as logging, prioritizing, and tasking) to "initiate" the investigation within that one business day. However, the Regional Water Board would expect that the initial investigation, including a site visit, to occur within four business days.

ii. Providing staff, when available, for joint inspections with Regional Water Board inspectors.

iii. Appearing to testify as witnesses in Regional Water Board enforcement hearings.

iv. Providing copies of inspection reports and documentation demonstrating application of its Progressive Enforcement Policy.

3. Modifications/Revisions

a. Each Permittee shall modify its storm water management programs, protocols, practices, and municipal codes to make them consistent with the requirements in this Order.

4. Requirements Applicable to the Los Angeles County Flood Control District

a. Public Information and Participation Program (PIPP)

i. General

(1) The LACFCD shall participate in a regional Public Information and Participation Program (PIPP) or alternatively, shall implement its own PIPP that includes the requirements listed in this part. The LACFCD shall collaborate, as necessary, with other Permittees to implement PIPP requirements. The objectives of the PIPP are as follows:

(a) To measurably increase the knowledge of the target audience about the MS4, the adverse impacts of storm water pollution on receiving waters and potential solutions to mitigate the impacts.

(b) To measurably change the waste disposal and storm water pollution generation behavior of target audiences by encouraging the implementation of appropriate alternatives by providing information to the public.

(c) To involve and engage a diversity of socio-economic groups and ethnic communities in Los Angeles County to participate in mitigating the impacts of stormwater pollution.

ii. PIPP Implementation

(1) The LACFCD shall implement the PIPP requirements listed in this Part VI.D.5 using one or more of the following approaches:

(a) By participating in a collaborative PIPP covering the entire service area of the Los Angeles County Flood Control District,

(b) By participating in one or more Watershed Group sponsored PIPPs, and/or

(c) Individually within the service area of the Los Angeles County Flood Control District.

(2) If the LACFCD participates in a collaborative District-wide or Watershed Group PIPP, the LACFCD shall provide the contact information for their appropriate staff responsible for storm water public education activities to the designated PIPP coordinator and contact information changes no later than 30 days after a change occurs.

iii. Public Participation

(1) The LACFCD, in collaboration with the County of Los Angeles, shall continue to maintain the countywide hotline (888-CLEAN-LA) for public reporting of clogged catch basin inlets and illicit discharges/dumping, faded or missing catch basin labels, and general storm water management information.

(a) The LACFCD shall include the reporting information, updated when necessary, in public information, and the government pages of the telephone book, as they are developed or published.

(b) The LACFCD, in collaboration with the County of Los Angeles, shall continue to maintain the www.888cleanla.com website.

iv. Residential Outreach Program

(1) Working in conjunction with a District-wide or Watershed Group sponsored PIPP or individually, the LACFCD shall implement the following activities:

(a) Conduct storm water pollution prevention public service announcements and advertising campaigns

(b) Facilitate the dissemination of public education materials including, at a minimum, information on the proper handling (i.e., disposal, storage and/or use) of:

(i) Vehicle waste fluids

(ii) Household waste materials (i.e., trash and household hazardous waste)

(iii) Construction waste materials

(iv) Pesticides and fertilizers (including integrated pest management practices [IPM] to promote reduced use of pesticides),

(v) Green waste (including lawn clippings and leaves)

(vi) Animal wastes

(c) Facilitate the dissemination of activity-specific storm water pollution prevention public education materials, at a minimum, for the following points of purchase:

(i) Automotive parts stores

(ii) Home improvement centers / lumber yards / hardware stores / paint stores

(iii) Landscaping / gardening centers

(iv) Pet shops / feed stores

(d) Maintain a storm water website, which shall include educational material and opportunities for the public to participate in storm water pollution prevention and clean-up activities listed in Part VI.D.5.

(e) When implementing activities in (a)-(d), the LACFCD shall use effective strategies to educate and involve ethnic communities in storm water pollution prevention through culturally effective methods.

b. Industrial/Commercial Facilities Program

If the LACFCD operates, or has authority over, any facility(ies) identified in Part VI.D.6.b, LACFCD shall comply with the requirements in Part VI.D.6 for those facilities.

c. Public Agency Activities Program

i. General

(1) The LACFCD shall implement a Public Agency Activities Program to minimize storm water pollution impacts from LACFCD-owned or operated facilities and activities. Requirements for Public Agency Facilities and Activities consist of the following components:

(a) Public Construction Activities Management.

(b) Public Facility Inventory

(c) Public Facility and Activity Management

(d) Vehicle and Equipment Washing

(e) Landscape and Recreational Facilities Management

(f) Storm Drain Operation and Maintenance

(g) Parking Facilities Management

(h) Emergency Procedures

(i) Employee and Contractor Training

ii. Public Construction Activities Management

(1) The LACFCD shall implement and comply with the Planning and Land Development Program requirements in Part VI.D.7 of this Order at LACFCD-owned or operated public construction projects that are categorized under the project types identified in Part VI.D.7 of this Order.

(2) The LACFCD shall implement and comply with the appropriate Development Construction Program requirements in Part VI.D.8 of this Order at LACFCD-owned or operated construction projects as applicable.

(3) For LACFCD-owned or operated projects that disturb less than one acre of soil, the LACFCD shall require the implementation of an effective combination of erosion and sediment control BMPs from Table 13 (see Construction Development Program).

(4) The LACFCD shall obtain separate coverage under the Construction General Permit for all LACFCD-owned or operated construction sites that require coverage.

iii. Public Facility Inventory

(1) The LACFCD shall maintain an updated watershed-based inventory and map of all LACFCD-owned or operated facilities that are potential sources of storm water pollution. The incorporation of facility information into a GIS is recommended. Sources to be tracked include but are not limited to the following:

(a) Chemical storage facilities

(b) Equipment storage and maintenance facilities (including landscape maintenance-related operations)

(c) Fueling or fuel storage facilities

(d) Materials storage yards

(e) Pesticide storage facilities

(f) LACFCD buildings

(g) LACFCD vehicle storage and maintenance yards

(h) All other LACFCD-owned or operated facilities or activities that the LACFCD determines may contribute a substantial pollutant load to the MS4.

(2) The LACFCD shall include the following minimum fields of information for each LACFCD-owned or operated facility in its watershed-based inventory and map.

(a) Name of facility

(b) Name of facility manager and contact information

(c) Address of facility (physical and mailing)

(d) A narrative description of activities performed and principal products used at each facility and status of exposure to storm water.

(e) Coverage under the Industrial General Permit or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.

(3) The LACFCD shall update its inventory and map once during the Permit term. The update shall be accomplished through a collection of new information obtained through field activities.

iv. Public Agency Facility and Activity Management

(1) The LACFCD shall obtain separate coverage under the Industrial General Permit for all LACFCD-owned or operated facilities where industrial activities are conducted that require coverage under the Industrial General Permit.

(2) The LACFCD shall implement the following measures for flood management projects:

(a) Develop procedures to assess the impacts of flood management projects on the water quality of receiving waterbodies; and

(b) Evaluate existing structural flood control facilities during the planning phases of major maintenance or rehabilitation projects to determine if retrofitting the facility to provide additional pollutant removal from storm water is feasible.

(3) The LACFCD shall implement and maintain the general and activity-specific BMPs listed in Table 18 (BMPs for Public Agency Facilities and Activities) or an equivalent set of BMPs when such activities occur at LACFCD-owned or operated facilities and field activities (e.g., project sites) including but not limited to the facility types listed in Part VI.D.9.c above, and at any area that includes the activities described in Table 18, or that have the potential to discharge pollutants in storm water.

(4) Any contractors hired by the LACFCD to conduct Public Agency Activities shall be contractually required to implement and maintain the general and activity specific BMPs listed in Table 18 or an equivalent set of BMPs. The LACFCD shall conduct oversight of contractor activities to ensure these BMPs are implemented and maintained.

(5) Effective source control BMPs for the activities listed in Table 18 shall be implemented at LACFCD-owned or operated facilities, unless the pollutant generating activity does not occur. The LACFCD shall require implementation of additional BMPs where storm water from the MS4 discharges to a significant ecological area (SEA, see Attachment A for definition), a water body subject to TMDL Provisions in Part VI.E, or a CWA section 303(d) listed water body (see Part VI.E below). Likewise, for those BMPs that are not adequately protective of water quality standards, the LACFCD shall implement additional site-specific controls.

v. Vehicle and Equipment Washing

(1) The LACFCD shall implement and maintain the activity specific BMPs listed in Table 18 (BMPs for Public Agency Facilities and Activities) or an equivalent set of BMPs for all fixed vehicle and equipment washing areas;

(2) The LACFCD shall prevent discharges of wash waters from vehicle and equipment washing to the MS4 by implementing any of the following measures at existing facilities with vehicle or equipment wash areas:

(a) Self-contain, and haul off for disposal; or

(b) Equip with a clarifier or an alternative pre-treatment device and plumb to the sanitary sewer in accordance with applicable waste water provider regulations

(3) The LACFCD shall ensure that any LACFCD facilities constructed, redeveloped, or replaced shall not discharge wastewater from vehicle and equipment wash areas to the MS4 by plumbing all areas to the sanitary sewer in accordance with applicable waste water provider regulations, or self-containing all waste water/ wash water and hauling to a point of legal disposal.

vi. Landscape and Recreational Facilities Management

(1) The LACFCD shall implement and maintain the activity specific BMPs listed in Table 18 (BMPs for Public Agency Facilities and Activities) or an equivalent set of BMPs for all its public right-of-ways, flood control facilities and open channels and reservoirs, and landscape and recreational facilities and activities.

(2) The LACFCD shall implement an IPM program that includes the following:

(a) Pesticides are used only if monitoring indicates they are needed, and pesticides are applied according to applicable permits and established guidelines.

(b) Treatments are made with the goal of removing only the target organism.

(c) Pest controls are selected and applied in a manner that minimizes risks to human health, beneficial non-target organisms, and the environment.

(d) The use of pesticides, including Organophosphates and Pyrethroids, does not threaten water quality.

(e) Partner, as appropriate, with other agencies and organizations to encourage the use of IPM.

(f) Adopt and verifiably implement policies, procedures, and/ or ordinances requiring the minimization of pesticide use and encouraging the use of IPM techniques (including beneficial insects) for Public Agency Facilities and Activities.

(g) Policies, procedures, and ordinances shall include a schedule to reduce the use of pesticides that cause impairment of surface waters by implementing the following procedures:

(i) Prepare and annually update an inventory of pesticides used by all internal departments, divisions, and other operational units.

(ii) Quantify pesticide use by staff and hired contractors.

(iii) Demonstrate implementation of IPM alternatives where feasible to reduce pesticide use.

(3) The LACFCD shall implement the following requirements:

(a) Use a standardized protocol for the routine and non-routine application of pesticides (including pre-emergents), and fertilizers.

(b) Ensure there is no application of pesticides or fertilizers (1) when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA, (2) within 48 hours of a ½-inch rain event, or (3) when water is flowing off the area where the application is to occur. This requirement does not apply to the application of aquatic pesticides or pesticides which require water for activation.

(c) Ensure that no banned or unregistered pesticides are stored or applied.

(d) Ensure that all staff applying pesticides are certified in the appropriate category by the California Department of Pesticide Regulation, or are under the direct supervision of a pesticide applicator certified in the appropriate category.

(e) Implement procedures to encourage the retention and planting of native vegetation to reduce water, pesticide and fertilizer needs; and

(f) Store pesticides and fertilizers indoors or under cover on paved surfaces, or use secondary containment.

(i) Reduce the use, storage, and handling of hazardous materials to reduce the potential for spills.

(ii) Regularly inspect storage areas.

vii. Storm Drain Operation and Management

(1) The LACFCD shall implement and maintain the activity specific BMPs listed in Table 18 or equivalent set of BMPs for storm drain operation and maintenance.

(2) Ensure that all the material removed from the MS4 does not reenter the system. Solid material shall be dewatered in a contained area and liquid material shall be disposed in accordance with any of the following measures:

(a) Self-contain, and haul off for legal disposal; or

(b) Equip with a clarifier or an alternative pre-treatment device; and plumb to the sanitary sewer in accordance with applicable waste water provider regulations.

(3) Catch Basin Cleaning

(a) In areas that are not subject to a trash TMDL, the LACFCD shall determine priority areas and shall update its map or list of catch basins with their GPS coordinates and priority:

Priority A: Catch basins that are designated as consistently generating the highest volumes of trash and/or debris.

Priority B: Catch basins that are designated as consistently generating moderate volumes of trash and/or debris.

Priority C: Catch basins that are designated as generating low volumes of trash and/or debris.

The map or list shall contain the rationale or data to support priority designations.

(b) In areas not subject to a trash TMDL, the LACFCD shall inspect its catch basins according to the following schedule:

Priority A: A minimum of 3 times during the wet season (October 1 through April 15) and once during the dry season every year.

Priority B: A minimum of once during the wet season and once during the dry season every year.

Priority C: A minimum of once per year.

Catch basins shall be cleaned as necessary on the basis of inspections. At a minimum, LACFCD shall ensure that any catch basin that is determined to be at least 25% full of trash shall be cleaned out. LACFCD shall maintain inspection and cleaning records for Regional Water Board review.

(c) In areas that are subject to a trash TMDL, the subject Permittees shall implement the applicable provisions in Part VI.E.

(4) Catch Basin Labels and Open Channel Signage

(a) LACFCD shall label all catch basin inlets that they own with a legible “no dumping” message.

(b) The LACFCD shall inspect the legibility of the catch basin stencil or label nearest the inlet prior to the wet season every year.

(c) The LACFCD shall record all catch basins with illegible stencils and re-stencil or re-label within 180 days of inspection.

(d) The LACFCD shall post signs, referencing local code(s) that prohibit littering and illegal dumping, at designated public access points to open channels, creeks, urban lakes, and other relevant waterbodies.

(5) Open Channel Maintenance

The LACFCD shall implement a program for Open Channel Maintenance that includes the following:

(a) Visual monitoring of LACFCD owned open channels and other drainage structures for trash and debris at least annually;

(b) Removal of trash and debris from open channels a minimum of once per year before the wet season;

(c) Elimination of the discharge of contaminants produced by storm drain maintenance and clean outs; and

(d) Proper disposal of debris and trash removed during open channel maintenance.

(6) Infiltration from Sanitary Sewer to MS4/Preventive Maintenance

(a) The LACFCD shall implement controls and measures to prevent and eliminate infiltration of seepage from sanitary sewers to its MS4 thorough routine preventive maintenance of its MS4.

(b) The LACFCD shall implement controls to limit infiltration of seepage from sanitary sewers to its MS4 where necessary. Such controls must include:

(i) Adequate plan checking for construction and new development;

(ii) Incident response training for its employees that identify sanitary sewer spills;

(iii) Code enforcement inspections;

(iv) MS4 maintenance and inspections;

(v) Interagency coordination with sewer agencies; and

(vi) Proper education of its staff and contractors conducting field operations on its MS4.

(7) LACFCD-Owned Treatment Control BMPs

(a) The LACFCD shall implement an inspection and maintenance program for all LACFCD-owned treatment control BMPs, including post-construction treatment control BMPs.

(b) The LACFCD shall ensure proper operation of all its treatment control BMPs and maintain them as necessary for proper operation, including all post-construction treatment control BMPs.

(c) Any residual water produced by a treatment control BMP and not being internal to the BMP performance when being maintained shall be:

(i) Hauled away and legally disposed of; or

(ii) Applied to the land without runoff; or

(iii) Discharged to the sanitary sewer system (with permits or authorization); or

(iv) Treated or filtered to remove bacteria, sediments, nutrients, and meet the limitations set in Table 19 (Discharge Limitations for Dewatering Treatment BMPs), prior to discharge to the MS4.

viii. Parking Facilities Management

LACFCD-owned parking lots exposed to storm water shall be kept clear of debris and excessive oil buildup and cleaned no less than 2 times per month and/or inspected no less than 2 times per month to determine if cleaning is necessary. In no case shall a LACFCD-owned parking lot be cleaned less than once a month.

ix. Emergency Procedures

The LACFCD may conduct repairs and rehabilitation of essential public service systems and infrastructure in emergency situations with a self-waiver of the provisions of this Order as follows:

(1) The LACFCD shall abide by all other regulatory requirements, including notification to other agencies as appropriate.

(2) Where the self-waiver has been invoked, the LACFCD shall notify the Regional Water Board Executive Officer of the occurrence of the emergency no later than 30 business days after the situation of emergency has passed.

(3) Minor repairs of essential public service systems and infrastructure in emergency situations (that can be completed in less than one week) are not subject to the notification provisions. Appropriate BMPs to reduce the threat to water quality shall be implemented.

x. Employee and Contractor Training

(1) The LACFCD shall, no later than one year after Order adoption and annually thereafter before June 30, train all of their employees and contractors in targeted positions (whose interactions, jobs, and activities affect storm water quality) on the requirements of the overall storm water management program to:

(a) Promote a clear understanding of the potential for activities to pollute storm water.

(b) Identify opportunities to require, implement, and maintain appropriate BMPs in their line of work.

(2) The LACFCD shall, no later than one year after Order adoption and annually thereafter before June 30, train all of their employees and contractors who use or have the potential to use pesticides or fertilizers (whether or not they normally apply these as part of their work). Outside contractors can self-certify, providing they certify they have received all applicable training required in the Order and have documentation to that effect. Training programs shall address:

(a) The potential for pesticide-related surface water toxicity.

(b) Proper use, handling, and disposal of pesticides.

(c) Least toxic methods of pest prevention and control, including IPM.

(d) Reduction of pesticide use.

(3) The LACFCD shall require appropriate training of contractor employees in targeted positions as described above.

d. Illicit Connections and Illicit Discharge Elimination Program

i. General

(1) The LACFCD shall continue to implement an Illicit Connection and Illicit Discharge (IC/ID) Program to detect, investigate, and eliminate IC/IDs to its MS4. The IC/ID Program must be implemented in accordance with the requirements and performance measures specified in the following subsections.

(2) As stated in Part VI.A.2 of this Order, each Permittee must have adequate legal authority to prohibit IC/IDs to the MS4 and enable enforcement capabilities to eliminate the source of IC/IDs.

(3) The LACFCD's IC/ID Program shall consist of at least the following major program components:

(a) An up-to-date map of LACFCD's MS4

(b) Procedures for conducting source investigations for IC/IDs

(c) Procedures for eliminating the source of IC/IDs

(d) Procedures for public reporting of illicit discharges

(e) Spill response plan

(f) IC/IDs education and training for LACFCD staff

ii. MS4 Mapping

(1) The LACFCD shall maintain an up-to-date and accurate electronic map of its MS4. If possible, the map should be maintained within a GIS. The map must show the following, at a minimum:

(a) Within one year of Permit adoption, the location of outfalls owned and maintained by the LACFCD. Each outfall shall be given an alphanumeric identifier, which must be noted on the map. Each mapped outfall shall be located using a geographic positioning system (GPS). Photographs of the major outfalls shall be taken to provide baseline information to track operation and maintenance needs over time.

(b) The location and length of open channels and underground storm drain pipes with a diameter of 36 inches or greater that are owned and operated by the LACFCD.

(c) The location and name of all waterbodies receiving discharges from those MS4 major outfalls identified in (a).

(d) All LACFCD's dry weather diversions installed within the MS4 to direct flows from the MS4 to the sanitary sewer system, including the owner and operator of each diversion.

(e) By the end of the Permit term, map all known permitted and documented connections to its MS4 system.

(2) The MS4 map shall be updated as necessary.

iii. Illicit Discharge Source Investigation and Elimination

(1) The LACFCD shall develop written procedures for conducting investigations to prioritize and identify the source of all illicit discharges to its MS4, including procedures to eliminate the discharge once the source is located.

(2) At a minimum, the LACFCD shall initiate[23] an investigation(s) to identify and locate the source within one business day of becoming aware of the illicit discharge.

(3) When conducting investigations, the LACFCD shall comply with the following:

(a) Illicit discharges suspected of being sanitary sewage and/or significantly contaminated shall be investigated first.

(b) The LACFCD shall track all investigations to document, at a minimum, the date(s) the illicit discharge was observed; the results

[23] Permittees may comply with the Permit by taking initial steps (such as logging, prioritizing, and tasking) to "initiate" the investigation within one business day. However, the Regional Water Board would expect that the initial investigation, including a site visit, occur within two business days of becoming aware of the illicit discharge.

of the investigation; any follow-up of the investigation; and the date the investigation was closed.

(c) The LACFCD shall prioritize and investigate the source of all observed illicit discharges to its MS4.

(d) If the source of the illicit discharge is found to be a discharge authorized under an NPDES permit, the LACFCD shall document the source and report to the Regional Water Board within 30 days of determination. No further action is required.

(e) If the source of the illicit discharge has been determined to originate from within the jurisdiction of other Permittee(s) with land use authority over the suspected responsible party/parties, the LACFCD shall immediately alert the appropriate Permittee(s) of the problem for further action by the Permittee(s).

(4) When taking corrective action to eliminate illicit discharges, the LACFCD shall comply with the following:

(a) If the source of the illicit discharge has been determined or suspected by the LACFCD to originate within an upstream jurisdiction(s), the LACFCD shall immediately notify the upstream jurisdiction(s), and notify the Regional Water Board within 30 days of such determination and provide all the information collected and efforts taken.

(b) Once the Permittee with land use authority over the suspected responsible party/parties has been alerted, the LACFCD may continue to work in cooperation with the Permittee(s) to notify the responsible party/parties of the problem, and require the responsible party/parties to immediately initiate necessary corrective actions to eliminate the illicit discharge. Upon being notified that the discharge has been eliminated, the LACFCD may, in conjunction with the Permittee(s) conduct a follow-up investigation to verify that the discharge has been eliminated and cleaned up to the satisfaction of the LACFCD. The LACFCD shall document its follow-up investigation. The LACFCD may seek recovery and remediation costs from responsible parties or require compensation for the cost of all inspection and investigation activities. Resulting enforcement actions shall follow the program's Progressive Enforcement Policy.

(c) If the source of the illicit discharge cannot be traced to a suspected responsible party, the LACFCD, in conjunction with other affected Permittees, shall continue implementing the illicit discharge/spill response plan.

(5) In the event the LACFCD and/or other Permittees are unable to eliminate an ongoing illicit discharge following full execution of its legal authority and in accordance with its Progressive Enforcement Policy, including the inability to find the responsible party/parties, or other circumstances prevent the full elimination of an ongoing illicit discharge, the LACFCD and/or other Permittees shall notify the Regional Water Board within 30 days of such determination and provide available information to the Regional Water Board.

iv. Identification and Response to Illicit Connections

(1) Investigation

The LACFCD, upon discovery or upon receiving a report of a suspected illicit connection, shall initiate an investigation within 21 days, to determine the following: (1) source of the connection, (2) nature and volume of discharge through the connection, and (3) responsible party for the connection.

(2) Elimination

The LACFCD, upon confirmation of an illicit connection to its MS4, shall ensure that the connection is:

(a) Permitted or documented, provided the connection will only discharge storm water and non-storm water allowable under this Order or other individual or general NPDES Permits/WDRs, or

(b) Eliminated within 180 days of completion of the investigation, using its formal enforcement authority, if necessary, to eliminate the illicit connection.

(3) Documentation

Formal records must be maintained for all illicit connection investigations and the formal enforcement taken to eliminate illicit connections.

v. Public Reporting of Non-Stormwater Discharges and Spills

(1) The LACFCD shall, in collaboration with the County, continue to maintain the 888-CLEAN-LA hotline and corresponding internet site at www.888cleanla.org to promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s.

(2) The LACFCD shall include information regarding public reporting of illicit discharges or improper disposal on the signage adjacent to open channels as required in Part VI.D.9.h.vi.(4).

(3) The LACFCD shall develop and maintain written procedures that document how complaint calls and internet submissions are received, documented, and tracked to ensure that all complaints are adequately addressed. The procedures shall be evaluated annually to determine whether changes or updates are needed to ensure that the procedures accurately document the methods employed by the LACFCD. Any identified changes shall be made to the procedures subsequent to the annual evaluation.

(4) The LACFCD shall maintain documentation of the complaint calls and internet submissions and record the location of the reported spill or IC/ID and the actions undertaken, including referrals to other agencies, in response to all IC/ID complaints.

vi. Illicit Discharge and Spill Response Plan

(1) The LACFCD shall implement an ID and spill response plan for all spills that may discharge into its system. The ID and spill response plan shall clearly identify agencies responsible for ID and spill response and cleanup, contact information, and shall contain at a minimum the following requirements:

(a) Coordination with spill response teams throughout all appropriate departments, programs and agencies so that maximum water quality protection is provided.

(b) Initiation of investigation of all public and employee ID and spill complaints within one business day of receiving the complaint to assess validity.

(c) Response to ID and spills within 4 hours of becoming aware of the ID or spill, except where such IDs or spills occur on private property, in which case the response should be within 2 hours of gaining legal access to the property.

(d) IDs or spills that may endanger health or the environment shall be reported to appropriate public health agencies and the Office of Emergency Services (OES).

vii. Illicit Connection and Illicit Discharge Education and Training

(1) The LACFCD must continue to implement a training program regarding the identification of IC/IDs for all LACFCD field staff, who, as part of their normal job responsibilities (e.g., storm drain inspection and maintenance), may come into contact with or otherwise observe an illicit discharge or illicit connection to its MS4. Contact information, including the procedure for reporting an illicit discharge, must be included in the LACFCD's fleet vehicles that are used by field staff. Training program documents must be available for review by the Regional Water Board.

(2) The LACFCD's training program should address, at a minimum, the following:

(a) IC/ID identification, including definitions and examples,

(b) investigation,

(c) elimination,

(d) cleanup,

(e) reporting, and

(f) documentation.

(3) The LACFCD must create a list of applicable positions which require IC/ID training and ensure that training is provided at least twice during the term of this Order. The LACFCD must maintain documentation of the training activities.

(4) New LACFCD staff members must be provided with IC/ID training within 180 days of starting employment.

(5) The LACFCD shall require its contractors to train their employees in targeted positions as described above.

5. Public Information and Participation Program

a. General

i. Each Permittee shall implement a Public Information and Participation Program (PIPP) that includes the requirements listed in this Part VI.D.5. Each Permittee shall be responsible for developing and implementing the PIPP and implementing specific PIPP requirements. The objectives of the PIPP are as follows:

(1) To measurably increase the knowledge of the target audiences about the MS4, the adverse impacts of storm water pollution on receiving waters and potential solutions to mitigate the impacts.

(2) To measurably change the waste disposal and storm water pollution generation behavior of target audiences by developing and encouraging the implementation of appropriate alternatives.

(3) To involve and engage a diversity of socio-economic groups and ethnic communities in Los Angeles County to participate in mitigating the impacts of storm water pollution.

b. PIPP Implementation

i. Each Permittee shall implement the PIPP requirements listed in this Part VI.D.4 using one or more of the following approaches:

(1) By participating in a County-wide PIPP,

(2) By participating in one or more Watershed Group sponsored PIPPs, and/or

(3) Or individually within its jurisdiction.

ii. If a Permittee participates in a County-wide or Watershed Group PIPP, the Permittee shall provide the contact information for their appropriate staff responsible for storm water public education activities to the designated PIPP coordinator and contact information changes no later than 30 days after a change occurs.

c. Public Participation

i. Each Permittee, whether participating in a County-wide or Watershed Group sponsored PIPP, or acting individually, shall provide a means for public reporting of clogged catch basin inlets and illicit discharges/dumping, faded or missing catch basin labels, and general storm water and non-storm water pollution prevention information.

(1) Permittees may elect to use the 888-CLEAN-LA hotline as the general public reporting contact or each Permittee or Watershed Group may establish its own hotline, if preferred.

(2) Each Permittee shall include the reporting information, updated when necessary, in public information, and the government pages of the telephone book, as they are developed or published.

(3) Each Permittee shall identify staff or departments who will serve as the contact person(s) and shall make this information available on its website.

(4) Each Permittee is responsible for providing current, updated hotline contact information to the general public within its jurisdiction.

ii. Organize events targeted to residents and population subgroups to educate and involve the community in storm water and non-storm water pollution prevention and clean-up (e.g., education seminars, clean-ups, and community catch basin stenciling).

d. Residential Outreach Program

i. Working in conjunction with a County-wide or Watershed Group sponsored PIPP or individually, each Permittee shall implement the following activities:

(1) Conduct storm water pollution prevention public service announcements and advertising campaigns

(2) Public education materials shall include but are not limited to information on the proper handling (i.e., disposal, storage and/or use) of:

(a) Vehicle waste fluids

(b) Household waste materials (i.e., trash and household hazardous waste, including personal care products and pharmaceuticals)

(c) Construction waste materials

(d) Pesticides and fertilizers (including integrated pest management practices [IPM] to promote reduced use of pesticides)

(e) Green waste (including lawn clippings and leaves)

(f) Animal wastes

(3) Distribute activity specific storm water pollution prevention public education materials at, but not limited to, the following points of purchase:

(a) Automotive parts stores

(b) Home improvement centers / lumber yards / hardware stores/paint stores

(c) Landscaping / gardening centers

(d) Pet shops / feed stores

(4) Maintain storm water websites or provide links to storm water websites via the Permittee's website, which shall include educational material and opportunities for the public to participate in storm water pollution prevention and clean-up activities listed in Part VI.D.4.

(5) Provide independent, parochial, and public schools within in each Permittee's jurisdiction with materials to educate school children (K-12) on storm water pollution. Material may include videos, live presentations, and other information. Permittees are encouraged to work with, or leverage, materials produced by other statewide agencies and associations such as the State Water Board's "Erase the Waste" educational program and the California Environmental Education Interagency Network (CEEIN) to implement this requirement.

(6) When implementing activities in subsections (1)-(5), Permittees shall use effective strategies to educate and involve ethnic communities in storm water pollution prevention through culturally effective methods.

6. Industrial/Commercial Facilities Program

a. General

i. Each Permittee shall implement an Industrial / Commercial Facilities Program that meets the requirements of this Part VI.D.6. The Industrial / Commercial

Facilities Program shall be designed to prevent illicit discharges into the MS4 and receiving waters, reduce industrial / commercial discharges of storm water to the maximum extent practicable, and prevent industrial / commercial discharges from the MS4 from causing or contributing to a violation of receiving water limitations. At a minimum, the Industrial / Commercial Facilities Program shall be implemented in accordance with the requirements listed in this Part VI.D.6, or as approved in a Watershed Management Program per Part VI.C. Minimum program components shall include the following components:

(1) Track

(2) Educate

(3) Inspect

(4) Ensure compliance with municipal ordinances at industrial and commercial facilities that are critical sources of pollutants in storm water

b. Track Critical Industrial / Commercial Sources

i. Each Permittee shall maintain an updated watershed-based inventory or database containing the latitude / longitude coordinates of all industrial and commercial facilities within its jurisdiction that are critical sources of storm water pollution. The inventory or database shall be maintained in electronic format and incorporation of facility information into a Geographical Information System (GIS) is recommended. Critical Sources to be tracked are summarized below:

(1) Commercial Facilities

(a) Restaurants

(b) Automotive service facilities (including those located at automotive dealerships)

(c) Retail Gasoline Outlets

(d) Nurseries and Nursery Centers (Merchant Wholesalers, Nondurable Goods, and Retail Trade)

(2) USEPA “Phase I” Facilities [as specified in 40 CFR §122.26(b)(14)(i)-(xi)]

(3) Other federally-mandated facilities [as specified in 40 CFR §122.26(d)(2)(iv)(C)]

(a) Municipal landfills

(b) Hazardous waste treatment, disposal, and recovery facilities

(c) Industrial facilities subject to section 313 “Toxic Release Inventory” reporting requirements of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) [42 U.S.C. § 11023]

(4) All other commercial or industrial facilities that the Permittee determines may contribute a substantial pollutant load to the MS4.

ii. Each Permittee shall include the following minimum fields of information for each critical source industrial and commercial facility identified in its watershed-based inventory or database:

(1) Name of facility

(2) Name of owner/ operator and contact information

(3) Address of facility (physical and mailing)

(4) North American Industry Classification System (NAICS) code

(5) Standard Industrial Classification (SIC) code

(6) A narrative description of the activities performed and/or principal products produced

(7) Status of exposure of materials to storm water

(8) Name of receiving water

(9) Identification of whether the facility is tributary to a CWA § 303(d) listed water body segment or water body segment subject to a TMDL, where the facility generates pollutants for which the water body segment is impaired.

(10) Ability to denote if the facility is known to maintain coverage under the State Water Board's General NPDES Permit for the Discharge of Stormwater Associated with Industrial Activities (Industrial General Permit) or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.

(11) Ability to denote if the facility has filed a No Exposure Certification with the State Water Board.

iii. Each Permittee shall update its inventory of critical sources at least annually. The update shall be accomplished through collection of new information obtained through field activities or through other readily available inter- and intra-agency informational databases (e.g., business licenses, pretreatment permits, sanitary sewer connection permits, and similar information).

c. Educate Industrial / Commercial Sources

i. At least once during the five-year period of this Order, each Permittee shall notify the owner/operator of each of its inventoried commercial and industrial sites identified in Part VI.D.6.b of the BMP requirements applicable to the site/source.

ii. Business Assistance Program

(1) Each Permittee shall implement a Business Assistance Program to provide technical information to businesses to facilitate their efforts to reduce the discharge of pollutants in storm water. Assistance shall be targeted to select business sectors or small businesses upon a determination that their activities may be contributing substantial pollutant

loads to the MS4 or receiving water. Assistance may include technical guidance and provision of educational materials. The Program may include:

(a) On-site technical assistance, telephone, or e-mail consultation regarding the responsibilities of business to reduce the discharge of pollutants, procedural requirements, and available guidance documents.

(b) Distribution of storm water pollution prevention educational materials to operators of auto repair shops; car wash facilities; restaurants and mobile sources including automobile/equipment repair, washing, or detailing; power washing services; mobile carpet, drape, or upholstery cleaning services; swimming pool, water softener, and spa services; portable sanitary services; and commercial applicators and distributors of pesticides, herbicides and fertilizers, if present.

d. Inspect Critical Commercial Sources

i. Frequency of Mandatory Commercial Facility Inspections

Each Permittee shall inspect all commercial facilities identified in Part VI.D.6.b twice during the 5-year term of the Order, provided that the first mandatory compliance inspection occurs no later than 2 years after the effective date of this Order. A minimum interval of 6 months between the first and the second mandatory compliance inspection is required. In addition, each Permittee shall implement the activities outlined in the following subparts.

ii. Scope of Mandatory Commercial Facility Inspections

Each Permittee shall inspect all commercial facilities to confirm that storm water and non-storm water BMPs are being effectively implemented in compliance with municipal ordinances. At each facility, inspectors shall verify that the operator is implementing effective source control BMPs for each corresponding activity. Each Permittee shall require implementation of additional BMPs where storm water from the MS4 discharges to a significant ecological area (SEA), a water body subject to TMDL provisions in Part VI.E, or a CWA § 303(d) listed impaired water body. Likewise, for those BMPs that are not adequately protective of water quality standards, a Permittee may require additional site-specific controls.

e. Inspect Critical Industrial Sources

Each Permittee shall conduct industrial facility compliance inspections as specified below.

i. Frequency of Mandatory Industrial Facility Compliance Inspections

(1) Minimum Inspection Frequency

Each Permittee shall perform an initial mandatory compliance inspection at all industrial facilities identified in Part VI.D.6.b no later than 2 years after the effective date of this Order. After the initial inspection, all

facilities that have not filed a No Exposure Certification with the State Water Board are subject to a second mandatory compliance inspection. A minimum interval of 6 months between the first and the second mandatory compliance inspection is required. A facility need not be inspected more than twice during the term of the Order unless subject to an enforcement action as specified in Part VI.D.6.h below.

(2) Exclusion of Facilities Previously Inspected by the Regional Water Board

Each Permittee shall review the State Water Board's Storm Water Multiple Application and Report Tracking System (SMARTS) database[24] at defined intervals to determine if an industrial facility has recently been inspected by the Regional Water Board. The first interval shall occur approximately 2 years after the effective date of the Order. The Permittee does not need to inspect the facility if it is determined that the Regional Water Board conducted an inspection of the facility within the prior 24 month period. The second interval shall occur approximately 4 years after the effective date of the Order. Likewise, the Permittee does not need to inspect the facility if it is determined that the Regional Water Board conducted an inspection of the facility within the prior 24 month period.

(3) No Exposure Verification

As a component of the first mandatory inspection, each Permittee shall identify those facilities that have filed a No Exposure Certification with the State Water Board. Approximately 3 to 4 years after the effective date of the Order, each Permittee shall evaluate its inventory of industrial facilities and perform a second mandatory compliance inspection at a minimum of 25% of the facilities identified to have filed a No Exposure Certification. The purpose of this inspection is to verify the continuity of the no exposure status.

(4) Exclusion Based on Watershed Management Program

A Permittee is exempt from the mandatory inspection frequencies listed above if it is implementing industrial inspections in accordance with an approved Watershed Management Program per Part VI.C.

ii. Scope of Mandatory Industrial Facility Inspections

Each Permittee shall confirm that each industrial facility:

(1) Has a current Waste Discharge Identification (WDID) number for coverage under the Industrial General Permit, and that a Storm Water Pollution Prevention Plan (SWPPP) is available on-site; ***or***

(2) Has applied for, and has received a current No Exposure Certification for facilities subject to this requirement;

(3) Is effectively implementing BMPs in compliance with municipal ordinances. Facilities must implement the source control BMPs identified

[24] SMARTS is accessible at https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp

in Table 10, unless the pollutant generating activity does not occur. The Permittees shall require implementation of additional BMPs where storm water from the MS4 discharges to a water body subject to TMDL Provisions in Part VI.E, or a CWA § 303(d) listed impaired water body. Likewise, if the specified BMPs are not adequately protective of water quality standards, a Permittee may require additional site-specific controls. For critical sources that discharge to MS4s that discharge to SEAs, each Permittee shall require operators to implement additional pollutant-specific controls to reduce pollutants in storm water runoff that are causing or contributing to exceedances of water quality standards.

(4) Applicable industrial facilities identified as not having either a current WDID or No Exposure Certification shall be notified that they must obtain coverage under the Industrial General Permit and shall be referred to the Regional Water Board per the Progressive Enforcement Policy procedures identified in Part VI.D.2.

f. Source Control BMPs for Commercial and Industrial Facilities

Effective source control BMPs for the activities listed in Table 10 shall be implemented at commercial and industrial facilities, unless the pollutant generating activity does not occur:

Table 10. Source Control BMPs at Commercial and Industrial Facilities

Pollutant-Generating Activity	BMP Narrative Description
Unauthorized Non-Storm water Discharges	Effective elimination of non-storm water discharges
Accidental Spills/ Leaks	Implementation of effective spills/ leaks prevention and response procedures
Vehicle/ Equipment Fueling	Implementation of effective fueling source control devices and practices
Vehicle/ Equipment Cleaning	Implementation of effective equipment/ vehicle cleaning practices and appropriate wash water management practices
Vehicle/ Equipment Repair	Implementation of effective vehicle/ equipment repair practices and source control devices
Outdoor Liquid Storage	Implementation of effective outdoor liquid storage source controls and practices
Outdoor Equipment Operations	Implementation of effective outdoor equipment source control devices and practices
Outdoor Storage of Raw Materials	Implementation of effective source control practices and structural devices
Storage and Handling of Solid Waste	Implementation of effective solid waste storage/ handling practices and appropriate control measures
Building and Grounds Maintenance	Implementation of effective facility maintenance practices

Pollutant-Generating Activity	BMP Narrative Description
Parking/ Storage Area Maintenance	Implementation of effective parking/ storage area designs and housekeeping/ maintenance practices
Storm water Conveyance System Maintenance Practices	Implementation of proper conveyance system operation and maintenance protocols
Pollutant-Generating Activity	**BMP Narrative Description from Regional Water Board Resolution No. 98-08**
Sidewalk Washing	**1.** Remove trash, debris, and free standing oil/grease spills/leaks (use absorbent material, if necessary) from the area before washing; and **2.** Use high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area.
Street Washing	Collect and divert wash water to the sanitary sewer – publically owned treatment works (POTW). Note: POTW approval may be needed.

g. Significant Ecological Areas (SEAs)

See VI.D.6.e.ii.3.

h. Progressive Enforcement

Each Permittee shall implement its Progressive Enforcement Policy to ensure that Industrial / Commercial facilities are brought into compliance with all storm water requirements within a reasonable time period. See Part VI.D.2 for requirements for the development and implementation of a Progressive Enforcement Policy.

7. Planning and Land Development Program

a. Purpose

i. Each Permittee shall implement a Planning and Land Development Program pursuant to Part VI.D.7.b for all New Development and Redevelopment projects subject to this Order to:

(1) Lessen the water quality impacts of development by using smart growth practices such as compact development, directing development towards existing communities via infill or redevelopment, and safeguarding of environmentally sensitive areas.

(2) Minimize the adverse impacts from storm water runoff on the biological integrity of Natural Drainage Systems and the beneficial uses of water

bodies in accordance with requirements under CEQA (Cal. Pub. Resources Code § 21000 et seq.).

(3) Minimize the percentage of impervious surfaces on land developments by minimizing soil compaction during construction, designing projects to minimize the impervious area footprint, and employing Low Impact Development (LID) design principles to mimic predevelopment hydrology through infiltration, evapotranspiration and rainfall harvest and use.

(4) Maintain existing riparian buffers and enhance riparian buffers when possible.

(5) Minimize pollutant loadings from impervious surfaces such as roof tops, parking lots, and roadways through the use of properly designed, technically appropriate BMPs (including Source Control BMPs such as good housekeeping practices), LID Strategies, and Treatment Control BMPs.

(6) Properly select, design and maintain LID and Hydromodification Control BMPs to address pollutants that are likely to be generated, reduce changes to pre-development hydrology, assure long-term function, and avoid the breeding of vectors[25].

(7) Prioritize the selection of BMPs to remove storm water pollutants, reduce storm water runoff volume, and beneficially use storm water to support an integrated approach to protecting water quality and managing water resources in the following order of preference:

(a) On-site infiltration, bioretention and/or rainfall harvest and use.

(b) On-site biofiltration, off-site ground water replenishment, and/or off-site retrofit.

b. Applicability

i. New Development Projects

(1) Development projects subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate storm water pollution, prior to completion of the project(s), are:

(a) All development projects equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious surface area

(b) Industrial parks 10,000 square feet or more of surface area

(c) Commercial malls 10,000 square feet or more surface area

(d) Retail gasoline outlets 5,000 square feet or more of surface area

(e) Restaurants (SIC 5812) 5,000 square feet or more of surface area

[25] Treatment BMPs when designed to drain within 96 hours of the end of rainfall minimize the potential for the breeding of vectors. See California Department of Public Health ***Best Management Practices for Mosquito Control in California*** (2012) at http://www.westnile.ca.gov/resources.php

(f) Parking lots 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces

(g) Street and road construction of 10,000 square feet or more of impervious surface area shall follow USEPA guidance regarding Managing Wet Weather with Green Infrastructure: Green Streets[26] (December 2008 EPA-833-F-08-009) to the maximum extent practicable. Street and road construction applies to standalone streets, roads, highways, and freeway projects, and also applies to streets within larger projects.

(h) Automotive service facilities (SIC 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) 5,000 square feet or more of surface area

(i) Redevelopment projects in subject categories that meet Redevelopment thresholds identified in Part VI.D.6.b.ii (Redevelopment Projects) below

(j) Projects located in or directly adjacent to, or discharging directly to a Significant Ecological Area (SEA), where the development will:

(i) Discharge storm water runoff that is likely to impact a sensitive biological species or habitat; and

(ii) Create 2,500 square feet or more of impervious surface area

(k) Single-family hillside homes. To the extent that a Permittee may lawfully impose conditions, mitigation measures or other requirements on the development or construction of a single-family home in a hillside area as defined in the applicable Permittee's Code and Ordinances, each Permittee shall require that during the construction of a single-family hillside home, the following measures are implemented:

(i) Conserve natural areas

(ii) Protect slopes and channels

(iii) Provide storm drain system stenciling and signage

(iv) Divert roof runoff to vegetated areas before discharge unless the diversion would result in slope instability

(v) Direct surface flow to vegetated areas before discharge unless the diversion would result in slope instability.

ii. Redevelopment Projects

(1) Redevelopment projects subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate storm water pollution, prior to completion of the project(s), are:

(a) Land-disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area

[26] http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm

on an already developed site on development categories identified in Part VI.D.6.c. (New Development/Redevelopment Performance Criteria).

(b) Where Redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction storm water quality control requirements, the entire project must be mitigated.

(c) Where Redevelopment results in an alteration of less than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction storm water quality control requirements, only the alteration must be mitigated, and not the entire development.

(i) Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of facility or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and roadways which does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Redevelopment does not include the repaving of existing roads to maintain original line and grade.

(ii) Existing single-family dwelling and accessory structures are exempt from the Redevelopment requirements unless such projects create, add, or replace 10,000 square feet of impervious surface area.

(d) In this section, Existing Development or Redevelopment projects shall mean all discretionary permit projects or project phases that have not been deemed complete for processing, or discretionary permit projects without vesting tentative maps that have not requested and received an extension of previously granted approvals within 90 days of adoption of the Order. Projects that have been deemed complete within 90 days of adoption of the Order are not subject to the requirements Section 7.c. For Permittee's projects the effective date shall be the date the governing body or their designee approves initiation of the project design.

(e) Specifically, the Newhall Ranch Project Phases I and II (a.k.a. the Landmark and Mission Village projects) are deemed to be an existing development that will at a minimum, be designed to comply with the Specific LID Performance Standards attached to the Waste Discharge Requirements (Order No. R4-2012-0139). All subsequent phases of the Newhall Ranch Project constructed during the term of this Order shall be subject to the requirements of this Order.

c. New Development/ Redevelopment Project Performance Criteria

i. Integrated Water Quality/Flow Reduction/Resources Management Criteria

(1) Each Permittee shall require all New Development and Redevelopment projects (referred to hereinafter as "new projects") identified in Part VI.D.7.b to control pollutants, pollutant loads, and runoff volume emanating from the project site by: (1) minimizing the impervious surface area and (2) controlling runoff from impervious surfaces through infiltration, bioretention and/or rainfall harvest and use.

(2) Except as provided in Part VI.D.7.c.ii. (Technical Infeasibility or Opportunity for Regional Ground Water Replenishment), Part VI.D.7.d.i (Local Ordinance Equivalence), or Part VI.D.7.c.v (Hydromodification), below, each Permittee shall require the project to retain on-site the Stormwater Quality Design Volume (SWQDv) defined as the runoff from:

(a) The 0.75-inch, 24-hour rain event or

(b) The 85th percentile, 24-hour rain event, as determined from the Los Angeles County 85th percentile precipitation isohyetal map, ***whichever is greater***.

(3) Bioretention and biofiltration systems shall meet the design specifications provided in Attachment H to this Order unless otherwise approved by the Regional Water Board Executive Officer.

(4) When evaluating the potential for on-site retention, each Permittee shall consider the maximum potential for evapotranspiration from green roofs and rainfall harvest and use.

ii. Alternative Compliance for Technical Infeasibility or Opportunity for Regional Ground Water Replenishment

(1) In instances of technical infeasibility or where a project has been determined to provide an opportunity to replenish regional ground water supplies at an offsite location, each Permittee may allow projects to comply with this Order through the alternative compliance measures as described in Part VI.D.7.c.iii.

(2) To demonstrate technical infeasibility, the project applicant must demonstrate that the project cannot reliably retain 100 percent of the SWQDv on-site, even with the maximum application of green roofs and rainwater harvest and use, and that compliance with the applicable post-construction requirements would be technically infeasible by submitting a site-specific hydrologic and/or design analysis conducted and endorsed by a registered professional engineer, geologist, architect, and/or landscape architect. Technical infeasibility may result from conditions including the following:

(a) The infiltration rate of saturated in-situ soils is less than 0.3 inch per hour and it is not technically feasible to amend the in-situ soils to attain an infiltration rate necessary to achieve reliable performance of infiltration or bioretention BMPs in retaining the SWQDv on-site.

(b) Locations where seasonal high ground water is within 5 to 10 feet of the surface,

(c) Locations within 100 feet of a ground water well used for drinking water,

(d) Brownfield development sites where infiltration poses a risk of causing pollutant mobilization,

(e) Other locations where pollutant mobilization is a documented concern[27],

(f) Locations with potential geotechnical hazards, or

(g) Smart growth and infill or redevelopment locations where the density and/ or nature of the project would create significant difficulty for compliance with the on-site volume retention requirement.

(3) To utilize alternative compliance measures to replenish ground water at an offsite location, the project applicant shall demonstrate ***(i)*** why it is not advantageous to replenish ground water at the project site, ***(ii)*** that ground water can be used for beneficial purposes at the offsite location, and ***(iii)*** that the alternative measures shall also provide equal or greater water quality benefits to the receiving surface water than the Water Quality/Flow Reduction/Resource Management Criteria in Part VI.7.D.c.i.

iii. Alternative Compliance Measures

When a Permittee determines a project applicant has demonstrated that it is technically infeasible to retain 100 percent of the SWQDv on-site, or is proposing an alternative offsite project to replenish regional ground water supplies, the Permittee shall require one of the following mitigation options:

(1) On-site Biofiltration

(a) If using biofiltration due to demonstrated technical infeasibility, then the new project must biofiltrate 1.5 times the portion of the SWQDv that is not reliably retained on-site, as calculated by Equation 1 below.

Equation 1:

$$Bv = 1.5 * [SWQDv - Rv]$$

Where:

Bv = biofiltration volume

[27] Pollutant mobilization is considered a documented concern at or near properties that are contaminated or store hazardous substances underground.

SWQDv = the storm water runoff from a 0.75 inch, 24-hour storm or the 85th percentile storm, ***whichever is greater***.

Rv = volume reliably retained on-site

(b) Conditions for On-site Biofiltration

(i) Biofiltration systems shall meet the design specifications provided in Attachment H to this Order unless otherwise approved by the Regional Water Board Executive Officer.

(ii) Biofiltration systems discharging to a receiving water that is included on the Clean Water Act section 303(d) list of impaired water quality-limited water bodies due to nitrogen compounds or related effects shall be designed and maintained to achieve enhanced nitrogen removal capability. See Attachment H for design criteria for underdrain placement to achieve enhanced nitrogen removal.

(2) Offsite Infiltration

(a) Use infiltration or bioretention BMPs to intercept a volume of storm water runoff equal to the SWQDv, less the volume of storm water runoff reliably retained on-site, at an approved offsite project, and

(b) Provide pollutant reduction (treatment) of the storm water runoff discharged from the project site in accordance with the Water Quality Mitigation Criteria provided in Part VI.D.7.c.iv.

(c) The required offsite mitigation volume shall be calculated by Equation 2 below and equal to:

Equation 2:

$$Mv = 1.0 * [SWQDv - Rv]$$

Where:

Mv = mitigation volume

SWQDv = runoff from the 0.75 inch, 24-hour storm event or the 85th percentile storm, ***whichever is greater***

Rv = the volume of storm water runoff reliably retained on-site.

(3) Ground Water Replenishment Projects

Permittees may propose, in their Watershed Management Program or EWMP, regional projects to replenish regional ground water supplies at offsite locations, provided the groundwater supply has a designated beneficial use in the Basin Plan.

(a) Regional groundwater replenishment projects must use infiltration, ground water replenishment, or bioretention BMPs to intercept a volume of storm water runoff equal to the SWQDv for new development and redevelopment projects, subject to Permittee conditioning and approval for the design and implementation of post-construction controls, within the approved project area, and

(b) Provide pollutant reduction (treatment) of the storm water runoff discharged from development projects, within the project area, subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate storm water pollution in accordance with the Water Quality Mitigation Criteria provided in Part VI.D.7.c.iv.

(c) Permittees implementing a regional ground water replenishment project in lieu of onsite controls shall ensure the volume of runoff captured by the project shall be equal to:

Equation 2:

$$Mv = 1.0 * [SWQDv - Rv]$$

Where:

Mv = mitigation volume

SWQDv = runoff from the 0.75 inch, 24-hour storm event or the 85th percentile storm, whichever is greater

Rv = the volume of storm water runoff reliably retained on-site.

(d) Regional groundwater replenishment projects shall be located in the same sub-watershed (defined as draining to the same HUC-12 hydrologic area in the Basin Plan) as the new development or redevelopment projects which did not implement on site retention BMPs . Each Permittee may consider locations outside of the HUC-12 but within the HUC-10 subwatershed area if there are no opportunities within the HUC-12 subwatershed or if greater pollutant reductions and/or ground water replenishment can be achieved at a location within the expanded HUC-10 subwatershed. The use of a mitigation, ground water replenishment, or retrofit project outside of the HUC-12 subwatershed is subject to the approval of the Executive Officer of the Regional Water Board.

(4) Offsite Project - Retrofit Existing Development

Use infiltration, bioretention, rainfall harvest and use and/or biofiltration BMPs to retrofit an existing development, with similar land uses as the new development or land uses associated with comparable or higher storm water runoff event mean concentrations (EMCs) than the new development.

Comparison of EMCs for different land uses shall be based on published data from studies performed in southern California. The retrofit plan shall be designed and constructed to:

(a) Intercept a volume of storm water runoff equal to the mitigation volume (Mv) as described above in Equation 2, except biofiltration BMPs shall be designed to meet the biofiltration volume as described in Equation 1 and

(b) Provide pollutant reduction (treatment) of the storm water runoff from the project site as described in the Water Quality Mitigation Criteria provided in Part VI.D.7.c.iv.

(5) Conditions for Offsite Projects

(a) Project applicants seeking to utilize these alternative compliance provisions may propose other offsite projects, which the Permittees may approve if they meet the requirements of this subpart.

(b) Location of offsite projects. Offsite projects shall be located in the same sub-watershed (defined as draining to the same HUC-12 hydrologic area in the Basin Plan) as the new development or redevelopment project. Each Permittee may consider locations outside of the HUC-12 but within the HUC-10 subwatershed area if there are no opportunities within the HUC-12 subwatershed or if greater pollutant reductions and/or ground water replenishment can be achieved at a location within the expanded HUC-10 subwatershed. The use of a mitigation, ground water replenishment, or retrofit project outside of the HUC-12 subwatershed is subject to the approval of the Executive Officer of the Regional Water Board.

(c) Project applicant must demonstrate that equal benefits to ground water recharge cannot be met on the project site.

(d) Each Permittee shall develop a prioritized list of offsite mitigation, ground water replenishment and/or retrofit projects, and when feasible, the mitigation must be directed to the highest priority project within the same HUC-12 or if approved by the Regional Water Board Executive Officer, the HUC-10 drainage area, as the new development project.

(e) Infiltration/bioretention shall be the preferred LID BMP for offsite mitigation or ground water replenishment projects. Offsite retrofit projects may include green streets, parking lot retrofits, green roofs, and rainfall harvest and use. Biofiltration BMPs may be considered for retrofit projects when infiltration, bioretention or rainfall harvest and use is technically infeasible.

(f) Each Permittee shall develop a schedule for the completion of offsite projects, including milestone dates to identify, fund, design, and construct the projects. Offsite projects shall be completed as soon as possible, and at the latest, within 4 years of the certificate of occupancy for the first project that contributed funds toward the

construction of the offsite project, unless a longer period is otherwise authorized by the Executive Officer of the Regional Water Board. For public offsite projects, each Permittee must provide in their annual reports a summary of total offsite project funds raised to date and a description (including location, general design concept, volume of water expected to be retained, and total estimated budget) of all pending public offsite projects. Funding sufficient to address the offsite volume must be transferred to the Permittee (for public offsite mitigation projects) or to an escrow account (for private offsite mitigation projects) within one year of the initiation of construction.

(g) Offsite projects must be approved by the Permittee and may be subject to approval by the Regional Water Board Executive Officer, if a third-party petitions the Executive Officer to review the project. Offsite projects will be publicly noticed on the Regional Water Board's website for 30 days prior to approval.

(h) The project applicant must perform the offsite projects as approved by either the Permittee or the Regional Water Board Executive Officer or provide sufficient funding for public or private offsite projects to achieve the equivalent mitigation storm water volume.

(6) Regional Storm Water Mitigation Program

A Permittee or Permittee group may apply to the Regional Water Board for approval of a regional or sub-regional storm water mitigation program to substitute in part or wholly for New and Redevelopment requirements for the area covered by the regional or sub-regional storm water mitigation program. Upon review and a determination by the Regional Water Board Executive Officer that the proposal is technically valid and appropriate, the Regional Water Board may consider for approval such a program if its implementation meets all of the following requirements:

(a) Retains the runoff from the 85th percentile, 24-hour rain event or the 0.75 inch, 24-hour rain event, whichever is greater;
(b) Results in improved storm water quality;
(c) Protects stream habitat;
(d) Promotes cooperative problem solving by diverse interests;
(e) Is fiscally sustainable and has secure funding; and
(f) Is completed in five years including the construction and start-up of treatment facilities.
(g) Nothing in this provision shall be construed as to delay the implementation of requirements for new and redevelopment, as approved in this Order.

(7) Water Quality Mitigation Criteria

(a) Each Permittee shall require all New Development and Redevelopment projects that have been approved for offsite mitigation or ground water replenishment projects as defined in Part VI.D.7.c.ii-iii to also provide treatment of storm water runoff from the project site. Each Permittee shall require these projects to design and implement post-construction storm water BMPs and control measures to reduce pollutant loading as necessary to:

(i) Meet the pollutant specific benchmarks listed in Table 11 at the treatment systems outlet or prior to the discharge to the MS4, and

(ii) Ensure that the discharge does not cause or contribute to an exceedance of water quality standards at the Permittee's downstream MS4 outfall.

(b) Each Permittee may allow the project proponent to install flow-through modular treatment systems including sand filters, or other proprietary BMP treatment systems with a demonstrated efficiency at least equivalent to a sand filter. The sizing of the flow through treatment device shall be based on a rainfall intensity of:

(i) 0.2 inches per hour, or

(ii) The one year, one-hour rainfall intensity as determined from the most recent Los Angeles County isohyetal map, ***whichever is greater***.

Table 11. Benchmarks Applicable to New Development Treatment BMPs[28]

Conventional Pollutants

Pollutant	Suspended Solids mg/L	Total P mg/L	Total N mg/L		TKN mg/L	
Effluent Concentration	14	0.13	1.28		1.09	

Metals

Pollutant	Total Cd µg/L	Total Cu µg/L	Total Cr µg/L	Total Pb µg/L	Total Zn µg/L
Effluent Concentration	0.3	6	2.8	2.5	23

[28] The treatment control BMP performance benchmarks were developed from the median effluent water quality values of the six highest performing BMPs, per pollutant, in the storm water BMP database (http://www.bmpdatabase.org/, last visited September 25, 2012).

(c) In addition to the requirements for controlling pollutant discharges as described in Part VI.D.7.c.iii. and the treatment benchmarks described above, each Permittee shall ensure that the new development or redevelopment will not cause or contribute to an exceedance of applicable water quality-based effluent limitations established in Part VI.E pursuant to Total Maximum Daily Loads (TMDLs).

iv. Hydromodification (Flow/ Volume/ Duration) Control Criteria

Each Permittee shall require all New Development and Redevelopment projects located within natural drainage systems as described in Part VI.D.7.c.iv.(1)(a)(iii) to implement hydrologic control measures, to prevent accelerated downstream erosion and to protect stream habitat in natural drainage systems. The purpose of the hydrologic controls is to minimize changes in post-development hydrologic storm water runoff discharge rates, velocities, and duration. This shall be achieved by maintaining the project's pre-project storm water runoff flow rates and durations.

(1) Description

(a) Hydromodification control in natural drainage systems shall be achieved by maintaining the Erosion Potential (Ep) in streams at a value of 1, unless an alternative value can be shown to be protective of the natural drainage systems from erosion, incision, and sedimentation that can occur as a result of flow increases from impervious surfaces and prevent damage to stream habitat in natural drainage system tributaries (see Attachment J - Determination of Erosion Potential).

(ii) Hydromodification control may include one, or a combination of on-site, regional or sub-regional hydromodification control BMPs, LID strategies, or stream and riparian buffer restoration measures. Any in-stream restoration measure shall not adversely affect the beneficial uses of the natural drainage systems.

(iii) Natural drainage systems that are subject to the hydromodification assessments and controls as described in this Part of the Order, include all drainages that have not been improved (e.g., channelized or armored with concrete, shotcrete, or rip-rap) or drainage systems that are tributary to a natural drainage system, except as provided in Part VI.D.7c.iv.(1)(b)--Exemptions to Hydromodification Controls [see below]. The clearing or dredging of a natural drainage system does not constitute an "improvement."

(iv) Until the State Water Board or the Regional Water Board adopts a final Hydromodification Policy or criteria, Permittees shall implement the Hydromodification Control Criteria described in Part VI.D.7.c.iv.(1)(c) to control the potential adverse impacts of changes in hydrology that may result from new development and

redevelopment projects located within natural drainage systems as described in Part VI.D.7.c.iv.(1)(a)(iii).

(b) Exemptions to Hydromodification Controls. Permittees may exempt the following New Development and Redevelopment projects from implementation of hydromodification controls where assessments of downstream channel conditions and proposed discharge hydrology indicate that adverse hydromodification effects to beneficial uses of Natural Drainage Systems are unlikely:

(i) Projects that are replacement, maintenance or repair of a Permittee's existing flood control facility, storm drain, or transportation network.

(ii) Redevelopment Projects in the Urban Core that do not increase the effective impervious area or decrease the infiltration capacity of pervious areas compared to the pre-project conditions.

(iii) Projects that have any increased discharge directly or via a storm drain to a sump, lake, area under tidal influence, into a waterway that has a 100-year peak flow (Q100) of 25,000 cfs or more, or other receiving water that is not susceptible to hydromodification impacts.

(iv) Projects that discharge directly or via a storm drain into concrete or otherwise engineered (not natural) channels (e.g., channelized or armored with rip rap, shotcrete, etc.), which, in turn, discharge into receiving water that is not susceptible to hydromodification impacts (as in Parts VI.D.7.c.iv.(1)(b)(i)-(iii) above).

(v) LID BMPs implemented on single family homes are sufficient to comply with Hydromodification criteria.

(c) Hydromodification Control Criteria. The Hydromodification Control Criteria to protect natural drainage systems are as follows:

(i) Except as provided for in Part VI.D.7.c.iv.(1)(b), projects disturbing an area greater than 1 acre but less than 50 acres within natural drainage systems will be presumed to meet pre-development hydrology if one of the following demonstrations is made:

1. The project is designed to retain on-site, through infiltration, evapotranspiration, and/or harvest and use, the storm water volume from the runoff of the 95th percentile, 24-hour storm, or
2. The runoff flow rate, volume, velocity, and duration for the post-development condition do not exceed the pre-development condition for the 2-year, 24-hour rainfall event. This condition may be substantiated by simple screening models, including those described in ***Hydromodification Effects on Flow Peaks***

and Durations in Southern California Urbanizing Watersheds (Hawley et al., 2011) or other models acceptable to the Executive Officer of the Regional Water Board, or

3. The Erosion Potential (Ep) in the receiving water channel will approximate 1, as determined by a Hydromodification Analysis Study and the equation presented in Attachment J. Alternatively, Permittees can opt to use other work equations to calculate Erosion Potential with Executive Officer approval.

(ii) Projects disturbing 50 acres or more within natural drainage systems will be presumed to meet pre-development hydrology based on the successful demonstration of one of the following conditions:

1. The site infiltrates on-site at least the runoff from a 2-year, 24-hour storm event, or
2. The runoff flow rate, volume, velocity, and duration for the post-development condition does not exceed the pre-development condition for the 2-year, 24-hour rainfall events. These conditions must be substantiated by hydrologic modeling acceptable to the Regional Water Board Executive Officer, or
3. The Erosion Potential (Ep) in the receiving water channel will approximate 1, as determined by a Hydromodification Analysis Study and the equation presented in Attachment J.

(c) Alternative Hydromodification Criteria

(i) Permittees may satisfy the requirement for Hydromodification Controls by implementing the hydromodification requirements in the County of Los Angeles Low Impact Development Manual (2009) for all projects disturbing an area greater than 1 acre within natural drainage systems.

(ii) Each Permittee may alternatively develop and implement watershed specific Hydromodification Control Plans (HCPs). Such plans shall be developed no later than one year after the effective date of this Order.

(iii) The HCP shall identify:

1. Stream classifications
2. Flow rate and duration control methods
3. Sub-watershed mitigation strategies
4. Stream and/or riparian buffer restoration measures, which will maintain the stream and tributary Erosion Potential at 1 unless

an alternative value can be shown to be protective of the natural drainage systems from erosion, incision, and sedimentation that can occur as a result of flow increases from impervious surfaces and prevent damage to stream habitat in natural drainage system tributaries.

(iv) The HCP shall contain the following elements:

1. Hydromodification Management Standards
2. Natural Drainage Areas and Hydromodification Management Control Areas
3. New Development and Redevelopment Projects subject to the HCP
4. Description of authorized Hydromodification Management Control BMPs
5. Hydromodification Management Control BMP Design Criteria
6. For flow duration control methods, the range of flows to control for, and goodness of fit criteria
7. Allowable low critical flow, Qc, which initiates sediment transport
8. Description of the approved Hydromodification Model
9. Any alternate Hydromodification Management Model and Design
10. Stream Restoration Measures Design Criteria
11. Monitoring and Effectiveness Assessment
12. Record Keeping
13. The HCP shall be deemed in effect upon Executive Officer approval.

v. Watershed Equivalence.

Regardless of the methods through which Permittees allow project applicants to implement alternative compliance measures, the subwatershed-wide (defined as draining to the same HUC-12 hydrologic area in the Basin Plan) result of all development must be at least the same level of water quality protection as would have been achieved if all projects utilizing these alternative compliance provisions had complied with Part VI.D.7.c.i (Integrated Water Quality/Flow Reduction/Resource Management Criteria).

vi. Annual Report

Each Permittee shall provide in their annual report to the Regional Water Board a list of mitigation project descriptions and estimated pollutant and flow reduction analyses (compiled from design specifications submitted by project

applicants and approved by the Permittee(s)). Within 4 years of Order adoption, Permittees must submit in their Annual Report, a comparison of the expected aggregate results of alternative compliance projects to the results that would otherwise have been achieved by retaining on site the SWQDv.

d. Implementation

i. Local Ordinance Equivalence

A Permittee that has adopted a local LID ordinance prior to the adoption of this Order, and which includes a retention requirement numerically equal to the 0.75-inch, 24-hour rain event or the 85th percentile, 24-hour rain event, whichever is greater, may submit documentation to the Regional Water Board that the alternative requirements in the local ordinance will provide equal or greater reduction in storm water discharge pollutant loading and volume as would have been obtained through strict conformance with Part VI.D.7.c.i. (Integrated Water Quality/Flow Reduction Resources Management Criteria) or Part VI.D.7.c.ii. (Alternative Compliance Measures for Technical Infeasibility or Opportunity for Regional Ground water Replenishment) of this Order and, if applicable, Part VI.D.7.c.iv. (Hydromodification (Flow/Volume Duration) Control Criteria).

(1) Documentation shall be submitted within 180 days after the effective date of this Order.

(2) The Regional Water Board shall provide public notice of the proposed equivalency determination and a minimum 30-day period for public comment. After review and consideration of public comments, the Regional Water Board Executive Officer will determine whether implementation of the local ordinance provides equivalent pollutant control to the applicable provisions of this Order. Local ordinances that do not strictly conform to the provisions of this Order must be approved by the Regional Water Board Executive Officer as being "equivalent" in effect to the applicable provisions of this Order in order to substitute for the requirements in Parts VI.D.7.c.i and, where applicable, VI.D.7.c.iv.

(3) Where the Regional Water Board Executive Officer determines that a Permittee's local LID ordinance does not provide equivalent pollutant control, the Permittee shall either

(a) Require conformance with Parts VI.D.7.c.i and, where applicable, VI.D.7.c.iv, or

(b) Update its local ordinance to conform to the requirements herein within two years of the effective date of this Order.

ii. Project Coordination

(1) Each Permittee shall facilitate a process for effective approval of post-construction storm water control measures. The process shall include:

(a) Detailed LID site design and BMP review including BMP sizing calculations, BMP pollutant removal performance, and municipal approval; and

(b) An established structure for communication and delineated authority between and among municipal departments that have jurisdiction over project review, plan approval, and project construction through memoranda of understanding or an equivalent agreement.

iii. Maintenance Agreement and Transfer

(1) Prior to issuing approval for final occupancy, each Permittee shall require that all new development and redevelopment projects subject to post-construction BMP requirements, with the exception of simple LID BMPs implemented on single family residences, provide an operation and maintenance plan, monitoring plan, where required, and verification of ongoing maintenance provisions for LID practices, Treatment Control BMPs, and Hydromodification Control BMPs including but not limited to: final map conditions, legal agreements, covenants, conditions or restrictions, CEQA mitigation requirements, conditional use permits, and/ or other legally binding maintenance agreements. Permittees shall require maintenance records be kept on site for treatment BMPs implemented on single family residences.

(a) Verification at a minimum shall include the developer's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and either:

(i) A signed statement from the public entity assuming responsibility for BMP maintenance; or

(ii) Written conditions in the sales or lease agreement, which require the property owner or tenant to assume responsibility for BMP maintenance and conduct a maintenance inspection at least once a year; or

(iii) Written text in project covenants, conditions, and restrictions (CCRs) for residential properties assigning BMP maintenance responsibilities to the Home Owners Association; or

(iv) Any other legally enforceable agreement or mechanism that assigns responsibility for the maintenance of BMPs.

(b) Each Permittee shall require all development projects subject to post-construction BMP requirements to provide a plan for the operation and maintenance of all structural and treatment controls. The plan shall be submitted for examination of relevance to keeping the BMPs in proper working order. Where BMPs are transferred to Permittee for ownership and maintenance, the plan shall also include all relevant costs for upkeep of BMPs in the transfer. Operation and Maintenance plans for private BMPs shall be kept on-site for periodic review by Permittee inspectors.

iv. Tracking, Inspection, and Enforcement of Post-Construction BMPs

(1) Each Permittee shall implement a tracking system and an inspection and enforcement program for new development and redevelopment post-construction storm water no later than 60 days after Order adoption date.

(a) Implement a GIS or other electronic system for tracking projects that have been conditioned for post-construction BMPs. The electronic system, at a minimum, should contain the following information:

(i) Municipal Project ID

(ii) State WDID No.

(iii) Project Acreage

(iv) BMP Type and Description

(v) BMP Location (coordinates)

(vi) Date of Acceptance

(vii) Date of Maintenance Agreement

(viii) Maintenance Records

(ix) Inspection Date and Summary

(x) Corrective Action

(xi) Date Certificate of Occupancy Issued

(xii) Replacement or Repair Date

(b) Inspect all development sites upon completion of construction and prior to the issuance of occupancy certificates to ensure proper installation of LID measures, structural BMPs, treatment control BMPs and hydromodification control BMPs. The inspection may be combined with other inspections provided it is conducted by trained personnel.

(c) Verify proper maintenance and operation of post-construction BMPs previously approved for new development and redevelopment and operated by the Permittee. The post-construction BMP maintenance inspection program shall incorporate the following elements:

(i) The development of a Post-construction BMP Maintenance Inspection checklist

(ii) Inspection at least once every 2 years after project completion, of post-construction BMPs to assess operation conditions with particular attention to criteria and procedures for post-construction

treatment control and hydromodification control BMP repair, replacement, or re-vegetation.

(d) For post-construction BMPs operated and maintained by parties other than the Permittee, the Permittee shall require the other parties to document proper maintenance and operations.

(e) Undertake enforcement action per the established Progressive Enforcement Policy as appropriate based on the results of the inspection. See Part VI.D.2 for requirements for the development and implementation of a Progressive Enforcement Policy.

8. Development Construction Program

a. Each Permittee shall develop, implement, and enforce a construction program that:

i. Prevents illicit construction-related discharges of pollutants into the MS4 and receiving waters.

ii. Implements and maintains structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites.

iii. Reduces construction site discharges of pollutants to the MS4 to the MEP.

iv. Prevents construction site discharges to the MS4 from causing or contributing to a violation of water quality standards.

b. Each Permittee shall establish for its jurisdiction an enforceable erosion and sediment control ordinance for all construction sites that disturb soil.

c. Applicability

The provisions contained in Part VI.D.8.d below apply exclusively to construction sites less than 1 acre. Provisions contained in Part VI.D.8.e – j, apply exclusively to construction sites 1 acre or greater. The requirements contained in this part apply to all activities involving soil disturbance with the exception of agricultural activities. Activities covered by this permit include but are not limited to grading, vegetation clearing, soil compaction, paving, re-paving and linear underground/overhead projects (LUPs).

d. Requirements for Construction Sites Less than One Acre

i. For construction sites less than 1 acre, each Permittee shall:

(1) Through the use of the Permittee's erosion and sediment control ordinance or and/or building permit, require the implementation of an effective combination of erosion and sediment control BMPs from Table 12 to prevent erosion and sediment loss, and the discharge of construction wastes.

Table 12. Applicable Set of BMPs for All Construction Sites

Erosion Controls	Scheduling
	Preservation of Existing Vegetation
Sediment Controls	Silt Fence
	Sand Bag Barrier
	Stabilized Construction Site Entrance/Exit
Non-Storm Water Management	Water Conservation Practices
	Dewatering Operations
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management
	Concrete Waste Management
	Sanitary/Septic Waste Management

(2) Possess the ability to identify all construction sites with soil disturbing activities that require a permit, regardless of size, and shall be able to provide a list of permitted sites upon request of the Regional Water Board. Permittees may use existing permit databases or other tracking systems to comply with these requirements.

(3) Inspect construction sites on as needed based on the evaluation of the factors that are a threat to water quality. In evaluating the threat to water quality, the following factors shall be considered: soil erosion potential; site slope; project size and type; sensitivity of receiving water bodies; proximity to receiving water bodies; non-storm water discharges; past record of non-compliance by the operators of the construction site; and any water quality issues relevant to the particular MS4.

(4) Implement the Permittee's Progressive Enforcement Policy to ensure that construction sites are brought into compliance with the erosion and sediment control ordinance within a reasonable time period. See Part VI.D.2 for requirements for the development and implementation of a Progressive Enforcement Policy.

e. Each Permittee shall require operators of public and private construction sites within its jurisdiction to select, install, implement, and maintain BMPs that comply with its erosion and sediment control ordinance.

f. The requirements contained in this part apply to all activities involving soil disturbance with the exception of agricultural activities. Activities covered by this permit include but are not limited to grading, vegetation clearing, soil compaction, paving, re-paving and linear underground/overhead projects (LUPs).

g. Construction Site Inventory / Electronic Tracking System

i. Each Permittee shall use an electronic system to inventory grading permits, encroachment permits, demolition permits, building permits, or construction permits (and any other municipal authorization to move soil and/ or construct or destruct that involves land disturbance) issued by the Permittee. To satisfy this requirement, the use of a database or GIS system is recommended.

ii. Each Permittee shall complete an inventory and continuously update as new sites are permitted and sites are completed. The inventory / tracking system shall contain, at a minimum:

(1) Relevant contact information for each project (e.g., name, address, phone, email, etc. for the owner and contractor.

(2) The basic site information including location, status, size of the project and area of disturbance.

(3) The proximity all water bodies, water bodies listed as impaired by sediment-related pollutants, and water bodies for which a sediment-related TMDL has been adopted and approved by USEPA.

(4) Significant threat to water quality status, based on consideration of factors listed in Appendix 1 to the Statewide General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit).

(5) Current construction phase where feasible.

(6) The required inspection frequency.

(7) The project start date and anticipated completion date.

(8) Whether the project has submitted a Notice of Intent and obtained coverage under the Construction General Permit.

(9) The date the Permittee approved the Erosion and Sediment Control Plan (ESCP).

(10) Post-Construction Structural BMPs subject to Operation and Maintenance Requirements.

h. Construction Plan Review and Approval Procedures

i. Each Permittee shall develop procedures to review and approve relevant construction plan documents.

ii. The review procedures shall be developed and implemented such that the following minimum requirements are met:

(1) Prior to issuing a grading or building permit, each Permittee shall require each operator of a construction activity within its jurisdiction to prepare and submit an ESCP prior to the disturbance of land for the Permittee's review and written approval. The construction site operator shall be prohibited from commencing construction activity prior to receipt of written approval by the Permittee. Each Permittee shall not approve any ESCP unless it contains appropriate site-specific construction site BMPs that

meet the minimum requirements of a Permittee's erosion and sediment control ordinance.

(2) ESCPs must include the elements of a Storm Water Pollution Prevention Plan (SWPPP). SWPPPs prepared in accordance with the requirements of the Construction General Permit can be accepted as ESCPs.

(3) At a minimum, the ESCP must address the following elements:

(a) Methods to minimize the footprint of the disturbed area and to prevent soil compaction outside of the disturbed area.

(b) Methods used to protect native vegetation and trees.

(c) Sediment/Erosion Control.

(d) Controls to prevent tracking on and off the site.

(e) Non-storm water controls (e.g., vehicle washing, dewatering, etc.).

(f) Materials Management (delivery and storage).

(g) Spill Prevention and Control.

(h) Waste Management (e.g., concrete washout/waste management; sanitary waste management).

(i) Identification of site Risk Level as identified per the requirements in Appendix 1 of the Construction General Permit.

(4) The ESCP must include the rationale for the selection and design of the proposed BMPs, including quantifying the expected soil loss from different BMPs.

(5) Each Permittee shall require that the ESCP is developed and certified by a Qualified SWPPP Developer (QSD).

(6) Each Permittee shall require that all structural BMPs be designed by a licensed California Engineer.

(7) Each Permittee shall require that for all sites, the landowner or the landowner's agent sign a statement on the ESCP as follows:

(a) "I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/ or inaccurate information, failing to update the ESCP to reflect current conditions, or failing to properly and/ or adequately implement the ESCP may result in revocation of grading and/ or other permits or other sanctions provided by law."

(8) Prior to issuing a grading or building permit, each Permittee must verify that the construction site operators have existing coverage under

applicable permits, including, but not limited to the State Water Board's Construction General Permit, and State Water Board 401 Water Quality Certification.

(9) Each Permittee shall develop and implement a checklist to be used to conduct and document review of each ESCP.

i. BMP Implementation Level

i. Each Permittee shall implement technical standards for the selection, installation and maintenance of construction BMPs for all construction sites within its jurisdiction.

ii. The BMP technical standards shall require:

(1) The use of BMPs that are tailored to the risks posed by the project. Sites are to be ranked from Low Risk (Risk 1) to High Risk (Risk 3). Project risks are to be calculated based on the potential for erosion from the site and the sensitivity of the receiving water body. Receiving water bodies that are listed on the Clean Water Act (CWA) Section 303(d) list for sediment or siltation are considered High Risk. Likewise, water bodies with designated beneficial uses of SPWN, COLD, and MIGR are also considered to be High Risk. The combined (sediment/receiving water) site risk shall be calculated using the methods provided in Appendix 1 of the Construction General Permit. At a minimum, the BMP technical standards shall include requirements for High Risk sites as defined in Table 15.

(2) The use of BMPs for all construction sites, sites equal or greater to 1 acre, and for paving projects per Tables 14 and 16 of this Order.

(3) Detailed installation designs and cut sheets for use within ESCPs.

(4) Maintenance expectations for each BMP, or category of BMPs, as appropriate.

iii. Permittees are encouraged to adopt respective BMPs from latest versions of the ***California BMP Handbook, Construction*** or ***Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices (BMPs) Manual*** and addenda. Alternatively, Permittees are authorized to develop or adopt equivalent BMP standards consistent for Southern California and for the range of activities presented below in Tables 13 through 16.

iv. The local BMP technical standards shall be readily available to the development community and shall be clearly referenced within each Permittee's storm water or development services website, ordinance, permit approval process and/or ESCP review forms. The local BMP technical standards shall also be readily available to the Regional Water Board upon request.

v. Local BMP technical standards shall be available for the following:

Table 13. Minimum Set of BMPs for All Construction Sites

Erosion Controls	Scheduling
	Preservation of Existing Vegetation
Sediment Controls	Silt Fence
	Sand Bag Barrier
	Stabilized Construction Site Entrance/Exit
Non-Storm water Management	Water Conservation Practices
	Dewatering Operations
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management
	Concrete Waste Management
	Sanitary/Septic Waste Management

Table 14. Additional BMPs Applicable to Construction Sites Disturbing 1 Acre or More

Erosion Controls	Hydraulic Mulch
	Hydroseeding
	Soil Binders
	Straw Mulch
	Geotextiles and Mats
	Wood Mulching
Sediment Controls	Fiber Rolls
	Gravel Bag Berm
	Street Sweeping and/ or Vacuum
	Storm Drain Inlet Protection
	Scheduling
	Check Dam
Additional Controls	Wind Erosion Controls
	Stabilized Construction Entrance/ Exit
	Stabilized Construction Roadway
	Entrance/ Exit Tire Wash
Non-Storm water Management	Vehicle and Equipment Washing
	Vehicle and Equipment Fueling
	Vehicle and Equipment Maintenance
Waste Management	Material Delivery and Storage
	Spill Prevention and Control

Table 15. Additional Enhanced BMPs for High Risk Sites

Erosion Controls	Hydraulic Mulch
	Hydroseeding
	Soil Binders
	Straw Mulch

	Geotextiles and Mats
	Wood Mulching
	Slope Drains
Sediment Controls	Silt Fence
	Fiber Rolls
	Sediment Basin
	Check Dam
	Gravel Bag Berm
	Street Sweeping and/or Vacuum
	Sand Bag Barrier
	Storm Drain Inlet Protection
Additional Controls	Wind Erosion Controls
	Stabilized Construction Entrance/Exit
	Stabilized Construction Roadway
	Entrance/Exit Tire Wash
	Advanced Treatment Systems*
Non-Storm water Management	Water Conservation Practices
	Dewatering Operations (Ground water dewatering only under NPDES Permit No. CAG994004)
	Vehicle and Equipment Washing
	Vehicle and Equipment Fueling
	Vehicle and Equipment Maintenance
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management

* Applies to public roadway projects.

Table 16. Minimum Required BMPs for Roadway Paving or Repair Operation (For Private or Public Projects)

1.	Restrict paving and repaving activity to exclude periods of rainfall or predicted rainfall unless required by emergency conditions.
2.	Install gravel bags and filter fabric or other equivalent inlet protection at all susceptible storm drain inlets and at manholes to prevent spills of paving products and tack coat.
3.	Prevent the discharge of release agents including soybean oil, other oils, or diesel to the storm water drainage system or receiving waters.
4.	Minimize non storm water runoff from water use for the roller and for evaporative cooling of the asphalt.
5.	Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly.
6.	Collect liquid waste in a container, with a secure lid, for transport to a maintenance facility to be reused, recycled or disposed of properly.
7.	Collect solid waste by vacuuming or sweeping and securing in an

	appropriate container for transport to a maintenance facility to be reused, recycled or disposed of properly.
8.	Cover the "cold-mix" asphalt (i.e., pre-mixed aggregate and asphalt binder) with protective sheeting during a rainstorm.
9.	Cover loads with tarp before haul-off to a storage site, and do not overload trucks.
10.	Minimize airborne dust by using water spray or other approved dust suppressant during grinding.
11.	Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near storm water drainage system or receiving waters.
12.	Protect stockpiles with a cover or sediment barriers during a rain.

j. Construction Site Inspection

i. Each Permittee shall use its legal authority to implement procedures for inspecting public and private construction sites.

ii. The inspection procedures shall be implemented as follows:

(1) Inspect the public and private construction sites as specified in Table 17 below:

Table 17. Inspection Frequencies for Sites One Acre or Greater

Site	Inspection Frequency Shall Occur
a. All sites 1 acre or larger that discharge to a tributary listed by the state as an impaired water for sediment or turbidity under the CWA § 303(d)	(1) when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA[29], (2) within 48 hours of a ½-inch rain event and at (3) least once every two weeks
b. Other sites 1 acre or more determined to be a significant threat to water quality[30]	
c. All other construction sites with 1 acre or more of soil disturbance not meeting the criteria above	At least monthly

(2) Each Permittee shall inspect all phases of construction as follows:

(a) Prior to Land Disturbance

Prior to allowing an operator to commence land disturbance, each Permittee shall perform an inspection to ensure all necessary erosion

[29] www.srh.noaa.gov/forecast

[30] In evaluating the threat to water quality, the following factors shall be considered: soil erosion potential; site slope; project size and type; sensitivity of receiving water bodies; proximity to receiving water bodies; non-storm water discharges; past record of non-compliance by the operators of the construction site; and any water quality issues relevant to the particular MS4.

and sediment structural and non-structural BMP materials and procedures are available per the erosion and sediment control plan.

(b) During Active Construction, including Land Development[31] and Vertical Construction[32]

In accordance with the frequencies specified in Part VI.D.8.j and Table 17 of this Order, each Permittee shall perform an inspection to ensure all necessary erosion and sediment structural and non-structural BMP materials and procedures are available per the erosion and sediment control plan throughout the construction process.

(c) Final Landscaping / Site Stabilization[33]

At the conclusion of the project and as a condition of approving and/or issuing a Certificate of Occupancy, each Permittee shall inspect the constructed site to ensure that all graded areas have reached final stabilization and that all trash, debris, and construction materials, and temporary erosion and sediment BMPs are removed.

(3) Based on the required frequencies above, each construction project shall be inspected a minimum of three times.

(4) Inspection Standard Operating Procedures

Each Permittee shall develop, implement, and revise as necessary, standard operating procedures that identify the inspection procedures each Permittee will follow. Inspections of construction sites, and the standard operating procedures, shall include, but are not limited to:

(a) Verification of active coverage under the Construction General Permit for sites disturbing 1 acre or more, or that are part of a planned development that will disturb 1 acre or more and a process for referring non-filers to the Regional Water Board.

(b) Review of the applicable ESCP and inspection of the construction site to determine whether all BMPs have been selected, installed, implemented, and maintained according to the approved plan and subsequent approved revisions.

(c) Assessment of the appropriateness of the planned and installed BMPs and their effectiveness.

(d) Visual observation and record keeping of non-storm water discharges, potential illicit discharges and connections, and potential discharge of pollutants in storm water runoff.

(e) Development of a written or electronic inspection report generated from an inspection checklist used in the field.

[31] Activities include cuts and fills, rough and finished grading; alluvium removals; canyon cleanouts; rock undercuts; keyway excavations; stockpiling of select material for capping operations; and excavation and street paving, lot grading, curbs, gutters and sidewalks, public utilities, public water facilities including fire hydrants, public sanitary sewer systems, storm sewer system and/or other drainage improvement.
[32] The build out of structures from foundations to roofing, including rough landscaping.
[33] All soil disturbing activities at each individual parcel within the site have been completed.

(f) Tracking of the number of inspections for the inventoried construction sites throughout the reporting period to verify that the sites are inspected at the minimum frequencies required in Table 17 of this Order.

k. Enforcement

Each Permittee shall implement its Progressive Enforcement Policy to ensure that construction sites are brought into compliance with all storm water requirements within a reasonable time period. See Part VI.D.2 for requirements for the development and implementation of a Progressive Enforcement Policy.

l. Permittee Staff Training

i. Each Permittee shall ensure that all staff whose primary job duties are related to implementing the construction storm water program are adequately trained.

ii. Each Permittee may conduct in-house training or contract with consultants. Training shall be provided to the following staff positions of the MS4:

(1) Plan Reviewers and Permitting Staff

Ensure staff and consultants are trained as qualified individuals, knowledgeable in the technical review of local erosion and sediment control ordinance, local BMP technical standards, ESCP requirements, and the key objectives of the State Water Board QSD program. Permittees may provide internal training to staff or require staff to obtain QSD certification.

(2) Erosion Sediment Control/Storm Water Inspectors

Each Permittee shall ensure that its inspectors are knowledgeable in inspection procedures consistent with the State Water Board sponsored program QSD or a Qualified SWPPP Practitioner (QSP) or that a designated person on staff who has been trained in the key objectives of the QSD/QSP programs supervises inspection operations. Each Permittee may provide internal training to staff or require staff to obtain QSD/QSP certification. Each inspector must be knowledgeable of the local BMP technical standards and ESCP requirements.

(3) Third-Party Plan Reviewers, Permitting Staff, and Inspectors

If the Permittee utilizes outside parties to conduct inspections and/or review plans, each Permittee shall ensure these staff are trained per the requirements listed above. Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

9. Public Agency Activities Program

a. Each Permittee shall implement a Public Agency Activities Program to minimize storm water pollution impacts from Permittee-owned or operated facilities and activities and to identify opportunities to reduce storm water pollution impacts

from areas of existing development. Requirements for Public Agency Facilities and Activities consist of the following components:

i. Public Construction Activities Management

ii. Public Facility Inventory

iii. Inventory of Existing Development for Retrofitting Opportunities

iv. Public Facility and Activity Management

v. Vehicle and Equipment Wash Areas

vi. Landscape, Park, and Recreational Facilities Management

vii. Storm Drain Operation and Maintenance

viii. Streets, Roads, and Parking Facilities Maintenance

ix. Emergency Procedures

x. Municipal Employee and Contractor Training

b. Public Construction Activities Management

i. Each Permittee shall implement and comply with the Planning and Land Development Program requirements in Part VI.D.7 of this Order at Permittee-owned or operated (i.e., public or Permittee sponsored) construction projects that are categorized under the project types identified in Part VI.D.7.b of this Order.

ii. Each Permittee shall implement and comply with the appropriate Development Construction Program requirements in Part VI.D.8 of this Order at Permittee-owned or operated construction projects as applicable.

iii. For Permittee-owned or operated projects (including those under a capital improvement project plan) that disturb less than one acre of soil, each Permittee shall require an effective combination of erosion and sediment control BMPs from Table 13 (see Construction Development Program, minimum BMPs).

iv. Each Permittee shall obtain separate coverage under the Construction General Permit for all Permittee-owned or operated construction sites that require coverage.

c. Public Facility Inventory

i. Each Permittee shall maintain an updated inventory of all Permittee-owned or operated (i.e., public) facilities within its jurisdiction that are potential sources of storm water pollution. The incorporation of facility information into a GIS is recommended. Sources to be tracked include but are not limited to the following:

(1) Animal control facilities

(2) Chemical storage facilities

(3) Composting facilities

(4) Equipment storage and maintenance facilities (including landscape maintenance-related operations)

(5) Fueling or fuel storage facilities (including municipal airports)

(6) Hazardous waste disposal facilities

(7) Hazardous waste handling and transfer facilities

(8) Incinerators

(9) Landfills

(10) Materials storage yards

(11) Pesticide storage facilities

(12) Fire stations

(13) Public restrooms

(14) Public parking lots

(15) Public golf courses

(16) Public swimming pools

(17) Public parks

(18) Public works yards

(19) Public marinas

(20) Recycling facilities

(21) Solid waste handling and transfer facilities

(22) Vehicle storage and maintenance yards

(23) Storm water management facilities (e.g., detention basins)

(24) All other Permittee-owned or operated facilities or activities that each Permittee determines may contribute a substantial pollutant load to the MS4.

ii. Each Permittee shall include the following minimum fields of information for each Permittee-owned or operated facility in its inventory.

(1) Name of facility

(2) Name of facility manager and contact information

(3) Address of facility (physical and mailing)

(4) A narrative description of activities performed and potential pollution sources.

(5) Coverage under the Industrial General Permit or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.

iii. Each Permittee shall update its inventory at least once during the 5-year term of the Order. The update shall be accomplished through collection of new information obtained through field activities or through other readily available inter and intra-agency informational databases (e.g., property management, land-use approvals, accounting and depreciation ledger account, and similar information).

d. Inventory of Existing Development for Retrofitting Opportunities

i. Each Permittee shall develop an inventory of retrofitting opportunities that meets the requirements of this Part VI.9.d. Retrofit opportunities shall be identified within the public right-of-way or in coordination with a TMDL implementation plan(s). The goals of the existing development retrofitting inventory are to address the impacts of existing development through regional or sub-regional retrofit projects that reduce the discharges of storm water pollutants into the MS4 and prevent discharges from the MS4 from causing or contributing to a violation of water quality standards as defined in Part V.A, Receiving Water Limitations.

ii. Each Permittee shall screen existing areas of development to identify candidate areas for retrofitting using watershed models or other screening level tools.

iii. Each Permittee shall evaluate and rank the areas of existing development identified in the screening to prioritize retrofitting candidates. Criteria for evaluation may include but are not limited to:

(1) Feasibility, including general private and public land availability;

(2) Cost effectiveness;

(3) Pollutant removal effectiveness;

(4) Tributary area potentially treated;

(5) Maintenance requirements;

(6) Landowner cooperation;

(7) Neighborhood acceptance;

(8) Aesthetic qualities;

(9) Efficacy at addressing concern; and

(10) Potential improvements to public health and safety.

iv. Each Permittee shall consider the results of the evaluation in the following programs:

(1) The Permittee's storm water management program: Highly feasible projects expected to benefit water quality should be given a high priority to implement source control and treatment control BMPs in a Permittee's SWMP.

(2) Off-site mitigation for New Development and Redevelopment: Each Permittee shall consider high priority retrofit projects as candidates for off-site mitigation projects per Part VI.D.7.c.iii.(4).(d).

(3) Where feasible, at the discretion of the Permittee, the existing development retrofitting program may be coordinated with flood control projects and other infrastructure improvement programs per Part VI.D.9.e.ii.(2) below.

v. Each Permittee shall cooperate with private landowners to encourage site specific retrofitting projects. Each Permittee shall consider the following practices in cooperating with private landowners to retrofit existing development:

(1) Demonstration retrofit projects;

(2) Retrofits on public land and easements that treat runoff from private developments;

(3) Education and outreach;

(4) Subsidies for retrofit projects;

(5) Requiring retrofit projects as enforcement, mitigation or ordinance compliance;

(6) Public and private partnerships;

(7) Fees for existing discharges to the MS4 and reduction of fees for retrofit implementation.

e. Public Agency Facility and Activity Management

i. Each Permittee shall obtain separate coverage under the Industrial General Permit for all Permittee-owned or operated facilities where industrial activities are conducted that require coverage under the Industrial General Permit.

ii. Each Permittee shall implement the following measures for Permittee- owned and operated flood management projects:

(1) Develop procedures to assess the impacts of flood management projects on the water quality of receiving water bodies; and

(2) Evaluate existing structural flood control facilities to determine if retrofitting the facility to provide additional pollutant removal from storm water is feasible.

iii. Each Permittee shall ensure the implementation and maintenance of activity specific BMPs listed in Table 18 (BMPs for Public Agency Facilities and Activities) or an equivalent set of BMPs when such activities occur at Permittee-owned or operated facilities and field activities (e.g., project sites) including but not limited to the facility types listed in Part VI.D.9.c above, and at any area that includes the activities described in Table 18, or that have the potential to discharge pollutants in storm water.

iv. Any contractors hired by the Permittee to conduct Public Agency Activities including, but not limited to, storm and/or sanitary sewer system inspection and repair, street sweeping, trash pick-up and disposal, and street and right-of-way construction and repair shall be contractually required to implement and maintain the activity specific BMPs listed in Table 18. Each Permittee shall conduct oversight of contractor activities to ensure these BMPs are implemented and maintained.

v. Permittee-owned or operated facilities that have obtained coverage under the Industrial General Permit shall implement and maintain BMPs consistent with the associated SWPPP and are therefore not required to implement and maintain the activity specific BMPs listed in Table 18.

vi. Effective source control BMPs for the activities listed in Table 18 shall be implemented at Permittee-owned or operated facilities, unless the pollutant generating activity does not occur. Each Permittee shall require implementation of additional BMPs where storm water from the MS4 discharges to a significant ecological area (SEA, see Attachment A for definition), a water body subject to TMDL provisions in Part VI.E., or a CWA § 303(d) listed water body (see Part VI.E below). Likewise, for those BMPs that are not adequately protective of water quality standards, a Permittee may require additional site-specific controls.

Table 18. BMPs for Public Agency Facilities and Activities

General and Activity Specific BMPs	
General BMPs	Scheduling and Planning
	Spill Prevention and Control
	Sanitary/Septic Waste Management
	Material Use
	Safer Alternative Products
	Vehicle/Equipment Cleaning, Fueling and Maintenance
	Illicit Connection Detection, Reporting and Removal
	Illegal Spill Discharge Control
	Maintenance Facility Housekeeping Practices
Flexible Pavement	Asphalt Cement Crack and Joint Grinding/ Sealing
	Asphalt Paving
	Structural Pavement Failure (Digouts) Pavement Grinding and Paving
	Emergency Pothole Repairs
	Sealing Operations
Rigid Pavement	Portland Cement Crack and Joint Sealing
	Mudjacking and Drilling
	Concrete Slab and Spall Repair
Slope/ Drains/ Vegetation	Shoulder Grading
	Nonlandscaped Chemical Vegetation Control
	Nonlandscaped Mechanical Vegetation Control/

General and Activity Specific BMPs	
	Mowing
	Nonlandscaped Tree and Shrub Pruning, Brush Chipping, Tree and Shrub Removal
	Fence Repair
	Drainage Ditch and Channel Maintenance
	Drain and Culvert Maintenance
	Curb and Sidewalk Repair
Litter/ Debris/ Graffiti	Sweeping Operations
	Litter and Debris Removal
	Emergency Response and Cleanup Practices
	Graffiti Removal
Landscaping	Chemical Vegetation Control
	Manual Vegetation Control
	Landscaped Mechanical Vegetation Control/ Mowing
	Landscaped Tree and Shrub Pruning, Brush Chipping, Tree and Shrub Removal
	Irrigation Line Repairs
	Irrigation (Watering), Potable and Nonpotable
Environmental	Storm Drain Stenciling
	Roadside Slope Inspection
	Roadside Stabilization
	Stormwater Treatment Devices
	Traction Sand Trap Devices
Bridges	Welding and Grinding
	Sandblasting, Wet Blast with Sand Injection and Hydroblasting
	Painting
	Bridge Repairs
Other Structures	Pump Station Cleaning
	Tube and Tunnel Maintenance and Repair
	Tow Truck Operations
	Toll Booth Lane Scrubbing Operations
Electrical	Sawcutting for Loop Installation
Traffic Guidance	Thermoplastic Striping and Marking
	Paint Striping and Marking
	Raised/ Recessed Pavement Marker Application and Removal
	Sign Repair and Maintenance
	Median Barrier and Guard Rail Repair
	Emergency Vehicle Energy Attenuation Repair
Storm Maintenance	Minor Slides and Slipouts Cleanup/ Repair
Management and Support	Building and Grounds Maintenance
	Storage of Hazardous Materials (Working Stock)
	Material Storage Control (Hazardous Waste)

General and Activity Specific BMPs	
	Outdoor Storage of Raw Materials
	Vehicle and Equipment Fueling
	Vehicle and Equipment Cleaning
	Vehicle and Equipment Maintenance and Repair
	Aboveground and Underground Tank Leak and Spill Control

f. Vehicle and Equipment Washing

i. Each Permittee shall implement and maintain the activity specific BMPs listed in Table 18 (BMPs for Public Agency Facilities and Activities) for all fixed vehicle and equipment washing; including fire fighting and emergency response vehicles.

ii. Each Permittee shall prevent discharges of wash waters from vehicle and equipment washing to the MS4 by implementing any of the following measures at existing facilities with vehicle or equipment wash areas:

(1) Self-contain, and haul off for disposal; or

(2) Equip with a clarifier or an alternative pre-treatment device and plumb to the sanitary sewer in accordance with applicable waste water provider regulations.

iii. Each Permittee shall ensure that any municipal facilities constructed, redeveloped, or replaced shall not discharge wastewater from vehicle and equipment wash areas to the MS4 by plumbing all areas to the sanitary sewer in accordance with applicable waste water provider regulations, or self-containing all waste water/ wash water and hauling to a point of legal disposal.

g. Landscape, Park, and Recreational Facilities Management

i. Each Permittee shall implement and maintain the activity specific BMPs listed in Table 18 for all public right-of-ways, flood control facilities and open channels, lakes and reservoirs, and landscape, park, and recreational facilities and activities.

ii. Each Permittee shall implement an IPM program that includes the following:

(1) Pesticides are used only if monitoring indicates they are needed, and pesticides are applied according to applicable permits and established guidelines.

(2) Treatments are made with the goal of removing only the target organism.

(3) Pest controls are selected and applied in a manner that minimizes risks to human health, beneficial non-target organisms, and the environment.

(4) The use of pesticides, including Organophosphates and Pyrethroids, does not threaten water quality.

(5) Partner with other agencies and organizations to encourage the use of IPM.

(6) Adopt and verifiably implement policies, procedures, and/ or ordinances requiring the minimization of pesticide use and encouraging the use of IPM techniques (including beneficial insects) for Public Agency Facilities and Activities.

(7) Policies, procedures, and ordinances shall include commitments and a schedule to reduce the use of pesticides that cause impairment of surface waters by implementing the following procedures:

(a) Prepare and annually update an inventory of pesticides used by all internal departments, divisions, and other operational units.

(b) Quantify pesticide use by staff and hired contractors.

(c) Demonstrate implementation of IPM alternatives where feasible to reduce pesticide use.

iii. Each Permittee shall implement the following requirements:

(1) Use a standardized protocol for the routine and non-routine application of pesticides (including pre-emergents), and fertilizers.

(2) Ensure there is no application of pesticides or fertilizers (1) when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA[34], (2) within 48 hours of a ½-inch rain event, or (3) when water is flowing off the area where the application is to occur. This requirement does not apply to the application of aquatic pesticides described in Part VI.D.9.g.iii.(1) above or pesticides which require water for activation.

(3) Ensure that no banned or unregistered pesticides are stored or applied.

(4) Ensure that all staff applying pesticides are certified in the appropriate category by the California Department of Pesticide Regulation, or are under the direct supervision of a pesticide applicator certified in the appropriate category.

(5) Implement procedures to encourage the retention and planting of native vegetation to reduce water, pesticide and fertilizer needs; and

(6) Store pesticides and fertilizers indoors or under cover on paved surfaces, or use secondary containment.

(a) Reduce the use, storage, and handling of hazardous materials to reduce the potential for spills.

(b) Regularly inspect storage areas.

h. Storm Drain Operation and Maintenance

[34] www.srh.noaa.gov/forecast

i. Each Permittee shall implement and maintain the activity specific BMPs listed in Table 18 for storm drain operation and maintenance.

ii. Ensure that all material removed from the MS4 does not reenter the system. Solid material shall be dewatered in a contained area and liquid material shall be disposed in accordance with any of the following measures:

(1) Self-contain, and haul off for legal disposal; or

(2) Applied to the land without runoff; or

(3) Equip with a clarifier or an alternative pre-treatment device; and plumb to the sanitary sewer in accordance with applicable waste water provider regulations.

iii. Catch Basin Cleaning

(1) In areas that are not subject to a trash TMDL, each Permittee shall determine priority areas and shall update its map or list of Catch Basins with their GPS coordinates and priority:

Priority A: Catch basins that are designated as consistently generating the highest volumes of trash and/or debris.

Priority B: Catch basins that are designated as consistently generating moderate volumes of trash and/or debris.

Priority C: Catch basins that are designated as generating low volumes of trash and/or debris.

The map or list shall contain the rationale or data to support priority designations.

(2) In areas that are not subject to a trash TMDL, each Permittee shall inspect catch basins according to the following schedule:

Priority A: A minimum of 3 times during the wet season (October 1 through April 15) and once during the dry season every year.

Priority B: A minimum of once during the wet season and once during the dry season every year.

Priority C: A minimum of once per year.

Catch basins shall be cleaned as necessary on the basis of inspections. At a minimum, Permittees shall ensure that any catch basin that is determined to be at least 25% full of trash shall be cleaned out. Permittees shall maintain inspection and cleaning records for Regional Water Board review.

(3) In areas that are subject to a trash TMDL, the subject Permittees shall implement the applicable provisions in Part VI.E.

iv. Trash Management at Public Events

(1) Each Permittee shall require the following measures for any event in the public right of way or wherever it is foreseeable that substantial quantities

of trash and litter may be generated, including events located in areas that are subject to a trash TMDL:

(a) Proper management of trash and litter generated; and

(b) Arrangement for temporary screens to be placed on catch basins; or

(c) Provide clean out of catch basins, trash receptacles, and grounds in the event area within one business day subsequent to the event.

v. Trash Receptacles

(1) Each Permittee shall ensure trash receptacles, or equivalent trash capturing devices, are covered in areas newly identified as high trash generation areas within its jurisdiction.

(2) Each Permittee shall ensure that all trash receptacles are cleaned out and maintained as necessary to prevent trash overflow.

vi. Catch Basin Labels and Open Channel Signage

(1) Each Permittee shall label all storm drain inlets that they own with a legible “no dumping” message.

(2) Each Permittee shall inspect the legibility of the stencil or label nearest each inlet prior to the wet season every year.

(3) Each Permittee shall record all catch basins with illegible stencils and re-stencil or re-label within 180 days of inspection.

(4) Each Permittee shall post signs, referencing local code(s) that prohibit littering and illegal dumping, at designated public access points to open channels, creeks, urban lakes, and other relevant water bodies.

vii. Additional Trash Management Practices

(1) In areas that are not subject to a trash TMDL, each Permittee shall install trash excluders, or equivalent devices, on or in catch basins or outfalls to prevent the discharge of trash to the MS4 or receiving water no later than four years after the effective date of this Order in areas defined as Priority A (Part VI.D.9.h.iii.(1)) except at sites where the application of such BMP(s) alone will cause flooding. Lack of maintenance that causes flooding is not an acceptable exception to the requirement to install BMPs. Alternatively, each Permittee may implement alternative or enhanced BMPs beyond the provisions of this Order (such as but not limited to increased street sweeping, adding trash cans near trash generation sites, prompt enforcement of trash accumulation, increased trash collection on public property, increased litter prevention messages or trash nets within the MS4) that provide substantially equivalent removal of trash. Each Permittee shall demonstrate that BMPs, which substituted for trash excluders, provide equivalent trash removal performance as excluders. When outfall trash capture is provided, revision of the schedule for inspection and cleanout of catch basins in Part VI.D.9.h.iii.(2) shall be reported in the next year’s annual report.

viii. Storm Drain Maintenance

Each Permittee shall implement a program for Storm Drain Maintenance that includes the following:

(1) Visual monitoring of Permittee-owned open channels and other drainage structures for trash and debris at least annually.

(2) Removal of trash and debris from open channels a minimum of once per year before the wet season.

(3) Elimination of the discharge of contaminants during MS4 maintenance and clean outs.

(4) Proper disposal of debris and trash removed during storm drain maintenance.

ix. Infiltration from Sanitary Sewer to MS4/Preventive Maintenance

(1) Each Permittee shall implement controls and measures to prevent and eliminate infiltration of seepage from sanitary sewers to MS4s through thorough, routine preventive maintenance of the MS4.

(2) Each Permittee that operates both a municipal sanitary sewer system and a MS4 must implement controls and measures to prevent and eliminate infiltration of seepage from the sanitary sewers to the MS4s that must include overall sanitary sewer and MS4 surveys and thorough, routine preventive maintenance of both. Implementation of a Sewer System Management Plan in accordance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, may be used to fulfill this requirement.

(3) Each Permittee shall implement controls to limit infiltration of seepage from sanitary sewers to the MS4 where necessary. Such controls must include:

(a) Adequate plan checking for construction and new development;

(b) Incident response training for its municipal employees that identify sanitary sewer spills;

(c) Code enforcement inspections;

(d) MS4 maintenance and inspections;

(e) Interagency coordination with sewer agencies; and

(f) Proper education of its municipal staff and contractors conducting field operations on the MS4 or its municipal sanitary sewer (if applicable).

x. Permittee Owned Treatment Control BMPs

(1) Each Permittee shall implement an inspection and maintenance program for all Permittee owned treatment control BMPs, including post-construction treatment control BMPs.

(2) Each Permittee shall ensure proper operation of all treatment control BMPs and maintain them as necessary for proper operation, including all post-construction treatment control BMPs.

(3) Any residual water[35] produced by a treatment control BMP and not being internal to the BMP performance when being maintained shall be:

(a) Hauled away and legally disposed of; or

(b) Applied to the land without runoff; or

(c) Discharged to the sanitary sewer system (with permits or authorization); or

(d) Treated or filtered to remove bacteria, sediments, nutrients, and meet the limitations set in Table 19 (Discharge Limitations for Dewatering Treatment BMPs), prior to discharge to the MS4.

Table 19. Discharge Limitations for Dewatering Treatment BMPs[36]

Parameter	Units	Limitation
Total Suspended Solids	mg/L	100
Turbidity	NTU	50
Oil and Grease	mg/L	10

i. Streets, Roads, and Parking Facilities Maintenance

i. Each Permittee shall designate streets and/or street segments within its jurisdiction as one of the following:

Priority A: Streets and/or street segments that are designated as consistently generating the highest volumes of trash and/or debris.

Priority B: Streets and/or street segments that are designated as consistently generating moderate volumes of trash and/or debris.

Priority C: Streets and/or street segments that are designated as generating low volumes of trash and/or debris.

ii. Each Permittee shall perform street sweeping of curbed streets according to the following schedule:

Priority A: Streets and/or street segments that are designated as Priority A shall be swept at least two times per month.

Priority B: Streets and/or street segments that are designated as Priority B shall be swept at least once per month.

Priority C: Streets and/or street segments that are designated as Priority C shall be swept as necessary but in no case less than once per year.

[35] See Attachment A.
[36] Technology based effluent limitations.

iii. Road Reconstruction

Each Permittee shall require that for any project that includes roadbed or street paving, repaving, patching, digouts, or resurfacing roadbed surfaces, that the following BMPs be implemented for each project.

(1) Restrict paving and repaving activity to exclude periods of rainfall or predicted rainfall[37] unless required by emergency conditions.

(2) Install sand bags or gravel bags and filter fabric at all susceptible storm drain inlets and at manholes to prevent spills of paving products and tack coat;

(3) Prevent the discharge of release agents including soybean oil, other oils, or diesel into the MS4 or receiving waters.

(4) Prevent non-storm water runoff from water use for the roller and for evaporative cooling of the asphalt.

(5) Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly.

(6) Collect liquid waste in a container, with a secure lid, for transport to a maintenance facility to be reused, recycled or disposed of properly.

(7) Collect solid waste by vacuuming or sweeping and securing in an appropriate container for transport to a maintenance facility to be reused, recycled or disposed of properly.

(8) Cover the “cold-mix” asphalt (i.e., pre-mixed aggregate and asphalt binder) with protective sheeting during a rainstorm.

(9) Cover loads with tarp before haul-off to a storage site, and do not overload trucks.

(10) Minimize airborne dust by using water spray during grinding.

(11) Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near MS4 or receiving waters.

(12) Protect stockpiles with a cover or sediment barriers during a rain.

iv. Parking Facilities Maintenance

(1) Permittee-owned parking lots exposed to storm water shall be kept clear of debris and excessive oil buildup and cleaned no less than 2 times per month and/or inspected no less than 2 times per month to determine if cleaning is necessary. In no case shall a Permittee-owned parking lot be cleaned less than once a month.

j. Emergency Procedures

i. Each Permittee may conduct repairs of essential public service systems and infrastructure in emergency situations with a self-waiver of the provisions of this Order as follows:

[37] A probability of precipitation (POP) of 50% is required.

(1) The Permittee shall abide by all other regulatory requirements, including notification to other agencies as appropriate.

(2) Where the self-waiver has been invoked, the Permittee shall submit to the Regional Water Board Executive Officer a statement of the occurrence of the emergency, an explanation of the circumstances, and the measures that were implemented to reduce the threat to water quality, no later than 30 business days after the situation of emergency has passed.

(3) Minor repairs of essential public service systems and infrastructure in emergency situations (that can be completed in less than one week) are not subject to the notification provisions. Appropriate BMPs to reduce the threat to water quality shall be implemented.

k. Municipal Employee and Contractor Training

i. Each Permittee shall, no later than 1 year after Order adoption and annually thereafter before June 30, train all of their employees in targeted positions (whose interactions, jobs, and activities affect storm water quality) on the requirements of the overall storm water management program, or shall ensure contractors performing privatized/contracted municipal services are appropriately trained to:

(1) Promote a clear understanding of the potential for activities to pollute storm water.

(2) Identify opportunities to require, implement, and maintain appropriate BMPs in their line of work.

Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

ii. Each Permittee shall, no later than 1 year after Order adoption and annually thereafter before June 30, train all of their employees and contractors who use or have the potential to use pesticides or fertilizers (whether or not they normally apply these as part of their work). Training programs shall address:

(1) The potential for pesticide-related surface water toxicity.

(2) Proper use, handling, and disposal of pesticides.

(3) Least toxic methods of pest prevention and control, including IPM.

(4) Reduction of pesticide use.

iii. Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

10. Illicit Connections and Illicit Discharges Elimination Program

a. General

i. Each Permittee shall continue to implement an Illicit Connection and Illicit Discharge Elimination (IC/ID) Program to detect, investigate, and eliminate IC/IDs to the MS4. The IC/ID Program must be implemented in accordance with the requirements and performance measures specified in this Order.

ii. As stated in Part VI.A.2 of this Order, each Permittee must have adequate legal authority to prohibit IC/IDs to the MS4 and enable enforcement capabilities to eliminate the source of IC/IDs.

iii. Each Permittee's IC/ID Program shall consist of at least the following major program components:

(1) Procedures for conducting source investigations for IC/IDs

(2) Procedures for eliminating the source of IC/IDs

(3) Procedures for public reporting of illicit discharges

(4) Spill response plan

(5) IC/IDs education and training for Permittee staff

b. Illicit Discharge Source Investigation and Elimination

i. Each Permittee shall develop written procedures for conducting investigations to identify the source of all suspected illicit discharges, including procedures to eliminate the discharge once the source is located.

ii. At a minimum, each Permittee shall initiate an investigation(s) to identify and locate the source within 72 hours of becoming aware of the illicit discharge.

iii. When conducting investigations, each Permittee shall comply with the following:

(1) Illicit discharges suspected of being sanitary sewage and/or significantly contaminated shall be investigated first.

(2) Each Permittee shall track all investigations to document at a minimum the date(s) the illicit discharge was observed; the results of the investigation; any follow-up of the investigation; and the date the investigation was closed.

(3) Each Permittee shall investigate the source of all observed illicit discharges.

iv. When taking corrective action to eliminate illicit discharges, each Permittee shall comply with the following:

(1) If the source of the illicit discharge has been determined to originate within the Permittee's jurisdiction, the Permittee shall immediately notify the responsible party/parties of the problem, and require the responsible party to initiate all necessary corrective actions to eliminate the illicit discharge.

Upon being notified that the discharge has been eliminated, the Permittee shall conduct a follow-up investigation to verify that the discharge has been eliminated and cleaned-up to the satisfaction of the Permittee(s). Each Permittee shall document its follow-up investigation. Each Permittee may seek recovery and remediation costs from responsible parties or require compensation for the cost of all inspection, investigation, cleanup and oversight activities. Resulting enforcement actions shall follow the program's Progressive Enforcement Policy, per Part VI.D.2.

(2) If the source of the illicit discharge has been determined to originate within an upstream jurisdiction, the Permittee shall notify the upstream jurisdiction and the Regional Water Board within 30 days of such determination and provide all of the information collected regarding efforts to identify its source. Each Permittee may seek recovery and remediation costs from responsible parties or require compensation for the cost of all inspection, investigation, cleanup and oversight activities. Resulting enforcement actions shall follow the program's Progressive Enforcement Policy, per Part VI.D.2.

(3) If the source of the illicit discharge cannot be traced to a suspected responsible party, affected Permittees shall implement its spill response plan and then initiate a permanent solution as described in section 10.b.v below.

v. In the event the Permittee is unable to eliminate an ongoing illicit discharge following full execution of its legal authority and in accordance with its Progressive Enforcement Policy, or other circumstances prevent the full elimination of an ongoing illicit discharge, including the inability to find the responsible party/parties, the Permittee shall provide for diversion of the entire flow to the sanitary sewer or provide treatment. In either instance, the Permittee shall notify the Regional Water Board in writing within 30 days of such determination and shall provide a written plan for review and comment that describes the efforts that have been undertaken to eliminate the illicit discharge, a description of the actions to be undertaken, anticipated costs, and a schedule for completion.

c. Identification and Response to Illicit Connections

i. Investigation

Each Permittee, upon discovery or upon receiving a report of a suspected illicit connection, shall initiate an investigation within 21 days, to determine the following: (1) source of the connection, (2) nature and volume of discharge through the connection, and (3) responsible party for the connection.

ii. Elimination

Each Permittee, upon confirmation of an illicit MS4 connection, shall ensure that the connection is:

(1) Permitted or documented, provided the connection will only discharge storm water and non-storm water allowed under this Order or other individual or general NPDES Permits/WDRs, or
(2) Eliminated within 180 days of completion of the investigation, using its formal enforcement authority, if necessary, to eliminate the illicit connection.

iii. Documentation

Formal records must be maintained for all illicit connection investigations and the formal enforcement taken to eliminate illicit connections.

d. Public Reporting of Non-Storm Water Discharges and Spills

i. Each Permittee shall promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including phone numbers and an internet site for complaints and spill reporting. Each Permittee shall also provide the reporting hotline to Permittee staff to leverage the field staff that has direct contact with the MS4 in detecting and eliminating illicit discharges.

ii. Each Permittee shall implement the central point of contact and reporting hotline requirements listed in this part in one or more of the following methods:

(1) By participating in a County-wide sponsored hotline

(2) By participating in one or more Watershed Group sponsored hotlines

(3) Or individually within its own jurisdiction

(4) The LACFCD shall, in collaboration with the County, continue to maintain the 888-CLEAN-LA hotline and internet site to promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s.

iii. Each Permittee shall ensure that signage adjacent to open channels, as required in Part F.8.h.vi, include information regarding dumping prohibitions and public reporting of illicit discharges.

iv. Each Permittee shall develop and maintain written procedures that document how complaint calls are received, documented, and tracked to ensure that all complaints are adequately addressed. The procedures shall be evaluated to determine whether changes or updates are needed to ensure that the procedures accurately document the methods employed by the Permittee. Any identified changes shall be made to the procedures subsequent to the evaluation.

v. Each Permittee shall maintain documentation of the complaint calls and record the location of the reported spill or IC/ ID and the actions undertaken in response to all IC/ID complaints, including referrals to other agencies.

e. Spill Response Plan

i. Each Permittee shall implement a spill response plan for all sewage and other spills that may discharge into its MS4. The spill response plan shall clearly identify agencies responsible for spill response and cleanup, telephone numbers and e-mail address for contacts, and shall contain at a minimum the following requirements:

(1) Coordination with spill response teams throughout all appropriate departments, programs and agencies so that maximum water quality protection is provided.

(2) Initiate investigation of all public and employee spill complaints within one business day of receiving the complaint to assess validity.

(3) Response to spills for containment within 4 hours of becoming aware of the spill, except where such spills occur on private property, in which case the response should be within 2 hours of gaining legal access to the property.

(4) Spills that may endanger health or the environment shall be reported to appropriate public health agencies and the Office of Emergency Services (OES).

f. Illicit Connection and Illicit Discharge Education and Training

i. Each Permittee must continue to implement a training program regarding the identification of IC/IDs for all municipal field staff, who, as part of their normal job responsibilities (e.g., street sweeping, storm drain maintenance, collection system maintenance, road maintenance), may come into contact with or otherwise observe an illicit discharge or illicit connection to the MS4. Contact information, including the procedure for reporting an illicit discharge, must be readily available to field staff. Training program documents must be available for review by the permitting authority.

ii. Each Permittee shall ensure contractors performing privatized/contracted municipal services such as, but not limited to, storm and/or sanitary sewer system inspection and repair, street sweeping, trash pick-up and disposal, and street and right-of-way construction and repair are trained regarding IC/ID identification and reporting. Permittees may provide training or include contractual requirements for IC/ID identification and reporting training. Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

iii. Each Permittee's training program should address, at a minimum, the following:

(1) IC/ID identification, including definitions and examples,

(2) investigation,

(3) elimination,

(4) cleanup,

(5) reporting, and

(6) documentation.

iv. Each Permittee must create a list of applicable positions and contractors which require IC/ID training and ensure that training is provided at least twice during the term of the Order. Each Permittee must maintain documentation of the training activities.

v. New Permittee staff members must be provided with IC/ID training within 180 days of starting employment.

E. Total Maximum Daily Load Provisions

1. The provisions of this Part VI.E. implement and are consistent with the assumptions and requirements of all waste load allocations (WLAs) established in TMDLs for which some or all of the Permittees in this Order are responsible.

a. Part VI.E of this Order includes provisions that are designed to assure that Permittees achieve WLAs and meet other requirements of TMDLs covering receiving waters impacted by the Permittees' MS4 discharges. TMDL provisions are grouped by WMA (WMA) in Attachments L through R.

b. The Permittees subject to each TMDL are identified in Attachment K.

c. The Permittees shall comply with the applicable water quality-based effluent limitations and/or receiving water limitations contained in Attachments L through R, consistent with the assumptions and requirements of the WLAs established in the TMDLs, including implementation plans and schedules, where provided for in the State adoption and approval of the TMDL (40 CFR §122.44(d)(1)(vii)(B); Cal. Wat. Code §13263(a)).

d. A Permittee may comply with water quality-based effluent limitations and receiving water limitations in Attachments L through R using any lawful means.

2. Compliance Determination

a. General

i. A Permittee shall demonstrate compliance at compliance monitoring points established in each TMDL or, if not specified in the TMDL, at locations identified in an approved TMDL monitoring plan or in accordance with an approved integrated monitoring program per Attachment E, Part VI.C.5 (Integrated Watershed Monitoring and Assessment).

ii. Compliance with water quality-based effluent limitations shall be determined as described in Parts VI.E.2.d and VI.E.2.e, or for trash water quality-based effluent limitations as described in Part VI.E.5.b, or as otherwise set forth in TMDL specific provisions in Attachments L through R.

iii. Pursuant to Part VI.C, a Permittee may, individually or as part of a watershed-based group, develop and submit for approval by the Regional Water Board Executive Officer a Watershed Management Program that addresses all water quality-based effluent limitations and receiving water limitations to which the Permittee is subject pursuant to established TMDLs.

b. Commingled Discharges

i. A number of the TMDLs establish WLAs that are assigned jointly to a group of Permittees whose storm water and/or non-storm water discharges are or may be commingled in the MS4 prior to discharge to the receiving water subject to the TMDL.

ii. In these cases, pursuant to 40 CFR section 122.26(a)(3)(vi), each Permittee is only responsible for discharges from the MS4 for which they are owners and/or operators.

iii. Where Permittees have commingled discharges to the receiving water, compliance at the outfall to the receiving water or in the receiving water shall be determined for the group of Permittees as a whole unless an individual Permittee demonstrates that its discharge did not cause or contribute to the exceedance, pursuant to subpart v. below.

iv. For purposes of compliance determination, each Permittee is responsible for demonstrating that its discharge did not cause or contribute to an exceedance of an applicable water quality-based effluent limitation(s) at the outfall or receiving water limitation(s) in the target receiving water.

v. A Permittee may demonstrate that its discharge did not cause or contribute to an exceedance of an applicable water quality-based effluent limitation or receiving water limitation in any of the following ways:

(1) Demonstrate that there is no discharge from the Permittee's MS4 into the applicable receiving water during the time period subject to the water quality-based effluent limitation and/or receiving water limitation; or

(2) Demonstrate that the discharge from the Permittee's MS4 is controlled to a level that does not exceed the applicable water quality-based effluent limitation; or

(3) For exceedances of bacteria receiving water limitations or water quality-based effluent limitations, demonstrate through a source investigation pursuant to protocols established under California Water Code section 13178 or for exceedances of other receiving water limitations or water quality-based effluent limitations, demonstrate using other accepted source identification protocols, that pollutant sources within the jurisdiction of the Permittee or the Permittee's MS4 have not caused or contributed to the exceedance of the Receiving Water Limitation(s).

c. Receiving Water Limitations Addressed by a TMDL

i. For receiving water limitations in Part V.A. associated with water body-pollutant combinations addressed in a TMDL, Permittees shall achieve compliance with the receiving water limitations in Part V.A. as outlined in this Part VI.E. and Attachments L through R of this Order.

ii. A Permittee's full compliance with the applicable TMDL requirement(s), including compliance schedules, of this Part VI.E. and Attachments L through R constitutes compliance with Part V.A. of this Order for the specific pollutant addressed in the TMDL.

iii. As long as a Permittee is in compliance with the applicable TMDL requirements in a time schedule order (TSO) issued by the Regional Water Board pursuant to California Water Code sections 13300 and 13385(j)(3), it is not the Regional Water Board's intention to take an enforcement action for violations of Part V.A. of this Order for the specific pollutant(s) addressed in the TSO.

d. Interim Water Quality-Based Effluent Limitations and Receiving Water Limitations

i. A Permittee shall be considered in compliance with an applicable interim water quality-based effluent limitation and interim receiving water limitation for a pollutant associated with a specific TMDL if any of the following is demonstrated:

(1) There are no violations of the interim water quality-based effluent limitation for the pollutant associated with a specific TMDL at the Permittee's applicable MS4 outfall(s),[38] including an outfall to the receiving water that collects discharges from multiple Permittees' jurisdictions;

(2) There are no exceedances of the applicable receiving water limitation for the pollutant associated with a specific TMDL in the receiving water(s) at, or downstream of, the Permittee's outfall(s);

(3) There is no direct or indirect discharge from the Permittee's MS4 to the receiving water during the time period subject to the water quality-based effluent limitation and/or receiving water limitation for the pollutant associated with a specific TMDL; or

(4) The Permittee has submitted and is fully implementing an approved Watershed Management Program or EWMP pursuant to Part VI.C.

(a) To be considered fully implementing an approved Watershed Management Program or EWMP, a Permittee must be implementing

[38] An outfall may include a manhole or other point of access to the MS4 at the Permittee's jurisdictional boundary.

all actions consistent with the approved program and applicable compliance schedules, including structural BMPs.

(b) Structural storm water BMPs or systems of BMPs should be designed and maintained to treat storm water runoff from the 85th percentile, 24-hour storm, where feasible and necessary to achieve applicable WQBELs and receiving water limitations, and maintenance records must be up-to-date and available for inspection by the Regional Water Board.

(c) A Permittee that does not implement the Watershed Management Program in accordance with the milestones and compliance schedules shall demonstrate compliance with its interim water quality-based effluent limitations and/or receiving water limitations pursuant to Part VI.E.2.d.i.(1)-(3), above.

(d) Upon notification of a Permittee's intent to develop a WMP or EWMP and prior to approval of its WMP or EWMP, a Permittee's full compliance with all of the following requirements shall constitute a Permittee's compliance with provisions pertaining to interim WQBELs with compliance deadlines occurring prior to approval of a WMP or EWMP. This subdivision (d) shall not apply to interim trash WQBELs.

(1) Provides timely notice of its intent to develop a WMP or EWMP,

(2) Meets all interim and final deadlines for development of a WMP or EWMP,

(3) For the area to be covered by the WMP or EWMP, targets implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges of pollutants through the MS4 to receiving waters, to address known contributions of pollutants from MS4 discharges that cause or contribute to the impairment(s) addressed by the TMDL(s), and

(4) Receives final approval of its WMP or EWMP within 28 or 40 months, respectively.

e. Final Water Quality-based Effluent Limitations and/or Receiving Water Limitations

i. A Permittee shall be deemed in compliance with an applicable final water quality-based effluent limitation and final receiving water limitation for the pollutant(s) associated with a specific TMDL if any of the following is demonstrated:

(1) There are no violations of the final water quality-based effluent limitation for the specific pollutant at the Permittee's applicable MS4 outfall(s)[39];

(2) There are no exceedances of applicable receiving water limitation for the specific pollutant in the receiving water(s) at, or downstream of, the Permittee's outfall(s);

(3) There is no direct or indirect discharge from the Permittee's MS4 to the receiving water during the time period subject to the water quality-based effluent limitation and/or receiving water limitation for the pollutant(s) associated with a specific TMDL; or

(4) In drainage areas where Permittees are implementing an EWMP, (i) all non-storm water and (ii) all storm water runoff up to and including the volume equivalent to the 85th percentile, 24-hour event is retained for the drainage area tributary to the applicable receiving water. This provision (4) shall not apply to final trash WQBELs.

3. USEPA Established TMDLs

TMDLs established by the USEPA, to which Permittees are subject, do not contain an implementation plan adopted pursuant to California Water Code section 13242. However, USEPA has included implementation recommendations as part of these TMDLs. In lieu of inclusion of numeric water quality based effluent limitations at this time, this Order requires Permittees subject to WLAs in USEPA established TMDLs to propose and implement best management practices (BMPs) that will be effective in achieving compliance with USEPA established numeric WLAs. The Regional Water Board may, at its discretion, revisit this decision within the term of this Order or in a future permit, as more information is developed to support the inclusion of numeric water quality based effluent limitations.

a. Each Permittee shall propose BMPs to achieve the WLAs contained in the applicable USEPA established TMDL(s), and a schedule for implementing the BMPs that is as short as possible, in a Watershed Management Program or EWMP.

b. Each Permittee may either individually submit a Watershed Management Program, or may jointly submit a WMP or EWMP with other Permittees subject to the WLAs contained in the USEPA established TMDL.

c. At a minimum, each Permittee shall include the following information in its Watershed Management Program or EWMP, relevant to each applicable USEPA established TMDL:

i. Available data demonstrating the current quality of the Permittee's MS4 discharge(s) in terms of concentration and/or load of the target pollutant(s) to the receiving waters subject to the TMDL;

[39] Ibid.

ii. A detailed description of BMPs that have been implemented, and/or are currently being implemented by the Permittee to achieve the WLA(s), if any;

iii. A detailed time schedule of specific actions the Permittee will take in order to achieve compliance with the applicable WLA(s);

iv. A demonstration that the time schedule requested is as short as possible, taking into account the time since USEPA establishment of the TMDL, and technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the WLA(s);

(1) For the Malibu Creek Nutrient TMDL established by USEPA in 2003, in no case shall the time schedule to achieve the final numeric WLAs exceed five years from the effective date of this Order; and

v. If the requested time schedule exceeds one year, the proposed schedule shall include interim requirements and numeric milestones and the date(s) for their achievement.

d. Each Permittee subject to a WLA in a TMDL established by USEPA shall submit a draft of a Watershed Management Program or EWMP to the Regional Water Board Executive Officer for approval per the schedule Part VI.C.4.

e. If a Permittee does not submit a Watershed Management Program, or the plan is determined to be inadequate by the Regional Water Board Executive Officer and the Permittee does not make the necessary revisions within 90 days of written notification that plan is inadequate, the Permittee shall be required to demonstrate compliance with the numeric WLAs immediately based on monitoring data collected under the MRP (Attachment E) for this Order.

4. State Adopted TMDLs where Final Compliance Deadlines have Passed

a. Permittees shall comply immediately with water quality-based effluent limitations and/or receiving water limitations to implement WLAs in state-adopted TMDLs for which final compliance deadlines have passed pursuant to the TMDL implementation schedule.

b. Where a Permittee believes that additional time to comply with the final water quality-based effluent limitations and/or receiving water limitations is necessary, a Permittee may within 45 days of Order adoption request a time schedule order pursuant to California Water Code section 13300 for the Regional Water Board's consideration.

c. Permittees may either individually request a TSO, or may jointly request a TSO with all Permittees subject to the water quality-based effluent limitations and/or receiving water limitations, to implement the WLAs in the state-adopted TMDL.

d. At a minimum, a request for a time schedule order shall include the following:

i. Data demonstrating the current quality of the MS4 discharge(s) in terms of concentration and/or load of the target pollutant(s) to the receiving waters subject to the TMDL;

ii. A detailed description and chronology of structural controls and source control efforts, since the effective date of the TMDL, to reduce the pollutant load in the MS4 discharges to the receiving waters subject to the TMDL;

iii. Justification of the need for additional time to achieve the water quality-based effluent limitations and/or receiving water limitations;

iv. A detailed time schedule of specific actions the Permittee will take in order to achieve the water quality-based effluent limitations and/or receiving water limitations;

v. A demonstration that the time schedule requested is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the effluent limitation(s); and

vi. If the requested time schedule exceeds one year, the proposed schedule shall include interim requirements and the date(s) for their achievement. The interim requirements shall include both of the following:

(1) Effluent limitation(s) for the pollutant(s) of concern; and

(2) Actions and milestones leading to compliance with the effluent limitation(s).

5. Water Quality-Based Effluent Limitations for Trash

Permittees assigned a Waste Load Allocation in a trash TMDL shall comply as set forth below.

a. Effluent Limitations: Permittees shall comply with the interim and final water quality-based effluent limitations for trash set forth in Attachments L through R for the following Trash TMDLs:

i. Lake Elizabeth Trash TMDL (Attachment L)

ii. Santa Monica Bay Nearshore and Offshore Debris TMDL (Attachment M)

iii. Malibu Creek Watershed Trash TMDL (Attachment M)

iv. Ballona Creek Trash TMDL (Attachment M)

v. Machado Lake Trash TMDL (Attachment N)

vi. Los Angeles River Trash TMDL (Attachment O)

vii. Peck Road Park Lake Trash TMDL (Attachment O)

viii. Echo Park Lake Trash TMDL (Attachment O)

ix. Legg Lake Trash TMDL (Attachment O)

b. Compliance

i. Pursuant to California Water Code section 13360(a), Permittees may comply with the trash effluent limitations using any lawful means. Such compliance options are broadly classified as ***full capture***, ***partial capture, institutional controls,*** or ***minimum frequency of assessment and collection,*** as described below, and any combination of these may be employed to achieve compliance:

(1) Full Capture Systems:

(a) The Basin Plan authorizes the Regional Water Board Executive Officer to certify ***full capture systems***, which are systems that meet the operating and performance requirements as described in this Order, and the procedures identified in "Procedures and Requirements for Certification of a Best Management Practice for Trash Control as a Full Capture System."[40]

(b) Permittees are authorized to comply with their effluent limitations through certified ***full capture systems*** provided the requirements of paragraph (c), immediately below, and any conditions in the certification, continue to be met.

(c) Permittees may comply with their effluent limitations through progressive installation of ***full capture systems*** throughout their jurisdictional areas until all areas draining to Lake Elizabeth, Santa Monica Bay, Malibu Creek, Ballona Creek, Machado Lake, the Los Angeles River system, Legg Lake, Peck Road Park Lake, and/or Echo Park Lake are addressed. For purposes of this Order, attainment of the effluent limitations shall be conclusively presumed for any drainage area to Lake Elizabeth, Santa Monica Bay, Malibu Creek (and its tributaries), Ballona Creek (and its tributaries), Machado Lake, the Los Angeles River (and its tributaries), Legg Lake, Peck Road Park Lake, and/or Echo Park Lake where certified ***full capture systems*** treat all drainage from the area, provided that the ***full capture systems*** are adequately sized and maintained, and that maintenance records are up-to-date and available for inspection by the Regional Water Board.

[40] The Regional Water Board currently recognizes eight ***full capture systems***. These are: Vortex Separation Systems (VSS) and seven other Executive Officer certified ***full capture systems***, including specific types or designs of trash nets; two gross solids removal devices (GSRDs); catch basin brush inserts and mesh screens; vertical and horizontal trash capture screen inserts; and a connector pipe screen device. See August 3, 2004 Los Angeles Regional Water Quality Control Board Memorandum titled "Procedures and Requirements for Certification of a Best Management Practice for Trash Control as a Full Capture System.

(i) A Permittee shall be deemed in compliance with its final effluent limitation if it demonstrates that all drainage areas under its jurisdiction and/or authority are serviced by appropriate certified ***full capture systems*** as described in paragraph (1)(c).

(ii) A Permittee shall be deemed in compliance with its interim effluent limitations, where applicable:

1. By demonstrating that ***full capture systems*** treat the percentage of drainage areas in the watershed that corresponds to the required trash abatement.

2. Alternatively, a Permittee may propose a schedule for installation of ***full capture systems*** in areas under its jurisdiction and/or authority within a given watershed, targeting first the areas of greatest trash generation, for the Executive Officer's approval. The Executive Officer shall not approve any such schedule that does not result in timely compliance with the final effluent limitations, consistent with the established TMDL implementation schedule and applicable State policies. A Permittee shall be deemed in compliance with its interim effluent limitations provided it is fully in compliance with any such approved schedule.

(2) Partial Capture Devices and Institutional Controls: Permittees may comply with their interim and final effluent limitations through the installation of ***partial capture devices*** and the application of ***institutional controls***.[41]

(a) Trash discharges from areas serviced solely by ***partial capture devices*** may be estimated based on demonstrated performance of the device(s) in the implementing area.[42] That is, trash reduction is equivalent to the ***partial capture devices'*** trash removal efficiency multiplied by the percentage of drainage area serviced by the devices.

(b) Except as provided in subdivision (c), immediately below, trash discharges from areas addressed by ***institutional controls*** and/or ***partial capture devices*** (where site-specific performance data is not available) shall be calculated using a mass balance approach, based on the daily generation rate (DGR) for a representative area.[43] The DGR shall be determined from direct measurement of trash deposited in the drainage area during any thirty-day period between June 22nd and September 22nd exclusive of rain events[44], and shall be re-calculated every year thereafter unless a less frequent period for recalculation is approved by the Regional Water Board Executive Officer. The DGR

[41] While interim effluent limitations may be complied with using ***partial capture devices***, compliance with final effluent limitations cannot be achieved with the exclusive use of ***partial capture devices***.
[42] Performance shall be demonstrated under different conditions (e.g. low to high trash loading).
[43] The area(s) should be representative of the land uses and activities within the Permittees' authority and shall be approved by the Executive Officer prior to the 30-day collection period.
[44] Provided no special events are scheduled that may affect the representative nature of that collection period.

shall be calculated as the total amount of trash collected during this period divided by the length of the collection period.

DGR = (Amount of trash collected during a 30-day collection period[45] / (30 days)

The DGR for the applicable area under the Permittees' jurisdiction and/or authority shall be extrapolated from that of the representative drainage area(s). A mass balance equation shall be used to estimate the amount of trash discharged during a storm event.[46] The ***Storm Event Trash Discharge*** for a given rain event in the Permittee's drainage area shall be calculated by multiplying the number of days since the last street sweeping by the DGR and subtracting the amount of any trash recovered in the catch basins.[47] For each day of a storm event that generates precipitation greater than 0.25 inch, the Permittee shall calculate a ***Storm Event Trash Discharge***.

Storm Event Trash Discharge = [(Days since last street sweeping*DGR)] – [Amount of trash recovered from catch basins][48]

The sum of the ***Storm Event Trash Discharges*** for the storm year shall be the Permittee's calculated annual trash discharge.

Total Storm Year Trash Discharge = ∑Storm Event Trash Discharges from Drainage Area

(c) The Executive Officer may approve alternative compliance monitoring approaches for calculating total storm year trash discharge, upon finding that the program will provide a scientifically-based estimate of the amount of trash discharged from the Permittee's MS4.

(3) Combined Compliance Approaches:

Permittees may comply with their interim and final effluent limitations through a combination of ***full capture systems***, ***partial capture devices***, and ***institutional controls***. Where a Permittee relies on a combination of approaches, it shall demonstrate compliance with the interim and final effluent limitations as specified in (1)(c) in areas where ***full capture systems*** are installed and as specified in (2)(a) or (2)(b), as appropriate, in areas where ***partial capture devices*** and ***institutional controls*** are applied.

(4) Minimum Frequency of Assessment and Collection Approach:

If allowed in a trash TMDL and approved by the Executive Officer, a Permittee may alternatively comply with its final effluent limitations by

[45] Between June 22nd and September 22nd
[46] Amount of trash shall refer to the uncompressed volume (in gallons) or drip-dry weight (in pounds) of trash collected.
[47] Any negative values shall be considered to represent a zero discharge.
[48] When more than one storm event occurs prior to the next street sweeping the discharge shall be calculated from the date of the last assessment.

implementing a program for ***minimum frequency of assessment and collection*** (MFAC) in conjunction with BMPs. To the satisfaction of the Executive Officer, the MFAC/BMP program must meet the following criteria:

(a) The MFAC/BMP Program includes an initial minimum frequency of trash assessment and collection and suite of structural and/or nonstructural BMPs. The MFAC/BMP program shall include collection and disposal of all trash found in the receiving water and shoreline. Permittees shall implement an initial suite of BMPs based on current trash management practices in land areas that are found to be sources of trash to the water body. The initial minimum frequency of trash assessment and collection shall be set as specified in the following TMDLs:

  (i) Malibu Creek Watershed Trash TMDL

  (ii) Machado Lake Trash TMDL

  (iii) Legg Lake Trash TMDL

(b) The MFAC/BMP Program includes reasonable assurances that it will be implemented by the responsible Permittees.

(c) MFAC protocols may be based on SWAMP protocols for rapid trash assessment, or alternative protocols proposed by Permittees and approved by the Regional Water Board Executive Officer.

(d) Implementation of the MFAC/BMP program should include a Health and Safety Program to protect personnel. The MFAC/BMP program shall not require Permittees to access and collect trash from areas where personnel are prohibited.

(e) The Regional Water Board Executive Officer may approve or require a revised assessment and collection frequency and definition of the critical conditions under the MFAC:

  (i) To prevent trash from accumulating in deleterious amounts that cause nuisance or adversely affect beneficial uses between collections;

  (ii) To reflect the results of trash assessment and collection;

  (iii) If the amount of trash collected does not show a decreasing trend, where necessary, such that a shorter interval between collections is warranted; or

  (iv) If the amount of trash collected is decreasing such that a longer interval between collections is warranted.

(f) At the end of the implementation period, a revised MFAC/BMP program may be required if the Regional Water Board Executive Officer determines that the amount of trash accumulating between

collections is causing nuisance or otherwise adversely affecting beneficial uses.

(g) With regard to (4)(e)(i), (4)(e)(ii), or (4)(e)(iii), above, the Regional Water Board Executive Officer is authorized to allow responsible Permittees to implement additional structural or non-structural BMPs in lieu of modifying the monitoring frequency.

ii. If a Permittee is not in compliance with its applicable interim and/or final effluent limitation as identified in Attachments L through R, then it shall be in violation of this Order.

(1) A Permittee relying on ***partial capture devices*** and/or ***institutional controls*** that has violated its interim and/or final effluent limitation(s) shall be presumed to have violated the applicable limitation for each day of each storm event that generated precipitation greater than 0.25 inch during the applicable storm year, except those storm days on which it establishes that its cumulative Storm Event Trash Discharges has not exceeded the applicable effluent limitation.

(2) If a Permittee relying on ***full capture systems*** has failed to demonstrate that the ***full capture systems*** for any drainage area are adequately sized and maintained, and that maintenance records are up-to-date and available for inspection by the Regional Water Board, and that it is in compliance with any conditions of its certification, shall be presumed to have discharged trash in an amount that corresponds to the percentage of the baseline waste load allocation represented by the drainage area in question.

(a) A Permittee may overcome this presumption by demonstrating (using any of the methods authorized in Part VI.E.5.b) that the actual or calculated discharge for that drainage area is in compliance with the applicable interim or final effluent limitation.

iii. Each Permittee shall be held liable for violations of the effluent limitations assigned to their area. If a Permittee's compliance strategy includes ***full*** or ***partial capture devices*** and it chooses to install a full or partial capture device in the MS4 physical infrastructure of another public entity, it is responsible for obtaining all necessary permits to do so. If a Permittee believes it is unable to obtain the permits needed to install a full capture or partial capture device within another Permittee's MS4 physical infrastructure, either Permittee may request the Executive Officer to hold a conference with the Permittees. Nothing in this Order shall affect the right of that public entity or a Permittee to seek indemnity or other recourse from the other as they deem appropriate. Nothing in this subsection shall be construed as relieving a Permittee of any liability that the Permittee would otherwise have under this Order.

c. Monitoring and Reporting Requirements (pursuant to California Water Code section 13383)

i. Each Permittee shall submit a TMDL Compliance Report as part of its Annual Report detailing compliance with the applicable interim and/or final effluent limitations. Reporting shall include the information specified below. The report shall be submitted on the reporting form specified by the Regional Water Board Executive Officer. The report shall be signed under penalty of perjury by the Permittee's principal executive officer or ranking elected official or duly authorized representative of the officer, consistent with Part V.B of Attachment D (Standard Provisions), who is responsible for ensuring compliance with this Order. Each Permittee shall be charged with and shall demonstrate compliance with its applicable effluent limitations beginning with its December 15, 2013, TMDL Compliance Report.

(1) Reporting Compliance based on Full Capture Systems: Permittees shall provide information on the number and location of full capture installations, the sizing of each full capture installation, the drainage areas addressed by these installations, and compliance with the applicable interim or final effluent limitation, in its TMDL Compliance Report. The Los Angeles Water Board will periodically audit sizing, performance, and other data to validate that a system satisfies the criteria established for a ***full capture system*** and any conditions established by the Regional Water Board Executive Officer in the certification.

(2) Reporting Compliance based on Partial Capture Systems and/or Institutional Controls:

(a) Using Performance Data Specific to the Permittee's Area: In its TMDL Compliance Report, a Permittee shall provide: (i) site-specific performance data for the applicable device(s); (ii) information on the number and location of such installations, and the drainage areas addressed by these installations; and (iii) calculated compliance with the applicable effluent limitations.

(b) Using Direct Measurement of Trash Discharge: Permittees shall provide an accounting of DGR and trash removal via street sweeping, catch basin clean outs, etc., in a database to facilitate the calculation of discharge for each rain event. The database shall be maintained and provided to the Regional Water Board for inspection upon request. In its TMDL Compliance Report, a Permittee shall provide information on its annual DGR, calculated storm year discharge, and compliance with the applicable effluent limitation.

(3) Reporting Compliance based on Combined Compliance Approaches:

Permittees shall provide the information specified in Part VI.E.5.c.i(1) for areas where ***full capture systems*** are installed and that are specified in Part VI.E.5.c.i(2)(a) or (b), as appropriate, for areas where ***partial capture devices*** and ***institutional controls*** are applied. In its TMDL Compliance Report, a Permittee shall also provide information on compliance with the applicable effluent limitation based on the combined compliance approaches.

(4) Reporting Compliance based on an MFAC/BMP Approach:

The MFAC/BMP Program includes a Trash Monitoring and Reporting Plan, and a requirement that the responsible Permittees will self-report any non-compliance with its provisions. The results and report of the Trash Monitoring and Reporting Plan must be submitted to Regional Water Board with the Permittee's Annual Report.

ii. Violation of the reporting requirements of this Part shall be punishable pursuant to, inter alia, California Water Code section 13385, subdivisions (a)(3) and (h)(1), and/or section 13385.1.