

FACT SHEET/STAFF REPORT
FOR THE
COUNTY OF LOS ANGELES MUNICIPAL STORM WATER
NPDES PERMIT (CAS004001)
ORDER No. 01-182
December 13, 2001

Los Angeles Regional Water Quality Control Board

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FACT SHEET/STAFF REPORT

State of California
California Regional Water Quality Control Board Los Angeles Region
National Pollutant Discharge Elimination System (NPDES)
Permit No. CAS004001, CI 6948
Regional Board Order No. 01-182

I. PURPOSE

The purpose of this Fact Sheet/Staff Report is to give the Permittees and interested parties an overview of the final NPDES storm water permit for the County of Los Angeles and the incorporated cities (except Long Beach), adopted on December 13, 2001, as well as to provide the technical basis for the permit requirements. Sections I through IV describe water quality problems from storm water and urban runoff, and permit conditions to address these problems. Sections V and VI discuss each major element of the Permittees' Storm Water Quality Management Plan (SQMP), and are meant to be used as a companion reference document to the permit. Section VII addresses changes that were made at the December 13, 2001 Regional Board Meeting.

II. INTRODUCTION - THE NEED TO REGULATE STORM WATER DISCHARGES

A. Impacts

The quality of storm water and urban runoff is fundamentally important to the health of the environment and the quality of life in Southern California. Polluted storm water runoff is a leading cause of water quality impairment in the Los Angeles Region. Storm water and urban runoff (during dry and wet weather) are often contaminated with pesticides, fertilizers, animal droppings, trash, food wastes, automotive byproducts, and many other toxic substances generated by our urban environment. Water that flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas carries these untreated pollutants through the storm drain networks directly into the receiving waters of the Region. The water quality impacts and increased public health risks from Municipal Separate Storm Sewer System (MS4) discharges that affect receiving waters nationwide and Los Angeles County and its coastline are well documented.

The **National Urban Runoff Program** (NURP) Study (USEPA 1983) showed that MS4 discharges draining from residential, commercial, and light industrial areas contain significant loadings of total suspended solids and other pollutants. Although the NURP Study did not cover industrial sites, the study suggested that runoff from industrial sites may have significantly higher contaminant levels than runoff from other urban land use sites. Several studies tend to support this observation, for e.g., the City of Fresno, California, a NURP project site, industrial areas there had the poorest storm water quality of the four land-uses evaluated. The study found that pollutant levels from illicit discharges were high enough to significantly degrade receiving water quality, and threaten aquatic life, wildlife, and human health.

The 1992, 1994, and 1996 National Water Quality Inventory Reports to Congress prepared by USEPA showed a trend of impairment in the Nation's waters from contaminated storm water and urban runoff. The recent 1998 National Water Quality Inventory (305(b) Report)¹ showed that urban runoff/storm water discharges affect 11% of rivers, 12% of lakes, and 28% of estuaries. The report states that ocean shoreline impairment due to urban runoff/storm sewers increased from 55% in 1996 to 63% in 1998. The report notes that urban runoff and storm water discharges are the leading source of pollution and the main factor in the degradation of surface water quality² in California's coastal waters, rivers and streams.

The Natural Resources Defense Council (NRDC) 1999 Report, "**Stormwater Strategies, Community Responses to Runoff Pollution**"³ identifies two main causes of the storm water pollution problem in urban areas. Both causes are directly related to development in urban and urbanizing areas:

1. Increased volume and velocity of surface runoff. There are three types of human-made impervious covers that increase the volume and velocity of runoff: (i) rooftop, (ii) transportation imperviousness, and (iii) non-porous (impervious) surfaces. As these impervious surfaces increase, infiltration will decrease, forcing more water to run off the surface, picking up speed and pollutants.
2. The concentration of pollutants in the runoff. Certain activities, such as those from industrial sites, are large contributors of pollutant concentrations to the storm water system.

The report also identified several activities causing storm water pollution from urban areas, practices of homeowners, businesses, and government agencies.

More recent studies conducted by **United States Geological Survey (USGS)**⁴ confirms the link between urbanization and water quality impairments in urban watersheds due to contaminated storm water runoff.

Furthermore, the water quality impacts of urbanization and urban storm water discharges have been summarized by several other recent USEPA reports.⁵ Urbanization causes changes in hydrology and increases pollutant loads which adversely impact water quality and impairs the beneficial uses of receiving waters. Increases in population density and imperviousness result in changes to stream hydrology including:

- a) increased peak discharges compared to predevelopment levels;

¹ *Quality of Our Nation's Waters: Summary of the National Water Quality Inventory 1998 Report to Congress* - USEPA 841-S-00-001 - June 2000; *Water Quality Conditions in the United States: Profile from the 1998 National Water Quality Inventory Report to Congress* - USEPA 841-F-00-006 - June 2000

² *Quality of Our Nation's Waters: Summary of the National Water Quality Inventory 1998 Report to Congress*, Chapter 12 State and Territory Summaries, California, pp. 282-83: 1998.

³ *Clean Water & Oceans: Water Pollution: In Depth Report Stormwater Strategies, Community Responses to Runoff Pollution*. Natural Resources Defense Council (NRDC), 1999.

⁴ *Water Quality in the Puget Sound Basin, Washington and British Columbia, 1996-98*, Circular 1216 - USGS 2000; *Water Quality in the Long Island-New Jersey Coastal Drainages, New Jersey and New York, 1996-98*, Circular 1201 - USGS 2000

⁵ *Storm Water Phase II Report to Congress* (USEPA 1995); Report to Congress on the Phase II Storm Water Regulations (USEPA1999); Coastal Zone Management Measures Guidance (USEPA 1992)

- b) increased volume of storm water runoff with each storm compared to pre-development levels;
- c) decreased travel time to reach receiving water; increased frequency and severity of floods;
- d) reduced stream flow during prolonged periods of dry weather due to reduced levels of infiltration;
- e) increased runoff velocity during storms due to a combination of effects of higher discharge peaks, rapid time of concentration, and smoother hydraulic surfaces from channelization, and
- f) decreased infiltration and diminished groundwater recharge.

The Los Angeles County MS4 program has conducted monitoring to:

- 1. quantify mass emissions for pollutants;
- 2. identify critical sources for pollutants of concern in storm water;
- 3. evaluate BMP effectiveness; and
- 4. evaluate receiving water impacts.

The monitoring indicates that instream concentrations of pathogen indicators (fecal coliform and streptococcus), heavy metals (such as Pb, Cu, Zn,) and pesticides (such as diazinon) exceed state and federal water quality criteria.⁶ The mass emissions of pollutants to the ocean are significant from the urban WMAs such as the Los Angeles River WMA, Ballona Creek WMA, and Coyote Creek WMA, with the Los Angeles River WMA providing more than seventy percent of the loadings. Critical source data for facilities (such as auto-salvage yards, primary metal facilities, and automotive repair shops) show that total and dissolved heavy metals (Pb, Cu, Zn, and Cd), and total suspended solids (TSS) exceeded state and federal water quality criteria by as much as 2 orders of magnitude. The results are consistent with a limited term study conducted by the Regional Board to characterize storm water runoff in the Los Angeles region in 1988 before the issuance of first MS4 permit.⁷ Storm water runoff data from predominant land uses in Los Angeles County showed similar patterns. Light-industrial, commercial and transportation land uses showed the highest range of exceedances. A pesticide (diazinon) was detected in higher concentrations from residential land use. The data for polycyclic aromatic hydrocarbons (PAHs), a known pollutant of concern in urban storm water runoff, is inconclusive but improved analytical methods may yield more definitive results in the future. Receiving water impacts studies found that storm water discharges from urban watersheds exhibit toxicity that are attributable to heavy metals. Biosurveys of the benthic communities showed bioaccumulation of toxicants. Sediment analysis showed higher concentrations of pollutants, such as Pb and PAHs, in urban watersheds than in rural watersheds (2 to 4 times higher). In addition, toxicity of dry weather flows

⁶ *Los Angeles County 1998-1999 Storm water Monitoring Report*, Los Angeles County Department of Public Works (1999). Data summarizes results of storm water monitoring for the most recent year and the past five years.

⁷ *Storm Water Runoff in Los Angeles and Ventura Counties, Final Report* (1988), California Regional Water Quality Control Board, Los Angeles, SCCWRP Contribution C292. This study found the highest mean concentrations of pollutants of concern such as heavy metals in the urban watershed rivers and that they contributed significant loads to the ocean.

was observed with the cause of toxicity undetermined.⁸ Other studies have found chemical concentration of pollutants that exceed state and federal water quality criteria in storm drains flowing to the ocean during dry weather,⁹ and that there are adverse health impacts from swimming near them.¹⁰

B. Benefits of Permit Program Implementation

Implementation of the MS4 permit requirements will significantly reduce pollutants in urban storm water in a cost-effective manner. Implementation of Best Management Practices (BMPs) should also reduce pollutant discharges, and improve surface water quality. The expected benefits of implementing the provisions of the Los Angeles County MS4 NPDES permit include:

- **Enhanced Aesthetic Value:** Storm water affects the appearance and quality of a water body, and the desirability of working, living, traveling, or owning property near that water body. Reducing storm water pollution will increase benefits as these water bodies recover and become more desirable.
- **Enhanced Opportunities for Boating:** reducing sediment and other pollutants, and increasing water clarity, which enhances the boating experience for users, offer additional benefits.
- **Enhanced Commercial Fishing:** Important because commercial fisheries are a part of the region's economy, and 28% of the estuaries are reportedly impacted by storm water/urban runoff.
- **Enhanced Recreational and Subsistence Fishing:** Pollutants in storm water can eliminate or decrease the numbers, or size, of sport fish and shell fish in receiving waters.
- **Reduced Flood Damage:** Storm water runoff controls may mitigate flood damage by addressing problems due to the diversion of runoff, insufficient storage capacity, and reduced channel capacity from sedimentation.
- **Reduced Illness from Consuming Contaminated Seafood:** Storm water controls may reduce the presence of pathogens in seafood caught by commercial or recreational anglers.
- **Reduced Illness from Swimming in Contaminated Water:** Epidemiological studies indicate that swimmers in water contaminated by storm water runoff are more likely to experience illness than those who swim farther away from a storm water outfall.
- **Enhanced Opportunities for Non-contact Recreation:** Storm water controls reduce turbidity, odors, floating trash, and other pollutants, which then allow waters to be used as focal point for recreation, and enhance the experience of the users.
- **Drinking Water Benefits:** Pollutants from storm water runoff, such as solids, toxic pollutants, and bacteria may pose additional costs for treatment, or render the water unusable for drinking.

⁸ *Toxicity of Dry Weather Flow from the Santa Monica Bay Watershed*, Bay, S. et al (1996), Bull. Southern California Acad. Sci. 5(1), pp. 33-45. The paper describes preliminary results on dry weather toxicity, which have been confirmed by the MS4 monitoring program.

⁹ *Chemical Contaminant Release into Santa Monica Bay, Final Report*, American Oceans Campaign, Santa Monica (1993)

¹⁰ *The Health Effects of Swimming in Ocean Water Contaminated by Storm Drain Runoff*, Haile, R.W. et al. (1999), Epidemiology 10: 355-363). The study found higher risks of respiratory and gastrointestinal symptoms from swimmers.

- **Water Storage Benefits:** Storm water is a major source of impairment for reservoirs. The heavy load of solids deposited by storm water runoff can lead to rapid sedimentation of reservoirs and the loss of needed water storage capacity.¹¹
- **Ground Water Replenishment:** Storm water can be a significant resource that can be used to recharge ground water basins in the region and reduce its dependence on imported water.

III. STATUTORY AND REGULATORY HISTORY OF THE STORM WATER PROGRAM

Over the past 29 years, water pollution control efforts have focused primarily on certain process wastewater discharges from facilities such as factories and sewage treatment plants, with less emphasis on diffuse sources. The 1972 amendments to the Federal Clean Water Act (CWA) prohibit the discharge of any pollutant to waters from a point source, unless a NPDES permit authorizes the discharge. Because the focus on reducing pollutants was centered on industrial and sewage treatment discharges, the U.S. Congress amended the CWA in 1987, requiring the USEPA to create phased NPDES requirements for storm water discharges.

In response to the 1987 Amendments to the CWA, the USEPA developed Phase I of the NPDES Storm Water Program in 1990. Phase I requires NPDES permits for storm water discharges from: (i) "medium" and "large" MS4s generally serving, or located in incorporated places or counties with, populations of 100,000 or more people; and (ii) eleven categories of industrial activity (including construction activity that disturbs five acres or greater of land). Phase II, adopted in December 2000 and scheduled to take effect in March 2003, requires operators of small MS4s and small construction sites (construction activity disturbing between 1 and 5 acres of land) in urban areas to control storm water runoff discharges.

A. Basis for Permit Conditions

1. **Statutory Basis for Permit Conditions.** The conditions established by this permit are based on CWA § 402(p)(3)(B) which mandates that a permit for discharges from MS4s must: effectively prohibit the discharges of non-storm water to the MS4; and require controls to reduce pollutants in discharges from MS4 to the maximum extent practicable (MEP) including best management practices, control techniques, and system, design and engineering methods, and such other provisions determined to be appropriate. MS4s are not exempted from compliance with Water Quality Standards. CWA § 301(b)(1)(C) requires NPDES permits to incorporate effluent limitations, including those necessary to meet water quality standards, applies. The permit conditions have been developed to meet the statutory mandate of the CWA.

The permit requires the implementation of a comprehensive Storm Water Quality Management Program (SQMP) through a selection of Best Management Practices (BMPs) (40 CFR 122.44(k)) as the mechanism to

¹¹Report to Congress on Phase II Storm Water Regulations. USEPA, Office of Water. EPA-833-R-99-001, Oct. 1999.

achieving the reduction of pollutants in storm water to the maximum extent practicable (MEP) (CWA. § 402(p)(3)(B)(iii)).

2. **Regulatory Basis for Permit Conditions.** As a result of the statutory requirements of the CWA the USEPA promulgated MS4 permit application regulations (40 CFR 122.26(d)). These regulations describe in detail permit application information to be submitted by MS4s operators. The information in the application or Report of Waste Discharge (ROWD) is utilized to develop the permit conditions.
3. **Discharge limitations.** No numeric effluent limitations are proposed at this time. In accordance with 40 CFR 122.44(k), the USEPA has required a series of increasingly more effective BMPs,¹² in the form of a comprehensive SQMP and performance criteria in lieu of numeric limitations.¹³

B. Public Review and Participation Process

Los Angeles County Flood Control District submitted the ROWD for on January 31, 2001. Since that time Regional Board staff dedicated significant time and effort to providing the opportunities for public participation and comment. More than 30 meetings, 2 workshops, and numerous outreach efforts were conducted to ensure that the public, the Permittees, and other interested parties had ample opportunity to participate in the development and comment on permit requirements and language prior to consideration by the Regional Board for adoption.

To invite public comment at the beginning of the renewal process, a preliminary draft, dated March 16, 2001, was issued to a working group of interested parties. This draft was used as a starting point for discussion. The workgroup had approximately 30 days to review it prior to the issuance of the first draft, on April 13, 2001. The first draft was sent to all Permittees, storm water consultants, environmental organizations, and other interested parties. It was also made available on the Regional Board Storm Water web page at www.swrcb.ca.gov/rwqcb4/html/programs/Stormwater/renewal.html. More than 30 days were provided for the submittal of written comments. After considering comments submitted, Regional Board staff issued the second draft permit on June 29, 2001. Comments on the second draft (due by August 6, 2001) were considered and incorporated as appropriate in the tentative draft issued on October 11, 2001. Permittees and interested parties had over thirty days to submit written comments and over forty-five days for review prior to Regional Board consideration. Comments on the tentative draft were considered and incorporated as appropriate in the edited tentative draft, which was proposed for adoption before the Regional Board on December 13, 2001. At the Board Meeting, Regional Board staff gave a presentation of the proposed permit and significant changes, and then all interested parties were invited to comment. The Regional Board members asked questions, addressed the significant public comments, and then adopted the edited tentative draft with minor changes, which are described in Section VII. A public notice announcing the Regional Board Hearing was

¹² *Interpretative Policy Memorandum on Reapplication Requirements of MS4s* issued by USEPA (61 Fed. Reg. 41697)

¹³ *Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits* (61 Fed. Reg. 43761)

published in the Los Angeles Times on October 3, 2001, more than 45 days prior to the date of the Board meeting.

Furthermore, Regional Board staff conducted separate meetings to review particular special provisions with Permittees and interested parties as necessary. In addition to these meetings, Regional Board staff held two workshops to review the permit and listen to comments, including one formal workshop with the Board members on July 26, 2001. Two full-day facilitation sessions to discuss the Industrial/Commercial Facilities Program requirements, with the Regional Board, US EPA and Permittees, were also held. Regional Board staff also participated in monthly Executive Advisory Committee meetings conducted by Permittees where they answered questions and discussed permit issues. Staff was also available for public outreach via telephone. The following table outlines some of the many opportunities for Permittee and public input provided by Regional Board staff.

Date	Public Involvement Activity
January 31, 2001	Application for permit renewal (ROWD)
February 27, 2001	Inspections Working Group Meeting
February 28, 2001	Illicit Connection/Discharge Working Group Meeting
March 1, 2001	Monitoring Working Group Meeting
March 12, 2001	Public Information and Participation Working Group Meeting
March 20, 2001	Inspections Working Group Meeting
March 20, 2001	Construction Working Group Meeting
March 22, 2001	Preliminary Draft Working Group Meeting
April 9, 2001	Monitoring Working Group Meeting
April 13, 2001	Issuance of First Draft
April 24, 2001	Public Workshop
April 24, 2001	Construction Meeting with Building Industry Association
April 27, 2001	Monitoring Working Group Meeting
May 9, 2001	Monitoring Working Group Meeting
May 16, 2001	First Draft Comments Due
May 24, 2001	Construction Meeting with BIA
June 4, 2001	Monitoring Working Group Meeting
June 14, 2001	Monitoring Station Identification Field Trip
June 25, 2001	Monitoring Working Group Meeting
June 29, 2001	Issuance of Second Draft
July 26, 2001	Formal Workshop with Regional Board
August 6, 2001	Second Draft Comments Due
August 8, 2001	Executive Advisory Committee Meeting

Date	Public Involvement Activity
September 12, 2001	Executive Advisory Committee Meeting
September 19, 2001	Meeting with City of Rancho Palos Verdes
September 27, 2001	Meeting with County of Los Angeles Dept. of Public Works
September 27, 2001	Meeting with BIA and AGC
October 3	Meeting with County and City Departments of Health
October 11, 2001	Issue Tentative Draft
November 9, 2001	Mediation Session with EPA
November 13, 2001	Comments on Tentative Draft Due
November 19, 2001	Monitoring Working Group Meeting
November 29, 2001	Mediation Session with EPA
December 13, 2001	Adoption at Board Meeting

IV. BACKGROUND - LOS ANGELES COUNTY MS4

A. Los Angeles County MS4 Permit History

In 1990, the Los Angeles Regional Board (Regional Board) adopted Order No. 90-079, the Los Angeles County MS4 Permit. That permit required the Los Angeles County Flood Control District, the County of Los Angeles and the incorporated cities in Los Angeles County to implement storm water pollution controls including amending ordinances, optimizing existing pollutant controls such as street sweeping, construction site controls, and others. The Regional Board required all Permittees to implement a minimum list of 13 BMPs for consistency across the County. The 1990 permit was issued on a system wide basis due to the highly interconnected storm drain system serving a population well in excess of 100,000 inhabitants. An NPDES permit is valid for a five-year period after the date is issued.¹⁴

On July 15, 1996, the Regional Board adopted Order No. 96-054 that revised the 1990 permit. The 1996 LA County MS4 permit required model programs be developed and implemented by the Permittees for Public Information and Public Participation, Industrial/Commercial Activities, Development Construction, Illicit Connections and Illicit Discharges, Public Agency Activities, and Development Planning. These model programs were intended to be dynamic and expected to change with time, as more information on storm water impacts became available.

Following the adoption of Order 96-054, the City of Long Beach submitted a ROWD as an application for its own MS4 permit. The City of Long Beach Municipal Storm Water Permit (Order No. 99-060) was adopted on June 30,

¹⁴ 40 CFR §122.46 (a)

1999. This Order superseded the countywide permit requirements for the City of Long Beach, and the City now operates under its separate MS4 permit.

On January 31, 2001, the Los Angeles County Department of Public Works submitted an application for renewal of their MS4 permit in the form of an ROWD for Los Angeles County and the incorporated cities, except for the City of Long Beach. This application started the process for reissuance of the permit, which enters into its third permit term now.

B. Los Angeles County Storm Drain System

The MS4 covered by this proposed permit for the County of Los Angeles and 83 incorporated cities drains the coastal slopes of the Transverse Mountain Ranges, and flows into the Santa Monica Bay and the Los Angeles/Long Beach Harbor. The storm drain structure consists of thousands of catch basins, thousands of miles of underground storm drains, as well as open channels, all owned and operated separately by Permittees. The length of the system, and the locations of all storm drain connections, are not known exactly, as a comprehensive map for the storm drain system does not exist. Rough estimates, based on information from large municipalities (population > 100,000), indicate that the length exceeds 4,300 miles, as shown below.

Permittee	Area (Square Miles)	Catch Basins	Storm Drain Length	Open Channel Length
LA County	3,100	73,000	2,650 miles	450 miles
City of LA	469	30,000	1,600 miles	31 miles
El Monte	10	316	11 miles	0.4 mile
Glendale	30.6	1,100	Unknown	Unknown
Inglewood	9	1,157	12 miles	Unknown
Pasadena	26	1,050	30	Unknown
Santa Monica	8.3	850	Unknown	Unknown
Torrance	20	2,000	20 miles	3 miles
TOTAL		109,473	4,323	484.4

C. Summary of Water Quality Issues in Los Angeles County Watersheds

Watersheds are geographic areas draining into a river system, ocean or other bodies of water through a single outlet. There are six Watershed Management Areas (WMAs) that represent the six major watersheds covered by the Los

Angeles County MS4 NPDES permit. The following is a summary of some significant issues in each watershed.¹⁵

Dominguez Channel/Los Angeles-Long Beach Harbor Watershed

Permitted discharges

- 415 dischargers covered under an industrial storm water permit
- 69 dischargers covered under a construction storm water permit

Potential sources of pollution

- Historical deposits of DDT and PCBs in sediment
- Spills from ships and industrial facilities
- Leakages contaminating groundwater
- **Urban and storm water runoff**
- Impairments: metals, PCBs, PAHs, historic pesticides, coliform, trash, and nitrogen

Los Angeles River Watershed

Permitted discharges

- 1,327 dischargers covered under an industrial storm water permit
- 147 dischargers covered under a construction storm water permit

Potential sources of pollution

- Nitrogen and coliform contributions from septic systems
- Other nonpoint sources (horse stables, golf courses)
- Leakage of MTBE from underground storage tanks
- **Urban and storm water runoff**
- Impairments: nitrogen, trash, selenium, other metals, coliform, PCBs, historic pesticides, chlorpyrifos

San Gabriel River Watershed¹⁶

Permitted discharges

- 549 dischargers covered under an industrial storm water permit
- 175 dischargers covered under a construction storm water permit

Potential sources of pollution

- Excessive trash in recreational areas of upper watershed
- Nonpoint source loadings from nurseries and horse stables

¹⁵ *Watershed Management Initiative Chapter*. California Regional Water Quality Control Board – Los Angeles Region. Dec. 2000.

¹⁶ *San Gabriel Watershed State of The Watershed* - RWQCB - LA Region - June 2000

- **Urban and storm water runoff**
- Impairments: nitrogen and effects, trash, metals, historic pesticides, coliform, chlorides, and PCBs

Santa Monica Bay Watershed

- 147 dischargers covered under an industrial storm water permit
- 107 dischargers covered under a construction storm water permit

Potential sources of pollution

- Discharges from Ballona and Malibu Creeks contribute to impairments in the Santa Monica Bay and its beaches.
- Impairments: mercury, selenium, other metals, historical pesticides, PAHs, PCBs, nitrogen, coliform, trash, TBT, habitat alteration, exotic vegetation, and salts

Coastline

- **Acute health risk associated with swimming in runoff contaminated surfzone waters**
- Chronic risk associated with consuming seafood from areas impacted by DDT and PCB contamination
- Historic deposits of DDT and PCBs in sediment

Ballona Creek Watershed

- Trash loading from creek
- Sediment contamination by heavy metals from creek to Marina del Rey Harbor and offshore
- **Toxicity of both dry weather and storm water runoff in creek**
- High bacterial indicators at mouth of creek

Malibu Creek Watershed

- Excessive freshwater, nutrients, and coliform in lagoon; contribution from POTW and other sources
- **Urban runoff from upper watersheds**
- Septic tanks in lower watershed

Santa Clara River Watershed

Permitted discharges

- 4 POTWs
- 98 dischargers covered under an industrial storm water permit
- 190 dischargers covered under a construction storm water permit

Potential sources of pollution

- Agriculture
- Increasing loads of nitrogen and salts in supplies of ground water

- POTW discharges
- Increasing development and channelization that results in increased runoff volumes and velocities, erosion, and loss of habitat
- Septic tanks
- Impairments: chloride, nutrients (nitrogen), coliform, trash (in parts of watershed)

D. Enforcement Provision

During the renewal process for the existing permit (i.e. in 1995 and 1996), the permittees proposed and the Regional Board agreed to addition of a “Notice to Meet and Confer” provision (Part 2, section G of the existing permit). This was envisioned as an administrative review process for resolving permit disputes before the Regional Board would take formal enforcement action. It has been actually used only once (in 2000), when the Regional Board issued Notice to Meet and Confer letters to permittees in the Los Angeles River and Ballona Creek watersheds. The purpose of this process was to determine the effectiveness of municipalities’ efforts to reduce trash in waters that are impaired by trash.

Subsequent to renewal of the existing permit, the State developed an enforcement policy (State Board Resolution 96-030) and guidance, which sets forth a progressive strategy that has the goal of ensuring consistent, predictable, and fair enforcement of regulations. This is now a well-established and widely implemented policy throughout the State, including in the Los Angeles Region. Therefore, with this policy of progressive enforcement in place the Notice to Meet and Confer provision is not needed; accordingly, the proposed permit does not contain this provision.

E. Total Maximum Daily Loads (TMDLs)

Part 3, Section C. of the proposed permit specifies that the Permittees shall amend the SQMP to comply with load allocations approved pursuant to adoption and approval of Total Maximum Daily Loads (TMDLs). The addition of this provision represents a significant difference from the existing permit, which does not contain a provision for implementation of TMDLs. In addition, the Special Provisions for the Permittees’ Program for Public Agencies (Part 4, Sections F.7. and F.8.) specifies performance measures for watersheds subject to a trash TMDL.

TMDLs are one of the Regional Board’s highest priorities. In view of the Region’s highly urbanized environment, it is likely that pollutants in storm water will be allocated significant load reductions. While specific load reductions can’t be forecast at this time, the Board does envision that storm water permits will be an important mechanism for implementing pollutant load reductions. An early example of the relationship between TMDLs and storm water permits is the trash TMDL adopted for the Los Angeles River and Ballona Creek on September 13, 2001, which directs municipalities to monitor for baseline trash levels for 2-4

years, and then to start implementing trash prevention and/ or control measures to reduce trash to “zero” by the year 2013. This 5-year permit incorporates the monitoring requirements of the TMDL and, based on the results of the monitoring requirements, specified load reductions of 60% by 2006. Permits that are adopted subsequent to this MS4 permit are expected to incorporate the remaining load allocation reductions to achieve “zero” trash in the Los Angeles River and Ballona Creek by 2013.

Public review of the Regional Board’s TMDLs, will occur during the TMDL adoption process (there need not be an additional public process for TMDL implementation and Basin Plan amendment). Upon approval of a TMDL, the waste load allocations and load allocations (specified in that TMDL) will become effective and enforceable under this permit. This TMDL provision is consistent with TMDL provisions in the Long Beach and Ventura County MS4 permits.

F. Revision of the Permittees’ Storm Water Quality Management Program

In general, MS4 permits such as the Los Angeles County MS4 Permit do not have numeric effluent limits for storm water discharges. Rather, the Regional Board relies on a BMP approach implemented by the Permittees to reduce the discharge of pollutants in storm water to the MEP. Therefore the development and implementation of the special provisions (i.e. the model programs) become of paramount importance.

The Special Provisions in the next section are - for the most part - based on the Permittees’ existing model programs, which they’ve been implementing since at least 1999. The incremental changes Regional Board staff has made to the current permit include greater specificity, and better measures to determine implementation. Some of the Permittees are already meeting these performance measures. The performance measures in the permit help to clarify the MEP compliance expectations and set a consistent bar for all Permittees.

V. DISCUSSION OF SPECIAL PROVISIONS

A. Public Information and Participation Program (PIPP)

Legal Authority:

CWA § 402(p)(3)(B)(ii-iii), CWC section 13377, and NPDES regulations at 40 CFR 122.26(d)(2)(I)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) provides that the proposed management program include "A description of a program to reduce to the maximum extent practicable, pollutants in discharges from MS4s associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and

other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities."

NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(6) provides that the proposed management program include " A description of education activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials."

To satisfy the Public Education and Outreach minimum control measure, the Permittees need to: (i) implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of storm water discharges on local waterbodies and the steps that can be taken to reduce storm water pollution; and (ii) determine the appropriate BMPs and measurable goals for this minimum control measure.

Background:

Implementation of a PIPP is a critical BMP and a necessary component of a storm water management program. The State Board Technical Advisory Committee "recognizes that education with an emphasis on pollution prevention is the fundamental basis for solving nonpoint source pollution problems." The USEPA Phase II Fact Sheet 2.3 (Fact Sheet 2.3) finds that "An informed and knowledgeable community is critical to the success of a storm water management program since it helps insure the following: (i) greater support for the program as the public gains a greater understanding of the reasons why it is necessary and important, and (ii) greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters."¹⁷

Furthermore, the public can provide valuable input and assistance to a municipal storm water management program and, therefore, should play an active role in the development and implementation of the program. An active and involved community is essential to the success of a storm water management program because it allows for:

- Broader public support since residents who participate in the development and decision making process are partially responsible for the program and, therefore, are more likely to take an active role in its implementation;
- Shorter implementation schedules due to fewer obstacles in the form of public and legal challenges and increased sources in the form of residents volunteers;
- A broader base of expertise and economic benefits since the community can be a valuable, and free, intellectual resource; and
- A conduit to other programs as residents involved in the storm water program development process make important cross-connections and relationships with other community and government programs. This benefit is particularly

¹⁷ *Storm Water Phase II Final Rule - Public Education and Outreach Minimum Control Measure*. USEPA Fact Sheet 2.3, January 2000.

valuable when trying to implement a storm water program on a watershed basis.

Discussion of New Requirements:

Los Angeles County should continue its comprehensive educational storm water and urban runoff outreach program, which is designed to measurably increase public knowledge and change behavior regarding storm water pollution. The first five-year public education program initiated in 1996 was successful at studying segments of Los Angeles County residents to identify those who pose the greatest threat to storm water quality and those who represent the greatest opportunity to respond positively to a public education program, as well as providing a baseline measurement of residents' storm water-related practices and habits. This information was used to target the residents who are most likely to change their behaviors to improve storm water quality. Using various communication tactics and activities, the program successfully reached 83% of County residents with pollution prevention messages through the Storm Water/Urban Runoff Public Education Program Five-Year Storm Water Public Education Strategic Analysis (Five-Year Strategy).¹⁸

Although the Program has been successful at certain goals, it must be augmented to continue increasing public awareness of specific storm water issues. According to the USEPA, materials and activities should be relevant to local situations and issues, and incorporate a variety of strategies to ensure maximum coverage.¹⁹ To help address local situations and sources of specific pollutants, section B.1.d. of the PIPP requires the development of watershed and pollutant-specific education programs.

A need also exists to target ethnic groups that may not be reached by or understand existing storm water educational materials. In an effort to reach these groups the PIPP requires the development of a strategy to provide outreach and bilingual materials to target ethnic communities.

Also, the USEPA encourages partnerships and cooperation among Permittees, businesses and the public.²⁰ Quarterly meetings will provide the opportunity for Permittees to coordinate their outreach efforts and efficiently build on the County's existing program with local, watershed-specific efforts. Since the Program's inception, Permittees have been required to conduct educational activities within their own jurisdictions. The lack of guidance and coordination has led to duplicate efforts and confusion about developing appropriate programs that are consistent with, and enhance the Principal Permittee's regional education program. This requirement will ensure that all Permittees are coordinated for the most efficient and effective Program. It will also help identify Permittees with insufficient Programs.

¹⁸ Storm Water/Urban Runoff Public Education Program Five-Year Storm Water Public Education Strategic Analysis, Los Angeles County of Public Works, July 31, 2000.

¹⁹ Phase II Fact Sheet 2.3

²⁰ *Id.*

It is generally more cost-effective to have numerous operators coordinate to use an existing program than all developing their own local programs. Therefore, Permittees should build on the regional program with additional information specific to local needs.

Furthermore, directing materials or outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm water impacts is recommended.²¹ Pursuant to Order 96-054, the Principal Permittee conducted educational site visits to Phase I industrial facilities, auto repair shops, retail gasoline outlets, and restaurants over the last 5 years. The next step in this targeted outreach program is education at the corporate level to facilitate employee compliance.²² Therefore, the Principal Permittee is required to implement a corporate outreach program to educate corporate management at gas stations and restaurant chains about storm water regulations.²³ Also, a non-regulatory business assistance program would encourage small businesses that lack access to the expertise necessary to comply with storm water regulations and to implement pollution prevention measures. The business assistance program is not a requirement, however, its implementation is encouraged.

Program Performance Measures:

The previous public information program did not include a protocol to measure the effectiveness of the different public education efforts. The new permit includes requirements to measure the outcome of outreach efforts and demonstrate that they are effective at increasing knowledge and changing the behavior of the public in regards to storm water pollution. The permit includes requirements for the Principal Permittee to develop a strategy for measuring the effectiveness of different educational programs and to develop a behavioral change target that will become a performance measure that must be reported on in Annual Reports.

In addition to the assessment requirements mentioned above, the Principal Permittee is also required to: (a) ensure that a minimum of 35 million impressions per year are made on the general public about storm water via print, local TV access, local radio, or other appropriate media; and (b) provide all School Districts within its jurisdiction with materials, including videos, live presentations, brochures, and other media necessary to educate a minimum of fifty percent of all school children (K-12) every 2 years on storm water pollution. These performance measure are justified based on their consistency with requirements in the City of Long Beach and Ventura County MS4 permits, and on the Principal Permittee's previous performance of PIPP requirements.

According to the Principal Permittee's Year Four (1999-2000) Highlights, approximately 85 million impressions were made through advertising, media relations, customized coffee jackets, corporate partnerships, special events, and

²¹ Phase II Fact Sheet 2.3

²² *Storm Water/Urban Runoff Public Education Program Five-Year Storm Water Public Education Strategic Analysis*, Los Angeles County Public Works, July 31, 2000. Part P.5.

²³ Permit, Part 4, section B.2.a.

business outreach. Hits on the www.888CleanLA.com web site have been consistently increasing, indicating a growing public interest, as well as greater awareness. Also, increased media attention and public interest in current issues, such as trash TMDLs, is expected. Los Angeles County has committed to making a minimum of 35 million impressions per year.

Furthermore, the requirement is consistent with the number of impressions (3 - 3.5 per resident) required in the Long Beach MS4 Permit and the Ventura County MS4 Permit. The City of Long Beach is required to make a minimum of 1.5 million impressions per year. With a total population of approximately 426,000 people, this amounts to 3.5 impressions per resident per year. Ventura County is required to achieve 3 impressions per resident per year. Los Angeles County's population is 9.5 million people.²⁴

According to data provided by Los Angeles County, the School Environmental Education Program has been reaching approximately 50 percent of elementary and secondary schools in the County every 2 years. It is also expected that the required coordination among Permittees will increase the effectiveness and scope of this Program.

B. Industrial/Commercial Facilities Program

Legal Authority:

The Phase I regulations require, in part, that the applicant (i) develop adequate legal authority, (ii) perform a source identification, and (iv) develop a management program to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system design and engineering methods, and such other provisions which are appropriate.²⁵ Specifically, with regards to industrial controls, the management plan shall include the following.

40 CFR 122.26(d)(2)(iv)(C), A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system. The program shall:

- (1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.*
- (2) Describe a monitoring program for storm water discharges associated with industrial facilities [...]*

Background:

The municipality is ultimately responsible for discharges from the MS4. Because industrial awareness of the program may not be complete, there may be facilities

²⁴ 2000 U.S. Census Bureau

²⁵ 40 CFR 122.26(d)(2)

within the MS4 area that should be permitted but are not (non-filers). In addition, the Phase I regulations that require industries to obtain permit coverage for storm water discharges is largely based on SIC Code. This has been shown to be incomplete in identifying industries that may be significant sources of storm water pollution ("*industries*" includes commercial businesses). The word "*industries*" is used in a broad sense). Another concern is that the permitting authority may not have adequate resources to provide the necessary oversight of permitted facilities. Therefore, it is in the municipality's best interest to assess the specific situation and implement an industrial/commercial inspection/site visit and enforcement program to control the contribution of pollutants to the MS4 from all high risk sources.

In the preamble to the 1990 regulations, the USEPA clearly states the intended strategy for discharges of storm water associated with industrial activity:

"...Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system." The USEPA also notes in the preamble that *"... municipalities will be required to meet the terms of their permits related to industrial dischargers."*

Similarly, in the USEPA's Guidance Manual¹ (Chapter 3.0), it is specified that MS4 applicants must demonstrate that they possess adequate legal authority to:

- Control construction site and other industrial discharges to MS4s;
- Prohibit illicit discharges and control spills and dumping;
- Carry out inspection, surveillance, and monitoring procedures.²⁶

The document goes on to explain that "*control*", in this context means not only to require disclosure of information, but also to *limit, discourage, or terminate* a storm water discharge to the MS4. Further, to satisfy its permit conditions, a municipality may need to impose additional requirements on discharges from permitted industrial facilities, as well as discharges from industrial facilities and construction sites *not* required to obtain permits.

In the same Guidance Manual²⁷ (Chapter 6.3.3), it is stated that the municipality is ultimately responsible for discharges from their MS4. Consequently, the MS4 applicant must describe how the municipality will help the USEPA and authorized NPDES States to:

- Identify priority industries discharging to their systems;
- Review and evaluate storm water pollution prevention plans (SWPPPs) and other procedures that industrial facilities must develop under general or individual permits;

²⁶ *Guidance Manual For the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems* - USEPA -November 1992

²⁷ *Id.*

- Establish and implement BMPs to reduce pollutants from these industrial facilities (or require industry to implement them); and
- Inspect and monitor industrial facilities discharging storm water to the municipal systems to ensure these facilities are in compliance with their NPDES storm water permit, if required.

Discussion:

Recognizing that the municipality is ultimately responsible for the quality of storm water discharges from the MS4, the municipalities must evaluate industrial/commercial facilities and determine their compliance with the permit requirements, as well as their contribution to the MS4 and potential impacts to the receiving waters. The following areas are to be addressed in order to implement a meaningful industrial/commercial inspection/site visit and enforcement program.

- **Source Identification**
 - Identification of industrial/commercial sites discharging to the MS4 (by SIC codes and narrative if needed)
 - Characterization of activities, materials used, and potential for contributing pollutants along with the type of pollutants
- **Pollution Prevention**
 - Key concepts are many times overlooked: Prevent, before it happens, and be pro-active rather than reactive. It is more difficult to treat after the pollutant is released or mixes with storm water. BMPs and other site-specific controls are often most appropriate for reducing pollutants in storm water discharges from industrial and commercial facilities.
- **Threat to Water Quality Prioritization**
 - Identify impaired water bodies by pollutants and link with activities and industrial/commercial sites that may contribute those particular pollutants (or potentially contribute to) the water quality impairment
- **Through existing ordinance, order, or similar means, the ability to**
 - enter premises;
 - conduct inspections;
 - review and evaluate SWPPPs and monitoring results review;
 - require control methods (BMPs) implementation; and,
 - take appropriate enforcement actions, if necessary.

It may be necessary to update existing ordinances if they do not provide sufficient legal authority to implement the above mentioned components as required by the regulations.

Integration of NPDES Program for MS4 with NPDES Program for Industrial Activities

Recognizing the dual coverage envisioned by the USEPA regulations²⁸, and suggested partnership between local and State authorities, municipalities shall coordinate with State activities for the implementation of the General Industrial Activities Storm Water Permit (GIASP). The goal is to control industrial sources and other sources not specifically covered under Phase I storm water regulations but identified as significant contributors of pollutants by the municipalities through their identification and prioritization studies. The net result should be a better and improved coordinated program with greater impact on limiting and eliminating (as a final goal) the contribution of pollutants to the receiving water while maintaining and/or restore the capacity of the receiving water to sustain the beneficial uses without impairments.

The *Critical Source Selection and Monitoring Report*²⁹ identified seven highest ranked pollution potential activities to be, in order of ranking: (i) wholesale trade (scrap, auto dismantling), (ii) *automotive repair/parking*, (iii) fabricated metal products, (iv) motor freight (including trucking), (v) chemical and allied products, (vi) automotive dealers/gas stations, (vii) primary metals products. The report also outlined a complete study plan to be implemented by the Permittees during the permit term. It is significant to note that five out of seven categories of activities are subject to Phase I industrial storm water regulations. Although *automotive repair/parking* and automotive dealers/gas stations categories were not the focus of the Phase I storm water regulations, the study identified these commercial categories as significant potential pollutant contributors based on the criteria developed in the critical source criteria study.

Rank (pollution potential) ³⁰	Industrial Category	SIC Code	No. Facilities (estimated)
1	Wholesale trade (scrap, auto dismantling)	50	587
2	<i>Automotive repair/parking</i>	75	6,067
3	Fabricated metal products	34	3,283
4	Motor freight (including trucking)	42	872
5	Chemical and allied products	28	1,069
6	<i>Automotive Dealers/Gas Stations</i>	55	2,744
7	Primary Metals Products	33	703

It is also important to note that heavy metals are significant pollutants transported in storm water discharges and cause impairment of receiving waters in the Los Angeles Region. The above table identifies at least two industrial categories that have the highest potential to contribute those pollutants: fabricated metal products and primary metal products. During the previous permit term, Los Angeles County conducted a Critical Source Study (1998-2000). The aim of the study was to monitor for two years the previously identified

²⁸ Federal Register Vol. 55, No 222, pp. 48000; USEPA Storm Water Phase II Compliance Assistance Guide, 2000, pp. 4-32 and 5-11, where it clarifies the dual responsibility

²⁹ Critical Source Selection and Monitoring Report, Woodward-Clyde, 1997

³⁰ *Critical Source Selection and Monitoring Report (Table 1-3)* - Woodward-Clyde 1996

five priority industrial and/or commercial critical source categories. The results of the study confirmed that the critical source industries are indeed high risk. Storm water discharges exceeded water quality standards for almost all toxic pollutants in all categories.

Based on the dual coverage and partnership approach between the permitting authority and municipalities that the USEPA called for in the storm water regulations (see letters from Alexis Strauss, USEPA Water Division Director),^{31,32} and in order to best use limited resources at the State and local level, the permit includes the following improvements.

Recognizing that this permit represents a *third term* permit, and building upon the experience and tools developed under the previous permits, the Industrial/Commercial program has been elevated to an inspection and enforcement program. The municipalities are required to (i) control the storm water discharges associated with industrial activities and other commercial facilities identified as significant contributors of pollutants, and (ii) assist the Regional Board in ensuring that industrial activities are covered by the general industrial storm water permit. This requirement is consistent with the nationwide approach used by the USEPA in issuing *second term* MS4 permits.³³ Also, this requirement is consistent with other MS4 permits issued in California: San Diego and Santa Clara MS4 permits. Business education and outreach should be continued under the auspices of the Public Education program.

The strategy as outlined in the draft permit builds on the State/municipalities partnership by focusing their limited resources on the following activities:

- The Permittees will take a lead role in inspecting restaurants, automotive service facilities, retail gasoline outlets, industrial facilities mandated specifically by the regulations, top five highest ranking industrial categories identified by the Permittees through their critical sources identification and monitoring studies and site visits at the remaining industrial categories identified through their critical sources identification study while
- The Regional Board will be the lead agency for inspections of facilities covered or in need of coverage under GIASP;
- The Permittees will assist Regional Board in its activities to fully enforce the GIASP through spot check inspections, referrals, data information research, joint inspections;
- The Regional Board and Permittees will coordinate their information systems and task scheduling to avoid duplication and strengthen harmonization of activities;
- The Regional Board may, based on available funding, enter into agreement with Permittees to contract some of the inspection activities required by the GIASP to be done by the Permittees.

³¹ Letter dated December 19, 2000, from Alexis Strauss, Director, Water Division, USEPA Region IX, to Dennis Dickerson, Executive Officer, Regional Water Quality Control Board-Los Angeles Region.

³² Letter dated April 30, 2001, from Alexis Strauss, Director, Water Division, USEPA Region IX, to Honorable Stephen Horn, U.S. House of Representatives

³³ MS4 NPDES Permits issued to Palm Beach County, Broward County, Sarasota County, Florida, Tulsa, Oklahoma, Denver, Colorado.

Based on comments received from interested parties, various options have been considered for inclusion in the permit, based on the legal requirements and background data already provided by the Permittees:

- First draft (April 13, 2001): Staff took a “top-down” approach to inspections, proposing that Permittees screen databases of tens of thousands of industrial and commercial facilities to identify facilities that should be targeted for an inspection program.
- Second draft (June 29, 2001): In response to comments submitted on the first draft, staff attempted to better structure a partnership between the Regional Board and Permittees. The Regional Board would lead efforts to regulate “Phase 1” industrial facilities (which are subject to the State’s General Industrial Activities Storm Water Permit), and the Permittees lead efforts to regulate other problem sectors, such as automotive service facilities, restaurants, and RGOs.
- Third draft (October 11, 2001): Staff proposed three options for Board’s consideration. Staff structured an **Option A** to encompass inspections of:
 - USEPA mandated facilities (i.e. landfills, Resource Conservation and Recovery facilities, and toxics treatment storage disposal facilities “TSDF”),
 - the automotive sector,
 - restaurants, and
 - retail gasoline outlets.

In Regional Board staff’s opinion, such a minimal requirement fails to address other critical industrial sources of pollutants. To address this concern and to ensure that pollutants from other critical sources are controlled, staff presented **Option B**. This Option B captures sectors in Option A plus five other priority sectors, which are sources of pollutants that cause many of the impairments to surface waters in Los Angeles County. These five priority sectors are:

- scrap recycling,
- automotive dismantling,
- metal fabrication,
- motor freight,
- chemical manufacturing, and
- primary metal products.

Option C is status quo – it retains the site visit program as required by the MS4 permit issued by the Regional Board in 1996. It does not recognize the Board’s original intent to upgrade the site visit program to an inspection-based program in the long term.

At the request of certain Permittees, the US EPA facilitated two day-long sessions, on November 9th and 29th, during which discussions among Permittees, Regional Board staff, and environmental representatives focused on inspection requirements as presented in the third draft as Options A, B, and C.

Participants made diligent attempts to understand various positions and limitations and, as a result, another option, **Version A/C**, emerged as converging toward a potential consensus.

Version A/C blends elements of the other options previously submitted to the Board and to the public, provides greater clarity with regard to Regional Board expectations and responds to Permittees' concerns over funding by better coordinating State (i.e. Regional Board) inspection efforts with those of the Permittees.

Version A/C clarified and reduced the scope of inspections. In general, frequencies have been reduced from once every 24 months to once every 30 months. In addition, Phase I facilities have been separated in Tier 1 and Tier 2 sites and further reduced the frequency of inspections for Tier 2 category to once every 5 years. The facilities with no exposure of industrial activity to storm water need not be inspected, after the initial determination of no-exposure, during the term of the permit..

Another significant adjustment was the addition of a provision relieving permittees of the responsibility to inspect those Phase I facilities that the Regional Board has inspected within the previous 24 months. In regards to the level of inspection, it was clarified that the Permittees are expected to check during inspections for compliance with the implementation of minimum BMPs, as previously approved by Board Order 98-08, and compliance with the local storm water ordinances.

Version A/C also provides better clarity concerning the scope of enforcement. A progressive enforcement procedure was outlined including minimum steps that Permittees must take in their program to enforce their municipalities' storm water requirements. In recognition of some of the Permittees concerns regarding the resource intensive efforts needed to elevate enforcement actions, a mechanism was provided through which Permittees can refer cases to the Regional Board, and for violations of the State's General Industrial Activities Storm Water permit, the referral can be expedited.

C. Construction Sites Program

Legal Authority:

USEPA storm water regulations at 40 CFR 122.26(d)(2)(iv)(D) provide that a proposed management program must include "a description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system".

The permit provides consistency with the Long Beach MS4 permit and the Ventura County MS4 permit.

Background:

There are several environmental impacts associated with construction activity.

As stated in the *California Storm Water Best Management Practice Handbook for Construction Activity* (BMP Handbook), "Construction usually increases the amount of impervious area causing more of the rainfall to runoff, and increasing the speed at which runoff occurs. Unless properly managed, this increased runoff will erode natural and/or unprotected watercourses causing the watercourse to widen...Sedimentation can also contribute to accelerated filling of reservoirs, harbors, and drainage systems."³⁴

Discussion:

The prevention of erosion is a key objective of the permit modifications to the construction program. The Permittees currently oversee construction sites within their respective jurisdiction. The oversight of smaller construction sites (those sites under five acres) is inconsistent among Permittees. Some Permittees have incorrectly assumed that responsibility begins only after a discharge of pollutants, sediments for example, has left the site. USEPA storm water regulations do not support such interpretations. Regional Board staff has clarified this in the permit to require that the municipalities better coordinate oversight of construction activity within their jurisdiction. The Permittees are ultimately responsible for what enters and exits the MS4 that they own and/or operate. It is in the best interest of the Permittees to control what enters their storm drain system.

Justifications for New Requirements:

NEW REQUIREMENT: The new permit requires that Permittees promote the use of effective erosion and sediment controls at construction sites regardless of size.

JUSTIFICATION: The need for proper erosion and sediment controls is very apparent during, and immediately after, the rains that occur in Southern California. The environmental effects of erosion are well documented. Erosion can be prevented or reduced with the proper planning and implementation of appropriate BMPs.

NEW REQUIREMENT: Requirements for source control and treatment control BMPs for controlling runoff at construction sites.

JUSTIFICATION: Erosion occurs when land is exposed and the sediments are mobilized. With adequately engineered and implemented structural or non-structural BMPs, the detrimental environmental effects can be eliminated or minimized. Currently, there are many manuals and guidance handbooks available to guide a developer. The municipalities, in general, are aware of

³⁴ *California Storm Water Best Management Practice Handbook for Construction Activity*. 1993.

these BMPs, and can work with Regional Board staff to ensure that they are being implemented.

NEW REQUIREMENT: Each Permittee shall require the preparation, submittal, and implementation of a Local SWPPP prior to issuance of a grading permit for construction projects that meet one or more of the following criteria: will result in soil disturbance of one acre or more in size.

JUSTIFICATION: This is to ensure that a site that is being graded, but is less than the required size threshold (5 acres) for a General Construction Activities Storm Water Permit (GCASP) has oversight by the Permittee to ensure implementation of erosion controls and construction waste management practices. Currently, grading requirements are inconsistently applied. Beginning March 2003, USEPA Phase II storm water regulations require that sites one acre to five acres become subject to permitting as well.

NEW REQUIREMENT: The Permittees shall implement a process to review, approve, and enforce any erosion control plan submitted to the Permittee for implementation at construction sites, regardless of size and GCASP coverage of the sites. Local SWPPPs shall be required for projects of one acre or more in size.

JUSTIFICATION: The Permittees need to enforce local storm water ordinances at construction sites to prevent erosion. They should not wait for a discharge to occur before initiating enforcement action.

REQUIREMENT: For sites that require a construction storm water permit, Permittees are required to ensure that a Notice of Intent (NOI) has been filed with the State Board prior to issuing a grading permit. This requirement also applies to land transfers between developers on common plans of sale or development that were five or more acres initially.

JUSTIFICATION: This is currently a requirement in Board Order No. 96-054, but not all Permittees have consistently implemented this provision. Regional Board staff inspect construction sites covered by a GCASP. Some Permittees have issued a grading permit where a GCASP was not obtained. State/municipal coordination will ensure that all construction sites have obtained the required permits.

NEW REQUIREMENT: Wet weather inspections are required of all construction sites one acre or greater. The Permittees need to conduct wet weather inspections to ensure compliance with local ordinances.

JUSTIFICATION: If all sites are inspected, this allows the Permittees to ascertain compliance and focus educational and enforcement efforts on those that most need it. Additionally, Regional Board staff can assist the Permittees in compliance oversight by conducting joint inspections.

D. Illicit Connections and Illicit Discharges Elimination Program

Legal Authority:

A proposed management program “shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer,” per 40 CFR 122.26(d)(2)(iv)(B). A Permittee must include in its proposed management program “a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system,” per subsection (1) of the above regulation.

Background:

During dry weather, much of the discharge to storm drain systems consists of wastes and wastewater from non-storm water sources. A significant amount of such discharges may be from illicit discharges or connections, or both. Illicit discharges may occur either through direct connections, such as deliberate or mistaken piping, or through indirect connections, such as dumping, spillage, subsurface infiltration, and washdowns.

The objective of a municipality's illicit connection/illicit discharge (IC/ID) elimination program should be to detect illicit connections and illicit discharges to the storm drain system, and to promptly remove such discharges and connections. Municipalities typically employ the approaches listed below to achieve this objective:

1. Permitting connections to the municipal storm drain.
2. Mapping the storm drain system, locations of catch basins, outfalls, permitted connections, and the names and locations of all waters of the U.S. that receive discharges from the outfalls.
3. Adopting a storm water/ urban runoff ordinance to prohibit unauthorized non-storm water discharges into the MS4, and implementing appropriate enforcement procedures and actions.
4. Implementing a program to detect and eliminate non-storm water discharges to the MS4, including illegal dumping.
5. Educating public employees, businesses, and the general public about the dangers associated with illegal discharges and improper disposal.
6. Establishing a public reporting hotline or other mechanism to report illicit discharges and illegal dumping.
7. Establishing measurable goals to evaluate successful program implementation.

Discussion:

Existing IC/ID Elimination Program

The Regional Board approved a model IC/ID elimination program for the Permittees' SQMP on March 23, 1999. However, only vague performance standards were specified in this model program.

By July 1999, all Permittees reported that they implemented an IC/ID elimination program. For the most part, however, this was a passive program, and relied upon IC/ID detection during regularly scheduled maintenance. Most Permittees are unable to estimate the extent of their storm drain they have screened during regularly scheduled maintenance.

Results of the Permittees' efforts to eliminate illicit connections are summarized in Tables 1 through 5. Their estimates of fiscal resources required to implement these activities for 1999/00 range widely, with two cities – Culver City and Hermosa Beach – estimating budgets of \$4.2 million and \$2.8 million, respectively. At the other end, four cities estimated \$0 expenditures, namely La Habra Heights, Lawndale, Maywood (which does not operate a storm drain system), and West Covina. Based on the Permittees' estimates of expenditures, the Permittees budgeted an average of \$113,900 in 1999/00. Removing the anomalous estimates for Culver City and Hermosa Beach, the high ranges up to \$564,809, as estimated by the City of Los Angeles, and averaged \$32,500. These activities, as summarized in the tables, do not appear to bear a relationship with IC/ID expenditures by each Permittee.

Illicit Connections: As designed in the model program, Permittees with storm drain systems under their management rely upon field screening, during regularly scheduled maintenance of the storm drain system, to locate illicit connections. However, most Permittees cannot estimate the length of the storm drain system that was field-screened; nor did the Regional Board require reporting such information.

For the 1999/00 annual reporting period, very few Permittees reported illicit connections. The attached tables show that the numbers of illicit connections varied widely among Permittees, with about half reporting no illicit connections, and with the County reporting 877 suspected illicit connections. Part of the reason for this range is that the County is responsible for maintaining over half³⁵ of the storm drain system. Also, several Permittees believe that few – if any – illicit connections have been identified in many cities because: (a) many cities are primarily residential, and illicit connections are unlikely to occur from residential land use; and (b) cities in the County of Los Angeles are relatively new vis a vis their eastern counterparts, and adequate controls were in place at the time storm drain connections were installed.

³⁵ The exact length of storm drain systems operated by most cities is unknown.

Table 1: Illicit Connections 1999/00 County, Ballona Creek, and Urban Santa Monica Bay Watershed Management Areas					
Permittee	Number of Illicit Connections:				
	Investigated	Exempt	Discharges Terminated	Removed	Other
County of Los Angeles	877	124	0	336	417 ³⁶
Beverly Hills	0				
Culver City	None				
El Segundo	0	0	0	0	0
Hermosa Beach	None				
Manhattan Beach	0				
Palos Verdes Estates	0	1	3	3	0
Rancho Palos Verdes	None				
Redondo Beach	0				
Rolling Hills	0	0	0	0	
Rolling Hills Estates	0				
Santa Monica	70	10	50	10	0
West Hollywood	None				
Total	947	135	53	349	417

³⁶ The County of Los Angeles reported under the "Other" category of illicit connections that 126 connections were already permitted but not properly identified and those 291 illicit connections are still under investigation.

Table 2: Illicit Connections 1999/00 Dominguez Channel and Los Angeles Harbor Watershed Management Areas					
Permittee	Number of Illicit Connections:				
	Investigated	Exempt	Discharges	Removed	Other
Carson	8	0	0	0	0
Hawthorne	None				
Inglewood	3				3 ³⁷
Lawndale	None				
Lomita	1	0	1	0	0
Torrance	0				
Total	12	0	1	0	3

Table 3: Illicit Connections 1999/00 Malibu Creek and Rural Santa Monica Bay Watershed Management Areas					
Permittee	Number of Illicit Connections:				
	Investigated	Exempt	Discharges Terminated	Removed	Other
Agoura Hills	0	0	0	0	
Calabasas	2				2
Malibu	15	0	7	0	
Total	17	0	7	0	2

³⁷ The City of Inglewood reports that 3 illicit connections are to be eliminated.

Table 4: Illicit Connections 1999/00 Los Angeles River Watershed Management Areas					
Permittee	Number of Illicit Connections:				
	Investigated	Exempt	Discharges Terminated	Removed	Other
Alhambra	0	0	0	0	0
Arcadia	0	0	0	0	0
Bell	0	N/A	N/A	N/A	N/A
Bell Garden	0	0	0	0	0
Burbank	4		3	1	
Commerce	14	8	6	0	0
Compton	8	6	2	0	0
Cudahy	0	N/A	N/A	N/A	N/A
El Monte	None				
Glendale					
Hidden Hills	0	N/A	N/A	N/A	N/A
Huntington Park	2			2	
La Canada Flintridge	0				
Los Angeles	29	7	8	11	3
Lynwood	0	0	0	0	0
Maywood	0	0			
Monrovia	0	N/A	N/A	N/A	N/A
Montebello	21	0	11	1	9
Monterey Park	2	0	0	2	0
Paramount	0				
Pasadena	None				
Rosemead	0				
San Fernando	None				
San Marino	0	N/A			
Sierra Madre	None				
Signal Hills	None				
South El Monte	None				
South Gate	2	0	1	1	
South Pasadena					
Temple City					
Vernon	1	0	0	0	1
Total	83	21	31	18	13

Permittee	Number of Illicit Connections:				
	Investigated	Exempt	Discharged Terminated	Removed	Other
Artesia	0				
Azusa	0				
Baldwin Park	None				
Bellflower	0	0	0	0	0
Bradbury	0				
Cerritos	0	0	0	0	0
Claremont	0				
Covina	0				
Diamond Bar	0				
Duarte	3	0	1	0	2
Glendora	4	0	1	0	3
Hawaiian Garden	0				
City of Industry	None				
Irwindale	9	0	9	0	0
La Habra Heights	0				
La Mirada	1	1			
La Puente	0				
La Verne	0				
Lakewood	11	5	6	0	0
Norwalk	6	0	6	0	N/A
Pico Rivera	0				
Pomona	12	10	2	0	0
San Gabriel	2	0	0	2	0
Santa Fe Spring	0	N/A	N/A	N/A	N/A
Walnut	0				
West Covina	0				
Whittier	8	3	5	2	0
Total	56	19	30	4	5

Illicit Discharges: As designed in the model program, Permittees eliminate illicit discharges by preventing spills and, for those that do occur, by responding promptly. To prevent spills, Permittees enacted ordinances prohibiting non-storm water runoff, and are implementing spill prevention guidance. To respond to discharges, Permittees implement containment and cleanup procedures, coordinate with other agencies, investigate the cause of the discharge and – when the source and responsible party is know – take enforcement action. Additionally, employee training is provided on all of the above.

As with illicit connections, the numbers of illicit discharges varies widely for the annual reporting period 1999/00. The County reported a total of 788 suspected illicit discharges. Among the Cities, results at the high end include 1,876 in the City of Los Angeles, 700 in the City of Beverly Hills, and 450 in Santa Monica. At the other end of the range, many cities reported no incidents of suspected illicit

discharges. Based on information provided to date, staff cannot account for this wide range. Audits of the Permittees' programs in the future should help clarify this.

Permittee	Number of Illicit Discharges:					
	Investigated	No Evidence	Exempt	Under Different NPDES Permit	Discontinued	Source Not Determined
County of Los Angeles	788	95	15	2	411	265
Beverly Hills	700	70 ³⁸	35 ²	35 ²	525	35 ²
Culver City	25	0	0	0	25	0
El Segundo	10	7	1	0	2	0
Hermosa Beach	10	2	0	0	8	0
Manhattan Beach	1	0	0	0	1	0
Palos Verdes Estates	6	2	1	0	3	0
Rancho Palos Verdes	6	0	0	0	6	0
Redondo Beach	31	3	0	0	25	3
Rolling Hills	0	N/A	N/A	N/A	N/A	N/A
Rolling Hills Estates	1				1	
Santa Monica	450	5	22	5	398	20
West Hollywood	9	1	0	0	8	0
Total	2037	185	74	42	1413	323

Permittee	Number of Illicit Discharges:					
	Investigated	No Evidence	Exempt	Under Different NPDES Permit	Discontinued	Source Not Determined
Agoura Hills	11	1	0	0	10	0
Calabasas	12	1			10	
Malibu	15	7	0	0	7	8
Total	38	9	0	0	27	8

³⁸ Documented as percentage.

Table 8: Illicit Discharges 1999/00 Dominguez Channel and Los Angeles Harbor Watershed Management Areas						
Permittee	Number of Illicit Discharges:					
	Investigated	No Evidence	Exempt	Under Different NPDES Permit	Discontinued	Source Not Determined
Carson	24	12	0	0	0	24
Hawthorne	10	0	1	0	9	0
Inglewood	3				3	
Lawndale	2	1	0	0	1	0
Lomita	14	0	0	0	14	0
Torrance	0					
Total	53	13	1	0	27	24

Table 9: Illicit Discharges 1999/00 Los Angeles River Watershed Management Areas						
Permittee	Number of Illicit Discharges:					
	Investigated	No Evidence	Exempt	Under Different NPDES Permit	Discontinued	Source Not Determined
Alhambra	0	0	0	0	0	0
Arcadia	11	1	0	0	10	0
Bell	0	N/A	N/A	N/A	N/A	N/A
Bell Garden	0	0	0	0	0	0
Burbank	47	2	1	0	43	1
Commerce	21	4	8	0	9	0
Compton	17	9	5	0	3	0
Cudahy	0	N/A	N/A	N/A	N/A	N/A
El Monte	50	0	0	0	48	2
Glendale	?	?	?	?	?	?
Hidden Hills	0	N/A	N/A	N/A	N/A	
Huntington Park	2				2	
La Canada Flintridge	75	15	0	0	60	0
Los Angeles	1896	227	2	5	700	962
Lynwood	0	0	0	0	0	0
Maywood	1		1			
Monrovia	0	N/A	N/A	N/A	N/A	
Montebello	13	12	11	0	0	1
Monterey Park	19	0	0	0	18	1
Paramount	0					
Pasadena	39	1	0	0	37	1
Rosemead	0					
San Fernando	12	1	0	0	11	0

San Marino	0	N/A				
Sierra Madre	3	0	0	0	3	0
Signal Hills	13	3	0	0	10	0
South El Monte	15	0	0	0	15	0
South Gate	28	3	1	0	22	2
South Pasadena						
Temple City						
Vernon	10	0	0	0	9	0
Total	2271	278	29	5	1000	970

Table 10: Illicit Discharges 1999/00 San Gabriel River Watershed Management Areas						
Permittee	Number of Illicit Discharges:					
	Investigated	No Evidence	Exempt	Under Different NPDES Permit	Discontinued	Source Not Determined
Artesia	10	4	0	0	4	2
Azusa	1				1	
Baldwin Park	27	5	0	0	20	2
Bellflower	8	8	0	0	0	0
Bradbury	0					
Cerritos	8	0	0	0	8	0
Claremont	4	1	0	0	3	
Covina	32	5	4	0	18	5
Diamond Bar	1					1
Duarte	3	3	0	0	0	3
Glendora	14	13	0	0	12	0
Hawaiian Garden	0					
City of Industry	None					
Irwindale	23	0	0	0	20	3
La Habra Heights	1			1		
La Mirada	16		3		13	
La Puente	1				1	
La Verne	1				1	
Lakewood	17	0	2	0	9	6
Norwalk	6	0	0	0	6	0
Pico Rivera	12	6	0	0	6	0
Pomona	78	18	8	10	16	26
San Gabriel	4	0	0	0	3	1
Santa Fe Spring	12	3	0	0	0	9
Walnut	2			1	1	0
West Covina	48	6	0	0	7	35
Whittier	32	12	18	15	17	3
Total	361	84	35	27	166	96

Reporting: As designed in the model program, Permittees have implemented procedures to receive reports of illicit discharge and disposal incidents, and to promptly respond and report such incidents. Most rely upon the countywide hotline system, which is maintained by the County. For hazardous substances, Permittees implement additional reporting procedures.

New IC/ID Elimination Program Requirements

The Special Provisions Section of the permit (Board Order No. 01-182) requires the Permittees to revise their IC/ID Elimination Program in the SQMP to meet the following proposed requirements in the permit:

- General requirements, among which include development (if necessary) and update of a list of permitted connections to the storm drain system, a tracking system for illicit connections and discharges, and compilation of this information in coordination with the Principal Permittee, as well as identification of priority areas for proactive screening.
- Illicit connection requirements for proactive screening of the storm drain system over a 5-year period, including:
 - Field screening of open channels and underground pipes (with a diameter of 36 inches or greater),³⁹
 - Permit screening, to ensure that all facilities with connections are effectively implementing the prohibition on non-storm water discharges;
 - Requirements to investigate and terminate illicit connections, including response times; and
- Illicit discharge requirements, specifying response times for abatement and cleanup (within one business day), and investigation (as soon as practicable).

As Permittees have pointed out, and as staff acknowledges, residential land uses are less likely to have illicit connections. However, staff remains concerned that adequate controls be in place at all times to prevent improper connections to the storm drain system. Staff's concern is based upon the wide range of illicit connections reported by Permittees with no apparent relation to land use, the poor water quality of dry weather flows in inland receiving waters, and also incidents of illicit connections reported separately or directly to the Regional Board.

³⁹ As set forth on page 3-3 and in Appendix I of the Permittees' model program, screening tools for the proactive program will include dye tests, smoke tests, and TV inspections.

E. Public Agency Activities Program

Legal Authority:

USEPA storm water regulations 40 CFR 122.26(d)(2)(iv)(A)(1,3,4,5, and 6). Each Permittee must develop a program to reduce the discharge of pollutants to and from the MS4 to the maximum extent practicable for all urban land uses and activities, including municipal areas and activities.

Background:

Many Permittees provide services that ultimately result in the enhancement of the lives of the residents. Some of these services include but are not limited to: sewage system operations; public construction activities; vehicle maintenance; material storage; street and road maintenance; landscaping; recreational facility management; parking facility management; public industrial activities; and many other activities.

Justifications for New Requirements:

NEW REQUIREMENT: In sewage system operations, each Permittee is required to implement a response plan in case of an overflow of the sewage system to the storm drain system.

JUSTIFICATION: The response plan will have different requirements dependent upon whether the Permittee owns or operates the sanitary sewer system.

NEW REQUIREMENT: All requirements in the Development Construction Program apply to public construction activities.

JUSTIFICATION: This is proposed to reduce the possibility of a public construction site from becoming a source of pollutants. A public construction site should be a model of what to do efficiently and effectively (preceding a discharge).

NEW REQUIREMENT: Each Permittee with a construction site that meets the size requirements for a GCASP must obtain coverage under the general permit for construction activity. Currently the size threshold is 5 acres but will change to 1 acre on March 10, 2003. However, a municipality of less than 100,000 people (1990 Census) need not apply for coverage for a construction activity until March 10, 2003.

JUSTIFICATION: This change is consistent with USEPA Phase II storm water regulations, and will assist in the tracking of construction sites operated by Permittees.

NEW REQUIREMENT: Each Permittee is required to ensure that public facilities are designed and constructed using construction and post-construction BMPs consistent with the Standard Urban Storm Water Mitigation Plans (SUSMPs) required in the Development Planning section of the permit.

JUSTIFICATION: This requirement ensures consistency with the planning, design, and construction requirements for private projects. Public projects will be treated the same as private projects.

NEW REQUIREMENT: For Permittee owned or operated vehicle maintenance, material storage areas, and corporation yards the Permittees will implement site specific SWPPPs to minimize pollutants in storm water discharges. Vehicle and equipment wash areas will be required to be self contained or covered, equipped with a clarifier, or other pretreatment device, and/or properly connected to the sanitary sewer. This requirement will take effect when a new facility is constructed or when an existing site is remodeled or reconstructed.

JUSTIFICATION: This requirement ensures consistency with the City of Long Beach MS4 and the Ventura County MS4 permits.

NEW REQUIREMENT: For storm drain operation and maintenance, Permittees are now required to prioritize all catch basins and clean them out according to the permit requirements (Part 4.F.5, Permit). The previous permit required catch basins to be inspected and cleaned once a year. Also, any catch basin greater than 40% full must be cleaned, and after July 1, 2003, any catch basin greater than 25% full must be cleaned. In addition to catch basin cleaning, Permittees must also implement other trash reduction measures. These measures include placing trash receptacles at all transit stops and implementing special actions to cleanup trash when hosting a special event.

Permittees subject to a trash TMDL (Los Angeles River and Ballona Creek WMAs) may continue with their current catch basin cleaning schedule until TMDL implementation measures are developed. The TMDL implementation measures may be different than permit provisions, and requiring Permittees subject to a TMDL to implement different permit requirements would be premature and result in unnecessary expenses for these Permittees. However, if TMDL implementation measures are not in place by October 2003, Permittees subject to a trash TMDL must implement all permit requirements to control trash.

At the December 13, 2001 Board Meeting, concern was raised regarding the storm drain operation and management requirements described above. At the time of the Board Meeting, the requirement did not include a clause in case TMDL implementation measures were not implemented as currently scheduled. Therefore, it was possible that Permittees in the Los Angeles River and Ballona Creek WMAs would be allowed to continue their current practices without any additional trash reduction requirements. This issue was discussed, and the Board approved inserting a phrase that required the TMDL subject Permittees to implement regular storm drain operation and management requirements in the case that the TMDL implementation phase has not begun by 2003.

NEW REQUIREMENT: For storm drain maintenance each Permittee must visually monitor their open channels for debris and identify and prioritize areas of illicit discharge for regular inspection and at least annually remove trash and

debris from the channels. Permittees must properly dispose of removed material.

NEW REQUIREMENT: The streets and roads maintenance section (Part 4.F.6, Permit) requires each Permittee to designate streets based on the volume of trash that is consistently generated. Priority A (highest) streets must be swept twice a month. Priority B (medium) streets must be swept once a month, and Priority C (lowest) streets must be swept as necessary, but no less than once a year. The basis of prioritization was left for the Permittees to establish and implement.

JUSTIFICATION: The new streets and roads maintenance requirements will allow Permittees to more efficiently use resources to target high priority areas.

NEW REQUIREMENT: Permittees, in cooperation with the Los Angeles County Sanitation District, are required to conduct a study to investigate the possible diversion of dry weather discharges or the use of alternate treatment control BMPs to treat storm water from their jurisdiction. A priority list of possible diversions must be submitted to the Regional Board Executive Officer no later than July 1, 2003. The permit does not require Permittees to implement the list. The purpose of the requirement is to have the prioritized lists available for consideration for possible funding through grants, bonds, supplemental environmental projects (SEPs), or other sources.

F. New Development And Significant Redevelopment Program

Impacts from New Development:

Treatment control BMP requirements on new development and redevelopment offer the most cost-effective strategy to reduce pollutant loads to surface waters. Retrofit of existing development will be expensive and may be considered on a targeted basis. Studies on the economic impacts of watershed protection indicate that storm water quality management has a positive or at least neutral economic effect while greatly improving the quality of surface waters.⁴⁰

USEPA storm water regulations at 40 CFR 122.26 require that pollutants in storm water be reduced to MEP. The USEPA's definition is intentionally broad to provide maximum flexibility in MS4 permitting and to give municipalities the opportunity to optimize pollutant reductions on a program-to-program basis.⁴¹ The definition of MEP has generally been applied to mean implementation of economically achievable management practices. Because storm water runoff rates can vary from storm to storm, the statistical probabilities of rainfall or runoff events become economically significant and are central to the control of pollutants through cost effective BMPs. Further, it is recommended that storm water BMPs be designed to manage both flows and water quality for best

⁴⁰ *The Economics of Watershed Protection*, T. Schueler (1999), Center for Watershed Protection, Endicott, MD. The article summarizes nationwide studies to support the statement that watershed planning and storm water management provides positive economic benefits.

⁴¹ *Storm Water Phase II Final Rule – Pre-Federal Register Version*, p 87 (USEPA 1999). See USEPA's discussion in response to challenges that the definition is sufficiently vague to be deemed adequate notice for purposes of compliance with the regulation.

performance.⁴² It is equally important that treatment control BMPs once implemented be routinely maintained.

Financing the MS4 program offers a considerable challenge for municipalities. A proven successful financing mechanism is the establishment of a storm water utility.⁴³ Utility fees, which are assessed on the property owner based on some estimate of storm water runoff generated for the site, are a predictable and dedicated source of funds. Utility fees can also provide a mechanism to provide incentives to commercial and industrial property owners to reduce impervious surface areas. Such incentives offer flexibility to property owners to choose the better economic option – paying more fees or making improvements to reduce runoff from the site.

Review of Design Standards:

The American Society of Civil Engineers (ASCE) and the Water Environment Federation (WEF) have recommended a numerical BMP design standard for storm water that is derived from a mathematical equation to maximize treatment of runoff volume for water quality based on rainfall/ runoff statistics and which is economically sound.⁴⁴ The maximized treatment volume is cut-off at the point of diminishing returns for rainfall/ runoff frequency. On the basis of this equation the maximized runoff volume for eighty-five percent treatment of annual runoff volumes in California can range from 0.08 to 0.86 inches depending on the imperviousness of the watershed area and the mean rainfall.⁴⁵

Other methods of establishing numerical BMP design standards include: (i) Percent treatment of the annual runoff; (ii) Full treatment of runoff from rainfall event equal to or less than a predetermined size; and (iii) Percent reduction in runoff based on a rainfall event of standard size.⁴⁶ These numerical design standards have been applied to Development Planning in Puget Sound, WA; Alexandria, VA; Montgomery County, MD; Denver, CO; Orlando, FL; Portland, OR; and Austin, TX.

The City of Seattle requires that where new development coverage is 750 square feet or more, storm water detention be provided based on a 25 year storm return frequency, and a peak discharge rate not to exceed 0.2 cubic feet per second.⁴⁷ Additionally, for projects that add more than 9,000 square feet in developmental coverage, the peak drainage water discharge rate is limited to 0.15 cubic feet per second per acre for a two-year storm. The City of Denver requires new residential, commercial, and industrial developments to capture and treat the 80th percentile runoff event. This capture and proper treatment is estimated to

⁴² *Urban Runoff Pollution – Summary Thoughts* – The State of Practice Today and For the 21st Century. Wat. Sci. Tech. 39(2) pp. 353-360. L.A. Roesner (1999)

⁴³ *Preliminary Data Summary of Urban Storm Water Best Management Practices* (1999), Report No. USEPA-821-R-99-012, USEPA. The document reviews municipal financing mechanisms and summarizes experience in the U.S. to date.

⁴⁴ *In Urban Runoff Quality Management, WEF Manual of Practice No. 23, ASCE Manual and Report on Engineering Practice No. 87*. WEF, Alexandria, VA; ASCE, Reston, VA. 259 pp. (1998).

⁴⁵ *Sizing and Design Criteria for Storm Water Treatment Controls, Presentation to California Storm Water Quality Task Force*, November 13, 1998, Sacramento, CA. L.A. Roesner, Camp Dresser McKee.

⁴⁶ *Sizing and Design Criteria for Storm water Quality Infrastructure, Presentation at California Regional Water Quality Control Board Workshop on Standard Urban Storm Water Mitigation Plans*, August 10, 1999, Alhambra, CA., R.A. Brashear, Camp Dresser McKee.

⁴⁷ *City of Seattle Municipal Code, Chapter 22.802.015* – Storm water, drainage and erosion control requirements.

remove 80 to 90 percent of the annual TSS load which is a surrogate measure for heavy metal and petroleum hydrocarbon pollutants.⁴⁸

Some States have established numerical standards for sizing storm water post-construction BMPs for new development and significant redevelopment. The State of Maryland has established storm water numerical criteria for water quality of 0.9 to 1 inch, and BMP design standards in a unified approach combining water quality, stream erosion potential reduction, groundwater recharge, and flood control objectives.⁴⁹ The State of Florida has used numerical criteria to require treatment of storm water from new development since 1982, including BMPs sized for 80 percent reduction (95 percent for impaired waters) in annual TSS loads derived from the 90 percent (or greater for impaired waters) annual runoff treatment volume method for water quality.⁵⁰ The State of Washington has proposed at least six different approaches of establishing storm water numerical mitigation criteria for new development, which add 10,000 square feet of impervious surface or more for residential development, and 5,000 square feet of impervious surface or more for other types of development.⁵¹ Other mitigation criteria options include the 90th percentile 24-hour rainfall event (used by the State of Maryland) and the six month 24 hour rainfall event (used by the State of Washington).

On a national level, the USEPA is planning to standardize minimum BMP design and performance criteria for post-construction BMPs, and will likely build from the experience of effective state and local programs to establish national criteria.⁵² The USEPA, based on the NURP, supports the first half-inch of rainfall as generating first flush runoff.⁵³ First flush runoff is associated with the highest pollutant concentrations, and not pollutant load. The USEPA considers the first flush treatment method, the rainfall volume method, and the runoff capture volume method as common approaches for sizing of water quality BMPs.

Background:

On April 22, 1999, the Regional Board approved a List of BMPs for MS4 Permittees to select from and required implementation of the most effective BMPs in their Development Planning and Development Construction programs.⁵⁴

The Final SUSMP was issued on March 8, 2000. It established new development and significant redevelopment conditions for all projects in the following categories:

⁴⁸ *Urban Storm Drainage, Criteria Manual – Volume 3, Best Management Practices, Urban Drainage and Flood Control District, Denver, CO* (1999). Manual provides detail design criteria for new development for the Denver Metropolitan area.

⁴⁹ *Maryland Storm Water Design Manual* - (Maryland Department of the Environment 2000).

⁵⁰ *Florida Development Manual: A Guide to Sound Land and Water Management* (Florida Department of Environmental Protection 1992). The manual describes structural and non-structural construction and post construction BMPs design criteria.

⁵¹ *Storm Water Management in Washington State Volumes 1 – 5*. (Washington Department of Ecology 2001). The volumes 1,3 and 5 are most relevant to new development standards and cover Hydrologic and Flow Control Designs, Minimum Technical Requirements and Treatment BMPs. The volumes were adopted as statewide standards in late 2001.

⁵² *Storm Water Phase II Final Rule* – 64 Fed. Reg. 68759. See USEPA's discussion on construction and post-construction BMP requirements for Phase II.

⁵³ *A Watershed Approach to Urban Runoff: Handbook for Decisionmakers*, Terrene Institute and USEPA Region 5 (1996). See discussion on sizing rules for water quality purposes, p 36.

⁵⁴ (Board Resolution No. 99-03).

- 10 or more home subdivision;
- 100,000+ square-foot commercial development;
- Automotive repair facilities;
- Retail Gasoline Outlets;
- Restaurants;
- Parking lots more than 5,000 square feet or more than 25 parking spaces
- Hillside located single-family dwelling,
- Construction projects adjacent to, in, or discharging directly to Environmentally Sensitive Areas

The SUSMP included numerical design criteria for structural and treatment control BMPs. These criteria are:

Mitigate (infiltrate or treat) storm water runoff from either:

- a) the 85th percentile 24-hour runoff event, determined as the maximized capture storm water volume for the area from the formula recommended by the WEF and ASCE study⁵⁵;
- b) the annual runoff volume, based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in the BMP Handbook;⁵⁶
- c) the volume of runoff produced from each and every storm event up to and including 0.75 inch of rainfall, prior to its discharge to a storm water conveyance system; or

⁵⁵ *In Urban Runoff Quality Management, WEF Manual of Practice No. 23, ASCE Manual and Report on Engineering Practice No. 87.* WEF, Alexandria, VA; ASCE, Reston, VA. (1998).

⁵⁶ *California Storm water Best Management Practices Handbook – Industrial/ Commercial,* (1993)

- d) the volume of runoff produced from each and every storm event up to and including a historical-record based reference 24-hour rainfall criterion for “treatment” (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event; and/or
- e) the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or
- f) the flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County; or
- g) the flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

The State Board issued a precedential decision⁵⁷ on the matter in Order WQ 2000-11, largely sustaining the SUSMP as approved by the Regional Board. The State Board amended the SUSMP to limit its application to discretionary projects as defined by CEQA, eliminated the category for projects in environmentally sensitive areas, and set aside the requirement for retail gasoline outlets to treat storm water until a threshold is developed in the future. In addition, the State Board articulated its support for regional solutions and the mitigation banking.

The new permit amends the SUSMP requirements to clarify implementation, make it consistent with recent Regional Board actions, and where appropriate correct procedural and other deficiencies identified by the State Board in its SUSMP ruling. The proposed changes include:

- SUSMPs for hillside developments that are 1 acre or more. Hillside residential homes below the threshold would be required to incorporate BMPs to facilitate drainage and pollutant removal but would not be subject to the numerical mitigation criteria. Currently, all hillside developments regardless of size are subject to the numerical mitigation criteria. This change normalizes post-construction controls for home developments irrespective of location.
- Numerical design criteria retail gasoline stations, where they meet both thresholds, (i) projected average daily traffic of 100 cars or more; and (ii) 5,000 square feet or more of surface area.
- Clarify that the 100,000 square feet commercial development includes heavy industrial development. The category is designated 'industrial/commercial'.

⁵⁷ *State Water Board Order WQ 2000-11*: SUSMP; Memorandum from Chief Counsel to Regional Board Executive Officers, (December 26, 2000) discusses statewide policy implications of the decision.

- Lower the industrial/commercial category threshold from 100,000 square feet to 1-acre (43,560 square feet) beginning March 9, 2003, to be consistent with the USEPA Phase 2 storm water regulations for small construction projects.
- SUSMP requirements apply to all developments, both ministerial and discretionary. As presently implemented the SUSMP requirements apply to only discretionary projects as defined under CEQA.
- SUSMP requirements apply to projects situated in, adjacent to, or discharging directly to environmentally sensitive areas where the development (a) creates 2,500 square feet or more of impervious area, and (b) discharge storm water and urban runoff that is likely to impact a sensitive biological species or habitat.
- Redevelopment clarification.

Technical papers that provide more detail have been prepared and are included in the Administrative record.

VI. MONITORING PROGRAM

Background:

Using data collected from a monitoring program, storm water management efforts can be prioritized, helping limited resources be most effective in improving receiving water quality. For example, a monitoring program can provide data that can allow for specific receiving waters and watersheds to be targeted for urban runoff management and education efforts based on their need. Particular pollutants and their sources can also be identified and targeted using monitoring data. In addition, monitoring data can be useful in assessing the effectiveness of an urban runoff management program. Successful efforts that have resulted in receiving water quality improvements can be analyzed for use elsewhere, while areas that need follow-up efforts can also be identified. In general, a comprehensive monitoring program can supply a wealth of data that can be used in a wide range of applications for improving water quality.

Storm Water Monitoring History:

In the 1994-95 storm season, the Los Angeles County Department of Public Works began monitoring storm water quality in Los Angeles County. The first two years of monitoring were conducted pursuant to the 1990 permit. Over the past five years, the Los Angeles County storm water monitoring program consisted of four main components: mass emission monitoring, land use monitoring, critical source monitoring, and a Santa Monica Bay receiving water study. The results of each objective are summarized below.

- **Mass Emission Monitoring**

Mass emissions were monitored for four major watersheds: Ballona Creek, Malibu Creek, Los Angeles River, and San Gabriel River. The County also monitored mass

emissions from Coyote Creek, although it was not a requirement of Order 96-045. The mass emission monitoring identified the Los Angeles River as consistently contributing the most zinc, copper, and suspended solids⁵⁸. Sixteen chemical constituents of concern were identified from the comparison of mass emission annual concentrations to the objectives of the Ocean Plan, Basin Plan, and the CTR (several other constituents of concern were identified through research)¹. The mass emission monitoring was also successful at identifying toxic levels of zinc and copper from Ballona Creek discharge, toxicity in the Los Angeles and San Gabriel Rivers, and the extent of severity of bacterial indicators in both dry and wet weather.

- **Land Use Monitoring**

The County selected eight land use types to be monitored to identify sources of pollutants in storm water monitoring. These land uses include retail/commercial, vacant, high-density single family residential, transportation, light industrial, education, multifamily residential, and mixed residential. The land use monitoring identified light industrial, transportation, and retail/commercial land uses as producing the highest median concentrations for total and dissolved zinc¹. Light industrial and transportation displayed the highest median concentrations for total and dissolved copper, and light industrial produced the highest concentrations of suspended solids. The majority of the Land Use monitoring requirement was completed, however, Event Mean Concentrations (EMCs) for several constituents (many due to the lowering of method detection limits) were not achieved. Pesticide, nutrient, and PAHs are among the constituents that do not have EMCs for most land uses.

- **Critical Source Monitoring**

Five critical sources, including industrial and commercial facilities, were monitored to evaluate the effectiveness of voluntary good housekeeping and preventative BMPs. The critical sources included in the study were motor freight, auto dealers, chemical manufacturing, machinery manufacturing, and rubber/plastics. The critical source monitoring program identified fabricated metal businesses as producing the highest median concentrations for zinc, copper, and suspended solids⁵⁹. The inability to require or control the implementation of BMPs made this study somewhat ineffective at evaluating BMP effectiveness. In most cases, there was no significant difference in pollutant levels from critical sources with and without BMPs. However, levels of total and dissolved copper at the fabricated metal industry were significantly reduced with the implementation of BMPs¹.

- **Receiving Water Study**

A three-year study was conducted to assess the impacts of urban storm water runoff, specifically ecosystem health, on the receiving waters of the Santa Monica Bay. The study examined plume characteristics, water column and seafloor biology. Ballona and Malibu Creek were compared to evaluate the effects of different watershed types. The study discerned the presence of well-developed plumes

⁵⁸ Los Angeles County 1994-2000 Integrated Receiving Water impacts Report, Los Angeles County Department of Public Works

⁵⁹ *Ibid.*

containing toxic materials, identified zinc and copper as contaminants in Ballona Creek, and concluded that sediments offshore of Ballona Creek generally had higher concentrations of urban contaminants. These findings demonstrate the need for further studies and for the identification of sources of toxic pollutants.

New Storm Water Monitoring Program:

The objectives of the Storm Water Monitoring Program include, but are not limited to: 1) assessing compliance with the MS4 permit; 2) measuring and improving the effectiveness of the SQMP; 3) assessing the chemical, physical, and biological impacts of receiving waters resulting from urban runoff; 4) characterization of storm water discharges; 5) identifying sources of pollutants; and 6) assessing the overall health and evaluating long-term trends in receiving water quality.

Mass Emissions Monitoring

Seven mass emissions stations will be monitored. Monitoring at the five existing stations will continue, and new stations were required in Dominguez Channel, and the Santa Clara River.

The Dominguez Channel watershed contains the highest percentage of impervious area. Studies reveal that the level of imperviousness in an area strongly correlates with the quality of the nearby receiving waters.⁶⁰ Also, the Dominguez Channel Watershed is a highly industrialized area and the storm water runoff needs to be characterized to determine its contribution of pollutants in the San Pedro Bay.

A new mass emission station in the Santa Clara watershed is also required. The purpose of this station is to characterize mass emissions from Los Angeles County and to monitor the impacts from new development. Therefore, the station should be located as close to the Ventura County line as practicable. The Santa Clara is currently the most natural and least impacted watershed in the County. However, it is rapidly urbanizing and contains a significant amount of proposed development. Several factors, including the natural state of the river and the lack of accessibility, have made it difficult to select a location for a sampling station. However, Regional Board and Los Angeles County DPW staff conducted a field investigation of the watershed that revealed a couple of potential monitoring locations. Prior to the next rainy season, the County will determine the location that is most feasible for them.

Method Detection Limits

The Minimum Levels (MLs) listed in Appendix 4 of the State Board Policy for Implementation of Toxics Standards for Inland Surface Water, Enclosed bays, and Estuaries of California, 2000 (SIP) represent the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences.⁶¹ These MLs must be incorporated into all water quality monitoring programs to detect priority toxic pollutants. The MLs are the only established criteria that take into consideration recent improvements in chemical analytical methods. If they are not used in the storm water program, concentrations of

⁶⁰ 64 Fed. Reg. 68725

⁶¹ SIP

concern of priority toxic pollutants may not be detected, which has occurred throughout the history of the Los Angeles County storm water monitoring program. Detection and control of toxic pollutants in surface waters is necessary to achieve the CWA's goals and objectives.⁶² Numeric criteria for toxic pollutants is necessary to evaluate the adequacy of existing and potential control measures to protect aquatic ecosystems and human health.⁶³ Also, using MLs will provide quantifiable data that is necessary to better assess water quality and to develop Waste Load Allocations and Load Allocations for TMDLs. Furthermore, non-detects cannot be used to accurately determine mass loadings. The criteria established in the CTR are legally applicable in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and programs under the CWA.⁶⁴ Section 402(p)(3)(B)(iii) gives USEPA and states the authority to incorporate appropriate water quality-based effluent limitations in NPDES permits for discharges from MS4s.⁶⁵ The MLs have been incorporated in Attachment U-1 of the Monitoring and Reporting Program.

TSS Monitoring

Every storm greater than .25 inch shall be sampled and analyzed for TSS. The purpose of this requirement is to consider the high variability of storm water discharges and determine more accurate average mass emission values. The high variability of storm water makes it unlikely to characterize a storm season based on a few mass emission samples. Studies show that the median event mean concentration for storm water programs that do not sample every storm is consistently biased low, relative to the annual flow-weighted mean⁶⁶. To adequately characterize a storm and capture central tendencies, many storms would need to be sampled. However, this is cost-prohibitive. Therefore, the correlation between TSS and trace metals should be used. Studies have indicated that runoff contaminants tend to be highly correlated with suspended solids in large rivers and creeks throughout southern California⁶⁷. TSS measurements are one-tenth the cost of trace metal analyses. However, TSS concentrations accounted for up to 95% of the variability in some trace metal concentrations in a study of the Santa Ana River (urbanized watershed in Orange County) conducted by the Southern California Coastal Water Research Project (SCCWRP)².

Water Column Toxicity Monitoring

Storm water samples were found to be toxic in the Los Angeles River, the San Gabriel River, Ballona Creek, and the Santa Monica Bay, demonstrating the need for this toxicity monitoring requirement.

Toxicity testing is used to assess the impact of storm water pollutants on the overall quality of aquatic systems⁶⁸. It can be a very useful tool for storm water managers. The Center for Watershed Protection rated toxicity testing as a "very useful" indicator for assessing municipal storm water programs. Toxicity testing can also be used to evaluate the effectiveness of storm water BMPs and other storm water pollution

⁶² 65 Fed. Reg. 31683

⁶³ *Id.*

⁶⁴ 65 Fed. Reg. 31682

⁶⁵ 65 Fed. Reg. 31703

⁶⁶ Temporal variability patterns of stormwater concentrations in urban stormwater runoff. Leisl L. Tiefenthaler, Kenneth C. Schiff, and Molly Leecaster, Southern California Coastal Water Research Project (SCCWRP) annual Report 2000.

⁶⁷ SCCWRP. 1992. Surface Runoff to the Southern California Bight.

⁶⁸ Center for Watershed Protection, Environmental Indicators to Assess Stormwater Control Programs and Practices (1996).

reduction measures⁶⁹. Managers can use the results of toxicity testing to identify areas of high concern and to establish priority locations for BMPs. Furthermore, Toxicity Identification Evaluations (TIEs) and Toxicity Reduction Evaluations (TREs) can be used to identify specific pollutants and their sources so that management actions can be more specifically prioritized.

Previous toxicity testing was only conducted using the *Stronglyocentrotus purpuratus* (sea urchin) fertilization test, a marine species. Toxicity testing using multiple species is needed to provide a more complete assessment of the causes of toxicity in storm water⁷⁰. The identification of zinc and copper as contaminants of concern in previous studies in the County were based primarily on studies with the sea urchin. Reliance on single species tests may not provide an accurate assessment of toxicity⁷¹. Because different species vary in their sensitivity to contaminants, tests with multiple species are needed to determine if other contaminants are present at toxic concentrations⁷². Specifically, an organism that is sensitive to pesticides, which have been found to be important factors in the toxicity of storm water from other watersheds, should be used⁷³. USEPA recommends the use of the *Ceriodaphnia dubia* (water flea) reproduction and survival test for the measurement of receiving water toxicity. The water flea is one of the most sensitive aquatic species to diazinon, whereas the sea urchin fertilization test is insensitive to organophosphorus pesticides⁷⁴. By contrast, sea urchin sperm are approximately 10 times more sensitive to trace metals than are water fleas.

Furthermore, the toxicity component of the Monitoring Program should include toxicity identification procedures so that potential constituents of concern can be confirmed and others can be discounted. TIEs are needed to prioritize management actions.

Two wet weather and two dry weather samples will be analyzed for toxicity from each mass emission station every year. When a sample is substantially toxic to either test species, a Phase I TIE will begin immediately. Substantial toxicity means the amount of toxicity necessary to successfully conduct a Phase I TIE. For example, *Ceriodaphnia* TIEs require at least 50% mortality in undiluted sample at any time during the 7-day duration of the initial chronic bioassay.⁷⁵ If enough toxicity is not present at the beginning of a TIE, it cannot be successfully completed. The City of Long Beach Storm Water Monitoring Program has been modified to include similar TIE procedures.

Based on the results from the Long Beach Monitoring Report, the Regional Board determined that using consecutive hits of toxicity in storm water as a trigger for a TIE does not yield adequate results. For example, every single storm event sampled at the Long Beach mass emission stations was toxic to some extent to at least one of the three species tested, but only one TIE was conducted on one species.⁷⁶ Also, due to the high variability of storm water, there is no guarantee that substantial toxicity will be present after the two consecutive hits. To increase the chances of a successful TIE and to better identify all causes of toxicity in storm water, TIEs should begin immediately when substantial toxicity is detected in a sample.

⁶⁹ Ibid.

⁷⁰ Bay, Jones, Schiff. Study of the Impact of Stormwater Discharge on Santa Monica Bay (1999).

⁷¹ Center for Watershed Protection

⁷² Bay, et al.

⁷³ Bay, et al.

⁷⁴ Kinetic Laboratories, inc., City of Long Beach Storm Water Monitoring Report (2000-2001).

⁷⁵ SCCWRP

⁷⁶ City of Long Beach Storm Water Monitoring Report, 2000-2001. Kinetic Labs, Inc. and SCCWRP

Furthermore, after a toxic pollutant or class of pollutants is identified as causing at least 50% of the toxic responses in at least 3 samples at a sampling location, Toxicity Reduction Evaluations (TRE) will be conducted. If a Phase I TIE only identifies a broad category of toxicants (i.e., nonpolar organics), additional TIE analysis, to the extent possible, will be conducted until the source of toxicity is identified. The purpose of this requirement is to evaluate the extent and causes of toxicity in inland and coastal receiving waters, and to eliminate or reduce the sources of toxicity in storm water.

TRE development and implementation is directly tied to the SQMP, to ensure that management actions are taken when problems are identified. The Principal Permittee expressed concern to Regional Board staff that the TRE requirement could potentially be too involved and costly to be completed with the available funds and resources during the course of the Order. To address this concern, the Regional Board clarified the TRE language. It was decided that a third party should be involved in the source analysis and BMP recommendations, and that each Permittee shall be responsible for the implementation of BMPs in their areas of jurisdiction that are causing or contributing to toxicity. The Principal Permittee is responsible for retaining a neutral third party to evaluate possible sources of toxicity and recommend appropriate BMPs, based on available information. Regional Board staff agreed with the Principal Permittee's proposed funding limit for TRE development, to ensure that the majority of the monitoring budget is not used for TRE purposes.

In addition to the funding limit, the Principal Permittee is also encouraged to coordinate TREs with concurrent TMDLs where overlap exists. If a TMDL is being developed or implemented for an identified toxic pollutant, much of the work necessary to meet the objectives of a TRE may already be underway, and information and implementation measures should be shared.

Overall, the toxicity monitoring program will assess the impact of storm water on the overall quality of aquatic systems and implement measures to ensure that those impacts are eliminated or reduced. Chemical monitoring does not necessarily reveal the impacts of storm water on aquatic life or beneficial uses of water bodies. Therefore, toxicity monitoring is a necessary component of a storm water monitoring program.

Tributary/Source Identification Monitoring

Based on the results of previous storm water quality monitoring and toxicity testing, there is a need to monitor subwatersheds to determine pollutant sources and prioritize management actions. Exceedances of various pollutants, including toxic levels of zinc and copper in the Ballona Watershed, have been occurring at the mass emission stations for many years, but there has not yet been an effort to monitor tributaries to determine where the pollutants are actually coming from.⁷⁷ Regional Board staff worked with Los Angeles County staff, and other interested stakeholders, to design a tributary monitoring program.

⁷⁷ Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, July 31, 2000. LA County DPW, SCCWRP, Woodward Clyde.

Shoreline Monitoring

The City of Los Angeles has conducted shoreline and nearshore water quality monitoring off the Santa Monica Bay since the 1950s under the monitoring program for the Hyperion Waste Water Treatment Plant (NPDES No. CA0109991). The monitoring results indicate that effluent from Hyperion's 5-Mile Outfall does not impinge the shoreline, and that elevated bacterial counts are associated with runoff from storm drains and discharges from piers. In 1994, the Regional Board approved the relocation of Hyperion's shoreline stations to implement a bay-wide, regional shoreline monitoring program associated with storm drain outfalls in the Santa Monica Bay. The City of Los Angeles requested that the shoreline monitoring requirement be incorporated in this Order. Regional Board staff and the County of Los Angeles determined that the shoreline monitoring is an appropriate requirement for the storm water monitoring program, per the conditions listed in Section D of the Monitoring Program.

Trash Monitoring

Trash is a pollutant that impacts storm water runoff, and a trash monitoring program should be included in the MS4 permit. The permit requirement is consistent with the monitoring language in the trash TMDL for the Los Angeles River watershed⁷⁸. The Regional Board Executive Officer issued a CWC § 13267 Request for Trash Monitoring letter, dated December 21, 2001, which required this monitoring. The Regional Board does not intend to require two separate monitoring programs through the MS4 permit and the TMDL. The letter is referenced in the trash monitoring requirement to clarify that monitoring conducted pursuant to the TMDL is sufficient for the permit requirement.

Regional Monitoring

Regional Monitoring efforts address public health concerns, monitor trends in natural resources and nearshore habitats, and assess regional impacts from all pollutant sources. Los Angeles County is a major discharger in this region and should participate in regional programs. Also, participation in Regional Monitoring, such as the SCCWRP Bight-wide study in 2003, can accomplish several goals of the Monitoring Program.

Estuary Sampling

The main goal of the estuary sampling is to determine the spatial extent of sediment fate from storm water, and the magnitude of its effects. Previous studies indicate that contaminated sediments can be linked to suspended solids in storm water⁷⁹. From the information this sampling effort generates, a map of each estuary that depicts the impacted areas will be produced. Such a map will be used to direct future monitoring efforts. Once the impacted areas are identified, regular monitoring can be conducted to determine trends and accumulation of sediment from storm water. The specific sampling requirements are consistent with the Hyperion Waste Water Treatment Plant NPDES permit. This sampling program is also consistent with the objectives of the SCCWRP Bight-wide 2003 study. The results will be incorporated into a larger study of the entire coast of Southern California, from Santa Barbara to the boarder of Mexico.

⁷⁸ Trash Total Maximum Daily Loads for the Los Angeles River Watershed, June 18, 2001, Regional Board

⁷⁹ Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, Los Angeles County Department of Public Works, Contaminated Sediments and Total Suspended Solids (Section 4.2.4)

This will provide a comparison of the storm water impacts from Los Angeles County to other larger MS4s, as well as individual dischargers.

Bioassessment

Bioassessment data can be an important indicator of stream health and storm water impacts. It can detect impacts that chemical and physical monitoring cannot. In the Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems, EPA encourages permitting authorities to consider requiring biological monitoring methods to fully characterize the nature and extent of storm water problems. Therefore, this Regional Board and other Regional Boards commonly require bioassessment monitoring in storm water and point source NPDES permits.

However, the fact that a biological index does not yet exist for this region is an issue that Regional Board staff took into consideration for this requirement. Without a biological index, including reference conditions and knowledge of background variability, data cannot be fully analyzed to accurately indicate stream health or impacts. However, it can be used to determine trends in the biological community, and it is necessary for index development. Also, bioassessment data can be analyzed in the future, after an index is developed.

Considering the importance of bioassessment and the need for an index, the Principal Permittee is required to develop a bioassessment program as part of a regional effort (Southern California Stormwater Research/Monitoring Program) and to coordinate with the Surface Water Ambient Monitoring Program (SWAMP), organized by the Regional Board. This is to ensure that the most useful data is collected for the purposes of detecting biological trends in receiving waters and for developing a biological index.

New Development Impact Study in the Santa Clara Watershed

The Santa Clara River is the largest river system in southern California that remains in a relatively natural state. For much of its length, it is a high quality natural resource⁸⁰. There is also a great amount of current and future development in the watershed. Therefore, it is important to monitor this watershed to detect water quality impacts from new development and implement measures to prevent degradation from occurring. To accomplish this, a special study is appropriate.

The special study will consist of monitoring tributaries in the Santa Clara watershed to accomplish two goals. The first is to determine impacts from new development. The second is to assess the effectiveness of SUSMPs by comparing storm water quality between subwatersheds with and without post-construction storm water BMPs. Two tributary stations will be selected and monitored for this study. One will be chosen that is representative of a subwatershed in which the majority of development has occurred without SUSMP implementation. The second station will be representative of a subwatershed in which the majority of development has/will include SUSMP implementation.

The City of Santa Clarita will cooperate with the County to conduct the New Development Impact Study (as well as the Peak Discharge Study, if they are combined). The City has proposed to contribute a maximum of \$100,000 over the course of the New

⁸⁰ Watershed Management Initiative Chapter, January 2000. California Regional Water Quality Control Board, Los Angeles Region

Development Impact Study. The City also has 2 field staff that may be available for sampling and other field measurements during normal working hours. The City is also interested in participating in site selection and study design.

Peak Discharge Impact Study

The Development Planning section (Part 4.C.2) of the permit requires that the Principal Permittee determine numeric criteria to prevent or minimize erosion of natural stream channels and banks caused by urbanization. The purpose of the Peak Discharge Impact Study is to help meet that requirement and to study the extent of physical impacts to Natural Drainage Systems from storm water discharges. The Ventura County MS4 permit contains a similar requirement. The Ventura County Flood Control District has designed a study that can possibly be extended to a watershed in Los Angeles County.

Since this study and the New Development Impact Study are both related to monitoring impacts from developed areas, selected sites may be similar. It may be possible to meet the requirements of both studies by studying the chemical characteristics of storm water runoff from a site, and the physical characteristics in the water body downstream of the same site before and after rain events.

BMP Effectiveness Study

The BMP Effectiveness Study is an integral part of the storm water monitoring program. It is necessary to document the effectiveness of treatment control BMPs so that the storm water management agency can make informed decisions on the use of BMPs.

VII. FINAL QUESTIONS AND CHANGES

After the staff presentation and public hearing at the December 13, 2001 Board Meeting, a few questions and issues remained. Prior to adoption, Board Members asked staff and the public to discuss these issues. The main questions were in regards to due process and noticing, the Receiving Water Limitations language, and the storm drain operation and management requirements. The issues and their outcomes are described below.

First, many interested parties expressed a concern that additional time was needed to review and comment on the change sheets. The change sheets contained detailed descriptions of minor changes that were proposed after the issuance of the third draft on October 11, 2001. Almost all of these changes were made at the request of Permittees for clarification. Questions regarding due process and notice procedures for these changes were asked of staff attorney Michael Lauffer. Lauffer Esq. responded by saying that particular attention had been paid to this issue. Prior to the Board Meeting, staff counsel analyzed whether or not any of the changes contained in the change sheets were significant enough to trigger concerns with respect to due process and permit re-noticing. He concluded that the changes were all insignificant and represented logical outgrowths of what the Regional Board had already noticed.⁸¹

⁸¹ Reporter's Transcript of Proceedings from the December 13, 2001 Regional Board Meeting, Item 10. Pages 155-59.

In regards to Version A/C of the Industrial/Commercial Facilities Program, staff counsel concluded that it was not a significant change, since it is a combination of Versions A and C, which had already been public noticed. Lauffer stated that none of the changes triggered a requirement to re-notice the proposed permit.⁸²

Next, the Receiving Water Limitations (Part 2, Permit) and lack of a "safe harbor" clause were raised as issues during the public hearing. Some Permittees and other interested parties expressed concern that under the new permit municipalities will be in immediate violation due to exceedances of water quality standards which may occur during storm events. Counsel Lauffer referenced the State Board's precedential decision on the San Diego County MS4 permit petition and the State Board's rationale for not including some of the language requested by municipalities.⁸³ He explained that the Receiving Water Limitations language affirms that an iterative process is the preferred approach. Including specific protection for Permittees above and beyond what the iterative process provides may hinder the Regional Board's enforcement ability in cases where Permittees do not fully implement their SQMPs or appropriate BMPs and exceedances persist.⁸⁴ Overall, staff counsel concluded that the existing Receiving Water Limitation language is consistent with the State Board Order WQ 2001-15, and is a necessary component of MS4 permits.

The last issue that was discussed in detail at the Board Meeting was the storm drain operation and management requirements. The concern was raised that Permittees subject to a trash TMDL would not be required to implement any additional trash reduction BMPs, as all other Permittees are, if the trash TMDL implementation phase is delayed or held up in litigation. This issue is described in Section V.E. of this report. In summary, the Board approved inserting a phrase that required TMDL subject Permittees to implement the regular storm drain operation and management requirements in case TMDL implementation has not begun by October 2003.

⁸² *Id.*

⁸³ State Board Order WQ 2001-15

⁸⁴ *Id.* Page 164