California Regional Water Quality Control Board
Santa Ana Region
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FACT SHEET

September 26, 2001

ITEM: **14**

SUBJECT: **Waste Discharge Requirements for the County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County within the Santa Ana Region, Urban Storm Water Runoff Management Program, Orange County, Order No. 01-20 (NPDES No. CAS 618030)**

I. INTRODUCTION

The 1972 Clean Water Act (CWA) established the National Pollutant Discharge Elimination System (NPDES) permit program to regulate the discharge of pollutants from point sources to waters of the United States (U.S.). Since then, considerable strides have been made in reducing conventional forms of pollution, such as from sewage treatment plants and industrial facilities, through the implementation of the NPDES program and other federal, state and local programs. The adverse effects of some of the persistent toxic pollutants (DDT, PCB, TBT) were addressed through manufacturing and use restrictions and through cleanup of contaminated sites. On the other hand, pollution from land runoff (including atmospheric deposition, urban, suburban and agricultural) was largely unabated until the 1987 CWA amendments. As a result, diffuse sources, including urban storm water runoff, now contribute a larger portion of many kinds of pollutants than the more thoroughly regulated sewage treatment plants and industrial facilities. The National Urban Runoff Program (NURP) final report to the Congress (U.S. EPA, 1983) concluded that the goals of the CWA could not be achieved without addressing urban runoff discharges. The 1987 CWA amendments established a framework for regulating urban storm water runoff. Pursuant to these amendments, the Santa Ana Regional Water Quality Control Board (Regional Board) began regulating municipal storm water runoff in 1990.

The attached pages contain information concerning an application for renewal of Waste Discharge Requirements and a NPDES permit, which prescribe waste discharge requirements for urban storm water runoff from the cities and unincorporated areas in Orange County within the jurisdiction of the Santa Ana Regional Board. On September 1, 2000, the County of Orange and the Orange County Flood Control District (OCFCD), in cooperation with the cities of Anaheim, Brea, Buena Park, Costa Mesa, Cypress, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, Laguna Woods, La Habra, La Palma, Lake Forest, Los Alamitos, Newport Beach, Orange, Placentia, Santa Ana, Seal Beach, Stanton, Tustin, Villa Park, Westminster, and Yorba Linda (hereinafter collectively referred to as permittees or dischargers), submitted NPDES Application No. CAS 618030 (Report of Waste Discharge) for reissuance of their areawide storm water NPDES permit. The permit application was submitted in accordance with the requirements of the previous NPDES permit (Order No. 96-31, NPDES No. CAS618030) which expired on March 1, 2001. Additionally, the permit application follows guidance provided by staff of the State Water Resources Control Board (State Board), the Regional Water Quality Control Boards (Regional Boards), and the United States Environmental Protection Agency (U.S. EPA).

On March 5, 2001, Order No. 96-31, NPDES No. CAS618030, was administratively extended in accordance with 40 CFR Part 122.6 and Title 23, Division 3, Chapter 9, §2235.4 of the California Code of Regulations.

Order No. 01-20 regulates discharges of urban storm water from the lower Santa Ana watershed to waters of the U.S., which ultimately drain into the Pacific Ocean.

II. REGULATORY BACKGROUND/CLEAN WATER ACT REQUIREMENTS

Urban runoff includes dry and wet weather flows from urbanized areas through a storm water conveyance system. As water flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas, it can intercept pollutants from these areas and transport them to waters of the US. If appropriate pollution control measures are not implemented, urban runoff may contain pathogens (bacteria, protozoa, viruses), sediment, trash, fertilizers (nutrients, mostly nitrogen and phosphorus compounds), oxygen-demanding substances (decaying matter), pesticides (DDT, Chlordane, Diazinon, Chlorpyrifos), heavy metals (cadmium, chromium, copper, lead, zinc), and petroleum products (oil & grease, PAHs, petroleum hydrocarbons). If not properly managed and controlled, urbanization can change the stream hydrology and increase pollutant loading to receiving waters. As a watershed undergoes urbanization, pervious surface area decreases, runoff volume and velocity increase, riparian and wetland habitat decrease, the frequency and severity of flooding increase, and pollutant loading increases. Most of these impacts are due to human activities that occur during and/or after urbanization. The pollutants and hydrologic changes can cause declines in aquatic resources, toxicity to marine organisms, and impact human health and the environment.

However, properly planned high-density development, with sufficient open space, can reduce urban sprawl and problems associated with sprawl. Urban in-fill development can be an element of smart growth, creating the opportunity to maintain relatively natural open space elsewhere in the area.

The U.S. EPA recognizes urban runoff as the number one source of estuarine pollution in coastal communities[1]. Recent studies[2] conducted in the Southern California area have reported a definite link between storm water runoff from urban areas and pollution in nearshore zones. A number of Orange County beaches were closed during 1999 and 2000 due to microbial contamination. One of the studies conducted to determine the source of this microbial contamination indicated that urban runoff may be one of the sources of this contamination. If not properly controlled, urban runoff could be a significant source of pollutants in waters of the U.S. Table 1 includes a list of pollutants, their sources, and some of the adverse environmental consequences mostly resulting from urbanization.

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[1] US EPA, 1999, 40CFR Parts 9, 122, 123, 124, National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule, 64FR 68727.

[2] Bay, S., Jones, B. H. and Schiff, K, 1999, Study of the Impact of Stormwater Discharge on Santa Monica Bay. Sea Grant Program, University of Southern California; and Haile, R.W., et. al., 1996, An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay.

Table 1[3]. Pollutants/Impacts of Urbanization on Waters of the U.S. (Marine Pollution)

Pollutants	Sources	Effects and Trends
Toxins (e.g., biocides, PCBs, trace metals, heavy metals)	Industrial and municipal wastewaters; runoff from farms, forests, urban areas, and landfills; erosion of contaminated soils and sediments; vessels; atmospheric deposition	Poison and cause disease and reproductive failure; fat-soluble toxins may bioconcentrate, particularly in birds and mammals, and pose human health risks. Inputs into U.S. waters have declined, but remaining inputs and contaminated sediments in urban and industrial areas pose threats to living resources.
Pesticides (e.g., DDT, diazinon, chlorpyrifos)	Urban runoff, agricultural runoff, commercial, industrial, residential, and farm use	Legacy pesticide (DDT, Chlordane, Dieldrin,..) use has been banned; still persists in the environment; some of the other pesticide uses are curtailed or restricted.
Biostimulants (organic wastes, plant nutrients)	Sewage and industrial wastes; runoff from farms and urban areas; nitrogen from combustion of fossil fuels	Organic wastes overload bottom habitats and deplete oxygen; nutrient inputs stimulate algal blooms (some harmful), which reduce water clarity, cause loss of seagrass and coral reef, and alter food chains supporting fisheries. While organic waste loadings have decreased, nutrient loadings have increased (NRC, 1993a, 2000a).
Petroleum products (oil, grease, petroleum hydrocarbons, PAHs)	Urban runoff and atmospheric deposition from land activities; shipping and tanker operations; accidental spills; coastal and offshore oil and gas production activities; natural seepage; PAHs from internal combustion engines	Petroleum hydrocarbons can affect bottom organisms and larvae; spills affect birds, mammals and nearshore marine life. While oil pollution from ships, accidental spills, and production activities has decreased, diffuse inputs from land-based activities have not (NRC, 1985).
Radioactive isotopes	Atmospheric fallout, industrial and military activities	Few known effects on marine life; bioaccumulation may pose human health risks where contamination is heavy.
Sediments	Erosion from farming, construction activities, forestry, mining, development; river diversions; coastal dredging and mining	Reduce water clarity and change bottom habitats; carry toxins and nutrients; clog fish gills and interfere with respiration in aquatic fauna. Sediment delivery by many rivers has decreased, but sedimentation poses problems in some areas; erosion from coastal development and sea-level rise is a future concern.
Plastics and other debris	Ships, fishing nets, containers, trash, urban runoff	Entangles marine life or is ingested; degrades beaches, wetlands and nearshore habitats. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors.

[3] Adapted from "Marine Pollution in the United States" prepared for the Pew Oceans Commission, 2001.

Thermal	Cooling water from power plants and industry, urban runoff from impervious	Kills some temperature-sensitive species; displaces others. Generally, less a risk to marine life than thought 20 years ago.
Noise	Vessel propulsion, sonar, seismic prospecting, low-frequency sound used in defense and research	May disturb marine mammals and other organisms that use sound for communication.
Pathogens (bacteria, protozoa, viruses)	Sewage, urban runoff, livestock, wildlife, discharges from boats and cruise ships	Pose health risks to swimmers and consumers of seafood. Sanitation has improved, but standards have been raised (NRC 1999a).
Alien species	Ships and ballast water, fishery stocking, aquarists	Displace native species, introduce new diseases; growing worldwide problem (NRC 1996).

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The Clean Water Act (CWA) prohibits the discharge of any pollutant to navigable waters from a point source unless an NPDES permit authorizes the discharge. Efforts to improve water quality under the NPDES program traditionally and primarily focused on reducing pollutants in discharges of industrial process wastewater and municipal sewage. The 1987 amendments to the CWA required municipal separate storm sewer systems (MS4s) and industrial facilities, including construction sites, to obtain NPDES permits for storm water runoff from their facilities. On November 16, 1990, the United States Environmental Protection Agency (EPA) promulgated the final Phase I storm water regulations. The storm water regulations are contained in 40 CFR Parts 122, 123 and 124.

The areawide NPDES permit for Orange County areas within the Santa Ana Regional Board's jurisdiction is being considered for renewal in accordance with Section 402 (p) of the CWA and all requirements applicable to an NPDES permit issued under the issuing authority's discretionary authority. The requirements included in this order are consistent with the CWA, the federal regulations governing urban storm water discharges, the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan), the California Water Code, and the State Board's Plans and Policies.

The Basin Plan is the basis for the Regional Board's regulatory programs. The Plan was developed and is periodically reviewed and updated in accordance with relevant federal and state law and regulation, including the Clean Water Act and the California Water Code. As required, the Basin Plan designates the beneficial uses of the waters of the Region and specifies water quality objectives intended to protect those uses. (Beneficial uses and water quality objectives, together with an antidegradation policy, comprise federal "water quality standards"). The Basin Plan also specifies an implementation plan, which includes certain discharge prohibitions. In general, the Basin Plan makes no distinctions between wet and dry weather conditions in designating beneficial uses and setting water quality objectives, i.e., the beneficial uses, and correspondingly, the water quality objectives are assumed to apply year-round. (Note: In some cases, beneficial uses for certain surface waters are designated as "I", or intermittent, in recognition of the fact that surface flows (and beneficial uses) may be present only during wet weather.) Most beneficial uses and water quality objectives were established in the 1971, 1975 and 1983 Basin Plans.

Water Code Section 13241 requires that certain factors be considered, at a minimum, when water quality objectives are established. These include economics and the need for developing housing in the Region. (The latter factor was added to the Water Code in 1987). (pull paragraph up).

During this permit development process, the permittees raised an issue regarding compliance with Section 13241 of the California Water Code with respect to water quality objectives for wet weather conditions, specifically the cost of achieving compliance during wet weather conditions and the need for developing housing within the Region and its impact on urban storm water runoff. During the next review of the Basin Plan, staff will recommend that this matter be incorporated on the triennial review list. In the meantime, the provisions of this order will result in reasonable further progress towards the attainment of the existing water quality objectives, in accordance with the discretion in the permitting authority recognized by the United States Court of Appeals for the Ninth Circuit in Defenders of Wildlife v Browner, 191 F.3d 1159, 1164 (9th Cir. 1999).

III. BENEFICIAL USES

Storm water flows that are discharged to municipal storm drain systems in Orange County are tributary to various water bodies (inland surface streams, bays and tidal prisms, ocean waters,

and lakes and reservoirs) of the state. The beneficial uses of these water bodies include municipal and domestic supply, agricultural supply, industrial service and process supply, groundwater recharge, navigation, hydropower generation, water contact recreation, non-contact water recreation, commercial and sportfishing, warm freshwater habitat, cold freshwater habitat, preservation of biological habitats of special significance, wildlife habitat, preservation of rare, threatened or endangered species, marine habitat, shellfish harvesting, spawning, reproduction and development of aquatic habitats, and estuarine habitat. The ultimate goal of this storm water management program is to protect the beneficial uses of the receiving waters.

IV. PERMITTED AREA

The permitted area is delineated by the Los Angeles County-Orange County boundary line on the northwest, the San Bernardino-Orange County boundary line on the north and northeast, the Riverside County-Orange County boundary line on the east, the Santa Ana Regional Board-San Diego Regional Board boundary line on the southeast, and the Pacific Ocean on the southwest (see Attachment A of the order). The permittees serve a population of approximately 2.8 million, occupying an area of approximately 786 square miles (including unincorporated areas and the limits of 33 cities, 25 of which are within the Santa Ana Regional Board's jurisdiction). The permittees have jurisdiction over and/or maintenance responsibility for storm water conveyance systems within Orange County. The County's systems include an estimated 400 miles of storm drain systems. A major portion of the urbanized areas of Orange County drains into water bodies within this Regional Board's jurisdiction. Storm water discharges from urbanized areas consist mainly of surface runoff from residential, commercial, and industrial developments. In addition, there are storm water discharges from agricultural land uses, including farming and animal operations. However, the CWA specifically excludes agricultural discharges from regulation under this program. Other areas of the County not addressed or which are excluded by the storm water regulations and areas not under the jurisdiction of the permittees are excluded from the area requested for coverage under this permit. This includes the following areas and activities:

- Federal lands and state properties, including, but not limited to, military bases, national forests, hospitals, schools, colleges, universities, and highways;
- Native American tribal lands; and
- Utilities and special district properties.

Discharges from the permitted area drain into the Pacific Ocean. The watershed regulated under this order is generally referred to as the Lower Santa Ana River Basin.

V. WATERSHED MANAGEMENT/LOWER SANTA ANA RIVER BASIN

To manage the water resources of the Region efficiently, it is critical to have a holistic approach. The entire storm drain system in Orange County is not controlled by a single entity; the County of Orange, the OCFCD, several cities, Caltrans, U.S. Army Corps of Engineers and a number of other entities own, operate and/or manage the storm drain systems. In addition to the cities, the County and the OCFCD, there are a number of other significant contributors of storm water runoff to these storm drain systems. These include: large institutions such as the State University facilities, schools, hospitals, etc.; federal facilities such as Department of Defense facilities; State agencies such as Caltrans; water and wastewater management agencies such as Orange County Water District, Metropolitan Water District etc.; the National Forest Service; state parks; and entertainment

centers such as Disneyland. The quality and quantity of storm water runoff into and out of Orange County also depends upon runoff from San Bernardino and Riverside County areas that are tributary to Orange County. Some of the runoff from Orange County enters systems controlled by other entities, such as the Los Angeles County Flood Control District, which is under the Los Angeles Regional Board's jurisdiction.

Some of these facilities, such as U.S. Marine Corps, Tustin and El Toro Air Stations, Disneyland and Caltrans, are already under individual permits for storm water runoff. The Los Angeles and San Diego Regional Boards have also issued areawide storm water permits for areas within their jurisdiction.

Cooperation and coordination among all the stakeholders are essential for efficient and economical management of the watershed. It is also critical to manage nonpoint sources at a level consistent with the management of urban storm water runoff in a watershed in order to prevent or remedy water quality impairment. Regional Board staff will facilitate coordination of monitoring and management programs among the various stakeholders, where necessary.

An integrated watershed management approach is consistent with the Strategic Plan and Initiatives (June 22, 1995) for the State and Regional Boards. A watershed wide approach is also necessary for implementation of the load and waste load allocations developed under the TMDL process (see Section B, below). The MS4 permittees and all the affected entities should be encouraged to participate in regional or watershed solutions instead of project-specific and fragmented solutions.

The pollutants in urban runoff originate from a multitude of sources and effective control of these pollutants requires a cooperative effort of all the stakeholders and many regulatory agencies. Every stage of urbanization should be considered in developing appropriate urban runoff pollution control methodologies. The program's success depends upon consideration of pollution control techniques during planning, construction and post-construction operations. At each stage, appropriate pollution prevention measures, source control measures, and, if necessary, treatment techniques should be considered.

1. SUB-WATERSHEDS AND MAJOR CHALLENGES

The Lower Santa Ana River Watershed can be subdivided into five tributary watersheds:

a. *The San Gabriel River Drainage Area:* Carbon Canyon Creek and Coyote Creek drain into the San Gabriel River. Only a portion of the San Gabriel River is within the Santa Ana Regional Board's jurisdiction. The River empties into the Pacific Ocean at the boundary between two Regional Boards (Regions 4 and 8). Region 4 regulates most of the discharges to the San Gabriel River.

The Los Angeles Regional Board (Region 4) listed the San Gabriel River as an impaired waterbody on the CWA Section 303(d) list of impaired waters. It is listed for ammonia, toxicity, algae, eutrophication, pH, odors, low dissolved oxygen, trash, lead, arsenic, copper, silver, mercury (tissue), coliform, DDT, PCBs, chlordane, and abnormal fish histology. A trash TMDL for the East Fork of the River was adopted by the Regional Board (Region 4) and approved by the US EPA. A nutrient TMDL is scheduled for adoption in November 2002, a coliform TMDL for May 2003, and a metals TMDL for June 2005.

b. *The Huntington Harbour and Bolsa Bay Drainage Area:* This includes Anaheim Bay, Huntington Habour, Bolsa Bay, and Bolsa Chica Ecological Reserve. A number of flood control channels discharge into this area, including Anaheim-Barber, East Garden Grove-Wintersberg, and Bolsa Chica Channel. The area historically had a number of oil production facilities and an oil-well drilling mud disposal area. There are still some production wells in the area. Certain areas of the Bolsa Chica wetlands have been impacted by the oil production and related activities in the area. The drilling mud disposal area has been cleaned up, and there is a collaborative effort of a number of state, federal, and local agencies and other entities to restore the Bolsa Chica wetlands.

   Anaheim Bay and Huntington Harbour are listed as impaired waterbodies (see Section VIII), and TMDLs will be developed to address the pollutants causing the impairment.

c. *The Santa Ana River Drainage Area:* This includes Santa Ana River Reaches 1 and 2; Santiago Creek Reaches 1, 2, 3, and 4; Silverado Creek; Black Star Creek, Talbert Channel, Talbert Marsh, and Greenville-Banning Channel. The major problem for the area is microbial contamination of the coastal zone. The initial studies conducted by the Orange County Sanitation District determined that their facilities were probably not the cause of the microbial problems in the nearshore zone. Subsequently, the Executive Officer issued a directive to the County of Orange and the cities of Santa Ana, Costa Mesa, Fountain Valley and Huntington Beach (urban storm water dischargers to this tributary area) under Section 13267 of the Water Code. This directive required the dischargers to provide a plan to identify, characterize and control sources that contributed to the microbial problems in the Huntington Beach area. The first phase of this study is complete, and the second phase is underway. The first phase of the study indicated that urban runoff, including dry weather flows, may be a contributor to this microbial problem. Some of the dry weather flows from the flood control channels are now being diverted to the sanitary sewer. However, other sources of contamination are suspected, and the second phase of the study is intended to further investigate these sources.

   The Executive Officer issued a Cleanup and Abatement Order to the City of Huntington Beach requiring the City to investigate any leaking sanitary sewers in the area and to determine if exfiltration from these sources to storm sewer systems or to ocean waters through other channels was causing or contributing to the microbial problems at Huntington State and City beaches. This investigation is also currently under way.

   The Orange County Sanitation District is investigating the impact of its ocean discharge (treated sanitary wastewater) on nearshore microbial problems at Huntington Beach.

   It is expected that a combination of requirements included in this order and the programs discussed above will address the urban runoff pollution problems in this sub-watershed.

d. *The Newport Bay Drainage Area:* Tributaries include Bonita Creek, Serrano Creek, Peters Canyon Wash, Hicks Canyon Wash, Bee Canyon Wash, Borrego Canyon Wash, Agua Chinon Wash, Laguna Canyon Wash, Rattlesnake Canyon

Wash, Sand Canyon Wash, San Diego Creek Reaches 1 and 2, San Joaquin Freshwater Marsh.

The Newport Bay watershed has a number of impaired waterbodies listed under Section 303(d) of the CWA (see Section 2, below for details). The impairments are mostly due to nutrients, sediment, pesticides, pathogens, and metals. To date, TMDLs have been developed for nutrients, sediment, and fecal coliform bacteria. These TMDLs are being implemented. Recent monitoring data indicate that the target goals for nutrients for the year 2007 are now being met.

Other TMDLs for the Newport Bay watershed are being developed by the Regional Board (for diazinon, chlorpyrifos, and selenium) and U.S. EPA (for legacy pesticides and other metals).

The Irvine Ranch Water District (IRWD), which provides sewage collection and treatment services for most areas in this watershed, has been also accepting dry weather flows from some of the storm sewer systems. Recently, IRWD proposed to construct a number of water quality treatment wetlands for treating urban storm water runoff. These treatment wetlands would be strategically located to capture and treat flows from different portions of the watershed. The IRWD is also exploring the possibility of sponsoring legislation that would authorize the District to collect storm water fees. These treatment wetlands are expected to remove sediment and nutrients from urban runoff but may be less efficient in removing pathogens and toxics (metals, pesticides, etc.). It is anticipated that a combination of other best management practices and these treatment wetlands will help to control the discharge of pollutants in urban runoff.

e. *Irvine Coast and Newport Coast Areas of Special Biological Significance (ASBSs)* The Ocean Plan has 35 designated areas of special biological significance throughout the State; two of these ASBSs are within the Santa Ana Region, Irvine Coast Areas of Special Biological Significance, Newport Coast Areas of Special Biological Significance. The ASBSs require protection of species or biological communities to the extent that alteration of natural water quality is undesirable. The Crystal Cove area, which is within the Irvine Coast ASBS, is currently experiencing increased urban runoff from new developments in the area. The Ocean Plan contains a prohibition on discharges of wastes to ASBS. Regional Board staff identified a number of dischargers potentially violating or threatening to violate this Ocean Plan discharge prohibition in the Crystal Cove area. These dischargers included The Irvine Company, California Department of Transportation, and the California Department of Parks and Recreation. On November 16, 2000, the Regional Board adopted Cease and Desist Order No. 00-87 requiring these dischargers to cease and desist from any violations of the waste discharge prohibition. All future waste discharges to the ASBS governed by the prohibition in the Ocean Plan are prohibited and a time schedule is provided in the Cease and Desist order to eliminate the existing waste discharges.

2. CWA SECTION 303(d) LIST AND TMDLs:

The 1998 water quality assessment conducted by the Regional Board identified a number of waterbodies within the Region as impaired waterbodies, under Section 303(d) of the CWA.

These are waterbodies where the designated beneficial uses are not met and/or the water quality objectives are being violated. These waterbodies were placed on the CWA Section 3030(d) list of impaired waters. The impaired waterbodies in Orange County within the Santa Ana Regional Board's jurisdiction are listed in Table 2.

Federal regulations require that a total maximum daily load (TMDL) be established for each 303(d) listed waterbody for each of the pollutants causing impairment. The TMDL is the total amount of the problem pollutant that can be discharged while water quality standards in the receiving water are attained, i.e., water quality objectives are met and the beneficial uses are protected. It is the sum of the individual wasteload allocations (WLA) for point source inputs, load allocations (LA) for non-point source inputs and natural background, with a margin of safety. The TMDLs are the basis for limitations established in waste discharge requirements. TMDLs have been developed for sediment and nutrients for San Diego Creek and Newport Bay and for fecal coliform bacteria in Newport Bay. The stakeholders in this watershed are collaborating in the development and implementation of the TMDLs. The Regional Board's Executive Officer has issued requirements for the submittal and implementation by the responsible parties of plans and schedules to address the TMDL requirements. To avoid any duplicative efforts, this permit does not include any further implementation requirements based on TMDLs. However, this permit may be reopened to include TMDL implementation, if other implementation methodologies are not effective.

Table 2. Clean Water Act Section 303(d) Listed Waterbodies

Water Body	Hydro Unit	Pollutant Stressor	Source	Priority	Size Affected	Unit	TMDL End Date
Anaheim Bay	801.110	Metals	Urban Runoff/Storm Sewers, Unknown Nonpoint Source	Medium	180	Acres	0111
		Pesticides	Unknown Nonpoint Source	Medium	180	Acres	0111
Huntington Harbour	801.110	Metals	Urban Runoff/Storm Sewers, Boatyards	Medium	150	Acres	0111
		Pathogens	Urban Runoff/ Storm Sewers	Medium	150	Acres	0111
		Pesticides	Unknown Nonpoint Source	Medium	150	Acres	0111
Newport Bay, Lower	801.110	Metals	Urban Runoff/Storm Sewers, Contaminated Sediments, Boatyards	High	700	Acres	0107
		Nutrients	Agriculture, Urban Runoff/Storm Sewers	High	700	Acres	0198
		Pathogens	Urban Runoff/Storm Sewers	High	700	Acres	0100
		Pesticides	Agriculture, Contaminated Sediments	High	700	Acres	0102

		Priority Organics	Contaminated Sediments, Unknown Nonpoint Source	High	700	Acres	0102
Upper Newport Bay Ecological Reserve	801.110	Metals	Urban Runoff/Storm Sewers	High	752	Acres	0102
		Nutrients	Agriculture, Urban Runoff/Storm Sewers, Groundwater Loadings	High	752	Acres	0198
		Pathogens	Urban Runoff/Storm Sewers	High	752	Acres	0100
		Pesticides	Agriculture, Unknown Nonpoint Source	High	752	Acres	0102
		Sedimentation/ Siltation	Agriculture, Construction/Land Development, Channel Erosion, Erosion/Siltation	High	752	Acres	0198
San Diego Creek, Reach 1	801.110	Metals	Unknown Nonpoint Source	High	6	Miles	0102
		Nutrients	Agriculture, Urban Runoff/Storm Sewer, Groundwater Loadings	High	6	Miles	0198
		Pesticides	Unknown Nonpoint Source	High	6	Miles	0102
		Sedimentation/ Siltation	Agriculture, Construction/Land Development, Channel Erosion, Erosion/Siltation	High	6	Miles	0198
San Diego Creek Reach 2	801.110	Metals	Urban Runoff/Storm Sewer	High	6	Miles	0102
		Nutrients	Agriculture, Urban Runoff/Storm Sewer, Groundwater Loadings	High	6	Miles	0198

		Sedimentation/ Siltation	Agriculture, Construction/Land Development, Channel Erosion, Erosion/Siltation	High	6	Miles	0198
		Unknown Toxicity	Unknown Nonpoint Source	High	6	Miles	0102
Santiago Creek R4	801.120	Salinity/ TDS/ Chlorides	Source Unknown	Low	2	Miles	0111
Silverado Creek	801.120	Pathogens	Unknown Nonpoint Source	Low	2	Miles	0111
		Salinity/ TDS/ Chlorides	Unknown Nonpoint Source	Low	2	Miles	0111

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VI. FIRST AND SECOND TERM PERMITS: STORM WATER POLLUTION CONTROL PROGRAMS/POLICIES

Prior to EPA's promulgation of the final storm water regulations, the counties of Orange, Riverside and San Bernardino applied for areawide NPDES permits for storm water runoff. On July 13, 1990, the Regional Board issued Order No. 90-71 to the permittees (first term permit). In 1996, the Board adopted Order No. 96-31 (second term permit). First and second term permits included the following requirements as outlined in the storm water regulations:

1. Prohibited non-storm water discharges to the MS4s, with certain exceptions.
2. Required the municipalities to develop and implement a drainage area management plan (DAMP) to reduce pollutants in urban storm water runoff to the maximum extent practicable (MEP[4]).
3. Required the discharges from the MS4s to meet water quality standards in receiving waters.
4. Required the municipalities to identify and eliminate illicit connections and illegal discharges to the MS4s.
5. Required the municipalities to establish legal authority to enforce storm water regulations.
6. Required monitoring of dry weather flows, storm flows, and receiving water quality, and required program assessment.

The following programs and policies have been implemented or are being implemented by the permittees. During the first term permit, the permittees developed a Drainage Area Management Plan (1993 DAMP) which was approved by the Executive Officer of the Regional Board on April 29, 1994. The 1993 DAMP included a number of best management practices (BMPs) and a very extensive public education program. The monitoring program for the first term permit included 89 monitoring stations within streams and flood control channels and 21 stations within the bays, estuaries and the ocean. The findings and conclusions from these monitoring stations and monitoring programs of other municipal permittees (Riverside and San Bernardino Counties and others) have been used to identify problem areas and to re-evaluate the monitoring program and the effectiveness of the BMPs. The future direction of some of these program elements will depend upon the results of the ongoing studies and a holistic approach to watershed management.

Other elements of the storm water management program included identification and elimination of illegal/illicit discharges and establishment of adequate legal authority to control pollutants in storm water discharges. The permittees have completed a survey of their storm drain systems to identify illegal/illicit connections and have adopted appropriate ordinances to establish legal authority. Some of the more specific achievements during the first and second term permits are as follows:

1. *Interagency Agreements and Coordination*: Established a program management structure through an Interagency Implementation Agreement. Participated in regional monitoring programs and focused special studies/research programs. Worked with the County Sanitation Districts, Health Care Agency, Integrated Waste Management Agency, and the Water Districts to provide a consistent urban storm water pollution control message to the public. Worked with Caltrans, other transportation agencies, the Storm Water Quality Task-

[4] Maximum Extent Practicable (MEP) means to the maximum extent possible, taking into account equitable considerations of synergistic, additive, and competing factors, including but not limited to, gravity of the problem, fiscal feasibility, public health risks, societal concerns, and social benefits.

Force, and others to further study and understand urban runoff problems and control measures.

2. *Ordinances, Plans and Policies:* Adopted a Model Water Quality Ordinance and Enforcement Consistency Guide; prepared a Water Pollution Enforcement Implementation Plan, Public Agency Activity BMP guideline, a Public Pesticide and Fertilizer Use guideline, Criteria for MS4 Inspections, and a Water Quality Monitoring Plan; and established a Technical Advisory Committee for overall program development and implementation.
3. *Program Review*: A number of existing programs were reviewed to determine their effectiveness in combating urban pollution and to recommend alternatives and or improvements, including litter control measures, street sweeping frequencies and methods, public agency activities and facilities, illegal and illicit connections to the MS4 systems, and existing monitoring programs.
4. *Public Education:* A number of steps were taken to educate the public, businesses, industries, and commercial establishments regarding their role in urban runoff pollution controls. The appropriate industrial dischargers were notified of the storm water regulatory requirements. For a number of unregulated activities, BMP guidance was developed (mobile detailing, automotive service centers, restaurants, pool maintenance). Finally, a countywide hotline was established for reporting any suspected water quality problems.
5. *Public Agency Training:* Training was provided to public agency employees on how to implement New Development Guidelines and Public Works BMPs, how to conduct investigations of reported water quality problems and how to conduct inspections of industrial facilities and public work projects. The municipal planners were trained to recognize water quality related problems in proposed developments.
6. *Related Activities:* Flood control channels were stabilized, sediment basins were constructed, and debris booms were installed; illegal connections were eliminated and illicit connections to the MS4s were documented and/or permitted.

VII. FIRST AND SECOND TERM PERMITS - WATER QUALITY IMPROVEMENTS

An accurate and quantifiable measurement of the impact of the above stated storm water management programs is difficult for a variety of reasons, such as the variability in chemical water quality data, the incremental nature of BMP implementation, lack of baseline monitoring data, and the existence of some of the programs and policies prior to initiation of formal storm water management programs. There are generally two accepted methodologies for assessing water quality improvements: (1) conventional monitoring such as chemical-specific water quality monitoring; and (2) non-conventional monitoring such as monitoring of the amount of household hazardous waste collected and disposed off at appropriate disposal sites, amount of used oil collected, debris removed by the debris boom, etc.

The water quality monitoring data collected during the first and second term permits did not indicate any discernible trends or significant changes. However, the non-conventional monitoring data indicate that other programs and policies have been very effective in keeping a significant quantity of wastes from being discharged into waters of the U.S.

During the second term permit, there was an increased focus on watershed management initiatives and coordination among the municipal permittees in Orange, Riverside and San Bernardino

Counties. These efforts resulted in a number of regional monitoring programs and other coordinated program and policy developments.

It is anticipated that with continued implementation of the revised DAMP and other requirements specified in this order, the goals and objectives of the storm water regulations will be met, including protection of the beneficial uses of all receiving waters.

VIII. FUTURE DIRECTION/2000 DAMP

The NPDES permit renewal application included an updated DAMP (2000 DAMP) that includes programs and policies the permittees are proposing to implement during the third term permit. The 2000 DAMP is the principal guidance document for urban storm water management programs in Orange County and includes the following major components:

1. Continues to provide a framework for the program management activities and plan development.
2. Continues to provide the legal authority to control discharges to the MS4s.
3. Improves current BMPs to achieve further reduction in pollutant loading to the MS4s.
4. Includes programs and policies to increase public education processes and to seek public support for urban storm water pollution prevention BMPs.
5. Increases requirements for controls on new developments and significant redevelopments.
6. Continues to ensure that construction sites implement appropriate pollution control measures.
7. Continues to ensure that industrial sites are in compliance with storm water regulations.
8. Continues to include programs and policies to eliminate illegal discharges and illicit connections to the MS4s.
9. Continues to include monitoring of urban runoff.
10. Includes provisions for any special focus studies and/or control measures.

A combination of these programs and policies and the requirements specified in this order should ensure control of pollutants in storm water runoff from facilities owned and/or controlled by the permittees.

IX. PERMIT REQUIREMENTS

The legislative history of storm water statutes (1987 CWA Amendments), U.S. EPA regulations (40CFR Parts 122, 123, and 124), and clarifications issued by the State Water Resources Control Board (State Board Orders No. WQ 91-03 and WQ 92-04) indicate that a non-traditional NPDES permitting strategy was anticipated for regulating urban storm water runoff. Due to the economic and technical infeasibility of full-scale end-of-pipe treatments and the complexity of urban storm water runoff quality and quantity, MS4 permits generally include narrative requirements for the implementation of BMPs in place of numeric effluent limits.

The requirements included in this order are meant to specify those management practices, control techniques and system design and engineering methods that will result in maximum extent practicable protection of the beneficial uses of the receiving waters. The State Board (Orders No.

WQ 98-01 and WQ 99-05) concluded that MS4s must meet the technology-based maximum extent practicable (MEP) standard and water quality standards (water quality objectives and beneficial uses). The U.S. Court of Appeals for the Ninth Circuit subsequently held that strict compliance with water quality standards in MS4 permits is at the discretion of the local permitting agency. Any requirements included in the order that are more stringent than the federal storm water regulations are in accordance with the CWA Section 402(p)(3)(iii), and the California Water Code Section 13377 and are consistent with the Regional Board's interpretation of the requisite MEP standard.

The Report of Waste Discharge (ROWD) included a discussion of the current status of Orange County's urban storm water management program and the proposed programs and policies for the next five years (third term permit). The order incorporates these documents and the performance commitments made in the ROWD.

This order recognizes the significant progress made by the permittees during the first and second term permits in implementing the storm water regulations. The permit also recognizes regional and innovative solutions to such a complex problem. For these reasons, the order is less prescriptive compared to some of the MS4 NPDES permits for urban runoff issued by other Regional Boards. However, it should achieve the same or better water quality benefits because of the programs and policies already being implemented or proposed for implementation, including regional and watershed wide solutions.

The major requirements include: (1) Discharge prohibitions; (2) Receiving water limitations; (3) Prohibition on illicit connections and illegal discharges; (4) Public and business education; (5) Adequate legal authority; (6) Programs and policies for municipal facilities and activities; (7) New development/re-development requirements; (8) Waste load allocations for nutrients, sediment, and fecal coliform bacteria; and (8) Monitoring and reporting requirements.

These programs and policies are intended to improve urban storm water quality and protect the beneficial uses of receiving waters of the region.

1. DISCHARGE PROHIBITIONS

   In accordance with CWA Section 402(p)(3)(B)(ii), this order prohibits the discharge of non-storm water to the MS4s, with a few exceptions. The specified exceptions are consistent with 40 CFR 122.26(d)(2)(iv)(B)(1). If the permittees or the Executive Officer determines that any of the exempted non-storm water discharges contain pollutants, a separate NPDES permit or coverage under the Regional Board's de Minimus permit will be required.

2. RECEIVING WATER LIMITATIONS

   Receiving water limitations are included to ensure that discharges from MS4 systems do not cause or contribute to violations of applicable water quality standards in receiving waters. The compliance strategy for receiving water limitations is consistent with the U.S. EPA and State Board guidance and recognizes the complexity of storm water management.

   This order requires the permittees to meet water quality standards in receiving waters in accordance with US EPA requirements as specified in State Board Order No. WQ 99-05. If water quality standards are not met by implementation of current BMPs, the permittees are required to re-evaluate the programs and policies and to propose additional BMPs. Compliance determination will be based on this iterative BMP implementation/compliance evaluation process.

3. ILLEGAL DISCHARGES AND ILLICIT CONNECTIONS TO MS4s

   The permittees have completed their survey of the MS4 systems and eliminated or permitted all identified illicit connections. The permittees have also established a program to address

illegal discharges and a mechanism to respond to spills and leaks and other incidents of discharges to the MS4s. The permittees are required to continue these programs to ensure that the discharges from MS4s do not become a source of pollutants in receiving waters.

4. PUBLIC AND BUSINESS EDUCATION OUTREACH PROGRAM

Public outreach is an important element of the overall urban pollution prevention program. The permittees have committed to implement a strategic and comprehensive public education program to maintain the integrity of the receiving waters and their ability to sustain beneficial uses. The principal permittee has taken the lead role in the outreach program and has targeted various groups including businesses, industry, development, utilities, environmental groups, institutions, homeowners, school children, and the general public. The permittees have developed a number of educational materials, have established a storm water pollution prevention hotline, started an advertising and educational campaign, and distribute public education materials at a number of public events. The permittees are required to continue these efforts and to expand public participation and education programs.

5. LEGAL AUTHORITY

During the first two permit cycles, each permittee adopted a number of ordinances, municipal codes, and other regulations to establish legal authority to control discharges to the MS4s and to enforce these regulations as specified in 40 CFR 122.26(d)(2)(I)(B, C, E, and F). The permittees are required to enforce these ordinances and to take enforcement actions against violators (40 CFR 122.26(d)(2)(iv)(A-D)). The enforcement activities undertaken by a majority of the permittees have consisted primarily of Notices of Violation, which act to educate the public on the environmental consequences of illegal discharges. In the case of the County, additional action has sometimes included recovery of investigation and clean-up costs from a responsible party. In the event of egregious or repeated violations, the option exists for a referral to the County District Attorney for possible prosecution. In order to eliminate unauthorized, non-storm water discharges, reduce the amount of pollutants commingling with storm water runoff and thereby protect water quality, an additional level of enforcement is required between Notices of Violation and District Attorney referrals. Therefore, by July 1, 2003, the permittees are required to establish the authority and resources to administer either civil or criminal fines and/or penalties for violations of their local water quality ordinances (and the Federal Clean Water Act). The progress in establishing this program must be fully documented in the annual reports submitted by the permittees and the number, nature and amount of fines and/or penalties levied must be reported, beginning with the 2003/2004 annual report.

6. PUBLIC FACILITIES AND ACTIVITIES

Education of municipal planning, inspection, and maintenance staff is critical to ensure that municipal facilities and activities do not cause or contribute to an exceedance of receiving water quality standards. The second term permit required the permittees to prepare an Environmental Performance Report to address public agency facilities and activities that are not regulated under the State's General Industrial Activities Storm Water Permit. It also required the permittees to report on an annual basis the actions taken to eliminate the discharge of pollutants from public agency activities and facilities. The permittees are required to inspect and maintain drainage facilities free of waste materials to control pollutants in storm water runoff flowing through these systems. This order requires the permittees to re-evaluate their facilities and activities on an annual basis to see if additional BMPs are needed to ensure water quality protection.

7. NEW DEVELOPMENT

During the second term permit, the permittees developed new development guidelines. The permittees are required to implement these guidelines. Additionally, this order requires the permittees to work towards the goal of restoring and preserving the natural hydrologic cycles in approving urban developments. To accomplish this goal, the permittees have the option of using a number of methodologies. The permittees/project proponents may propose BMPs based on a watershed approach, establish a storm water pollution prevention fund for such BMPs, or any other innovative and proven alternatives to address storm water pollution. If a set of measures, acceptable to the Executive Officer, is not developed and approved by July 1, 2003, the permittees are required to use the numeric sizing criteria specified in this order. The numeric criteria are identical to the ones used by the San Diego Regional Board in its MS4 permit for permittees within the San Diego County area (Order No. 2001-01).

8. SANITARY SEWER LINE LEAKS, SEWAGE SPILLS AND SEPTIC SYSTEM FAILURES

A number of beach closures in Orange County have been due to spills, overflows, and leaks from sanitary sewer lines. Failing septic systems and improper use of portable toilets have also been linked to microbial contamination of urban runoff. The permittees should work cooperatively with the owners of the sanitary sewer lines to determine if exfiltration from leaking sanitary sewer lines, sewage spills from blocked sewer lines and failing septic systems are causing or contributing to urban storm water pollution problems in their jurisdictions. In certain areas, the permittees may not have any control over sanitary sewer systems. In such cases, the permittees should work cooperatively with the sanitation districts for the area to develop acceptable solutions to these problems. (The fact sheet is not consistent with the permit language).

9. MONITORING REQUIREMENTS

During the first term permit and part of the second term permit, the permittees conducted extensive monitoring of the storm water flows, receiving water quality and sediment quality. These early programs focused on identifying pollutants, estimating pollutant loads, tracking compliance with water quality objectives, and identifying sources of pollutants. The Orange County monitoring program, like other monitoring programs nationwide, has established that there is a high degree of uncertainty in the quality of storm water runoff and that there are significant variations in the quality of urban runoff spatially and temporally. However, most of the monitoring programs to date have indicated that there a number of pollutants in urban storm water runoff. Only in a few cases has a definite link between pollutants in urban runoff and beneficial use impairment been established.

In 1999, the permittees re-evaluated their monitoring program and proposed a revised monitoring program. The goals of the 1999 Water Quality Monitoring Program are:

a. To determine the role of urban runoff in beneficial use impairment;

b. To collect technical information to develop an effective urban storm water management plan; and

c. To determine the effectiveness of a number of BMPs, also as an aid to the overall urban storm water management plan.

To accomplish these goals, the monitoring program focuses on three areas:

a. Areas where constituent concentrations are substantially above system-wide averages. These areas are referred to as "warm spots" and the designation is based on monitoring data from prior years.

b. Areas of Critical Aquatic Resources (sites with important aquatic resources).

c. Sub-watersheds where certain BMPs have been installed to study their effectiveness.

To accomplish these goals, it is anticipated that at least five years worth of monitoring data will be required (1999-2004).

In addition, the monitoring program will continue the Reconnaissance and Source Identification component that targets areas that are known to exhibit unusually high levels of storm water pollutants.

The permittees also participate in a number of other regional monitoring programs such as those conducted by the Southern California Coastal Water Research Project and the California Regional Marine Monitoring Program.

The permittees are encouraged to continue their participation in regional and watershed-wide monitoring programs. By June 15, 2003, the permittees are required to re-evaluate their Water Quality Monitoring Program and submit a revised plan for approval.

X. WATER QUALITY BENEFITS/COST ANALYSIS/FISCAL ANALYSIS

There are direct and indirect benefits from clean beaches, clean water, and a clean environment. It is difficult to assign a dollar value to the benefits the public derives from fishable and swimmable waters. In 1972, at the start of the NPDES program, only 1/3 of the U.S. waters was swimmable and fishable. In 2001, 2/3 of the U.S. waters meets these criteria. In the 1995, *Money* magazine survey of the "Best Places to Live", clean water and air ranked as the most important factors in choosing a place to live. Thus, environmental quality has a definite link to property values. Clean beaches and other water recreational facilities also attract tourists. It is estimated that on average, an out-of-state visitor spends approximately $100.00 per day. Huntington Beach's 8.5-mile shoreline attracts 10 million visitors a year[5]. During the summer of 1999 and 2000 when the beaches were closed to water contact recreation, the beach communities reported multi-million-dollar losses in tourist revenues.

The true magnitude of the urban runoff problem is still elusive and any reliable cost estimate for cleaning up urban runoff would be premature. For urban storm water runoff, end-of-pipe treatments are cost prohibitive and are not generally considered as a technologically feasible option. Over the last decade, the permittees have attempted to define the problem and implemented best management practices to combat the problem. The costs incurred by the permittees in implementing these programs and policies can be divided into three broad categories (the costs indicated below are for the entire Orange County storm water program):

1. Shared costs: These are costs that fund activities performed mostly by the principal permittee under the Implementation Agreement. These activities include overall storm water program coordination; intergovernmental agreements; representation at the Storm Water Quality Task Force, Regional Board/State Board meetings and other public forums; preparation and submittal of compliance reports and other reports required under the NPDES permits and Water Code Section 13267, budget and other program documentation;

[5] Los Angeles Times, May 9, 2001

coordination of consultant studies, co-permittee meetings; and training seminars. The overall costs increased from $0.81M in 1996/97 to $0.94M in 1999/00.

2. Individual Costs for DAMP Implementation: These are costs incurred by each permittee for implementing the BMPs (drainage facility inspections for illicit connections, drain inlet/catchbasin stenciling, public education, etc.) included in the DAMP. A number of programs and policies for non-point and storm water pollution controls existed prior to the urban storm water runoff NPDES program. However, the DAMP that was developed and implemented in response to the urban storm water runoff NPDES program required additional programs and policies for pollution control. These costs are attributable to DAMP implementation. These costs increased from $2.6M in 1996/97 to $6.9M in 1999/00.
3. Individual Costs of Pre-Existing Programs: These are costs incurred by each permittee for water pollution control measures that were already in existence prior to the urban storm water runoff NPDES program. These programs included recycling, litter control, street sweeping, drainage facility maintenance, and emergency spill response. The overall costs for these programs increased from $48M in 1996/97 to $79M in 1999/00.

In addition to these expenditures, volunteer programs (such as the "Beach Cleanup Day", "Pride Days", "Coastal Cleanup Day", etc.) also contributed to the urban runoff pollution control efforts.

The permittees identified the following funding sources (1999/00):

FUNDING SOURCE	*PERCENTAGE*
General Funds	66%
Gas Taxes	9%
Sewer/Storm Drain Maintenance Fee	7%
Sanitation Fees	5%
Benefit Assessment	3%
Special District Funds	1%
Other Sources	9%

XI. ANTIDEGRADATION ANALYSIS

The Regional Board has considered whether a complete antidegradation analysis, pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, is required for these storm water discharges. The Regional Board finds that the pollutant loading rates to the receiving waters will be reduced with the implementation of the requirements in this order. As a result, the quality of storm water discharges and receiving waters will be improved. Since this order will not result in a lowering of water quality, a complete antidegradation analysis is not necessary, consistent with the federal and state antidegradation requirements.

XII. PUBLIC WORKSHOP

The Regional Board recognizes the significance of Orange County's Storm Water/Urban Runoff Management Program and will conduct, participate, and/or assist with any workshop during the term of this order to promote and discuss the progress of the storm water management program. The details of the workshop will be posted on the Regional Board's website, published in local newspapers and mailed to interested parties. Persons wishing to be included in the mailing list for

any of the items related to this order may register their e-mail address and/or mailing address with the Regional Board office at the address given below.

XIII. PUBLIC HEARING

The Regional Board will hold a public hearing regarding the proposed waste discharge requirements. The public hearing is scheduled to be held on Friday, June 1, 2001 at 9:00 a.m. at the City Council Chambers, City of Loma Linda, 25541 Barton Road, Loma Linda, CA. Further information regarding the conduct and nature of the public hearing concerning these waste discharge requirements may be obtained by writing or visiting the Santa Ana Regional Board office, 3737 Main Street, Suite 500, Riverside, CA 92501-3348.

XIV. INFORMATION AND COPYING

Persons wishing further information may write to the above address or call Aaron Buck at (909) 782-4906. Copies of the application, proposed waste discharge requirements, and other documents (other than those which the Executive Officer maintains as confidential) are available at the Regional Board office for inspection and copying by appointment scheduled between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday (excluding holidays).

XV. REGISTER OF INTERESTED PERSONS

Any person interested in a particular application or group of applications may leave his/her e-mail and/or mailing address and phone number as part of the file for an application. Copies of tentative waste discharge requirements will be mailed to all interested parties.

XVI. RECOMMENDATION

Adopt Order 01-20, NPDES No. CAS 618030, as presented.

In addition to the permittees, comments were solicited from the following agencies and/or persons:

U. S. Environmental Protection Agency – Terry Oda / Eugene Bromley (W-5-1)
U.S. Army District, Los Angeles, Corps of Engineers - Permits Section
NOAA, National Marine Fisheries Service
U.S. Fish and Wildlife Service - Carlsbad
State Water Resources Control Board - Ted Cobb, Office of the Chief Counsel
State Water Resources Control Board – John Youngerman/Bruce Fujimoto, Division of Water Quality
State Department of Water Resources - Glendale
California Regional Water Quality Control Board, North Coast Region (1) – John Short
California Regional Water Quality Control Board, San Francisco Bay Region (2) – Dale Bowyer
California Regional Water Quality Control Board, Central Coast Region (3) – Jennifer Bitting
California Regional Water Quality Control Board, Los Angeles Region (4) – Wendy Phillips
California Regional Water Quality Control Board, Central Valley Region (5S) – George D. Day/Dani Berchtold

California Regional Water Quality Control Board, Central Valley Region (5R), Redding - Carole Crowe
California Regional Water Quality Control Board, Central Valley Region (5F), Fresno – Jarma Bennett
California Regional Water Quality Control Board, Lahontan Region (6SLT), South Lake Tahoe – Mary Fiore-Wagner
California Regional Water Quality Control Board, Lahontan Region (6V), Victorville – Gene Rodash
California Regional Water Quality Control Board, Colorado River Basin Region (7) – Abdi Haile/Pat Garcia
California Regional Water Quality Control Board, San Diego Region (9) – Bob Morris/Dave Gibson
State Department of Fish and Game - Long Beach
State Department of Health Services - Santa Ana
State Department of Parks and Recreation – Don Ito
Orange County Health Care Agency – Larry Honeybourne
South Coast Air Quality Management District, Diamond Bar -
Caltrans, District 12, Santa Ana – Grace Pina-Garrett
Southern Pacific Railroad
Atchison, Topeka & Santa Fe Railway Company
Seal Beach Naval Weapons Station
Seal Beach Naval Reserve Center, Los Alamitos
U. S. Marine Corps Air Station, El Toro -
National Forest Service
URS/Greiner - Bob Collacott
The Irvine Company - Sat Tamaribuchi
Building Industry Association – Tim Piasky/David Smith
Latham & Watkins – Paul Singarella
Best, Best, and Krieger – Anne Thomas
Southern California Association of Governments, Los Angeles - Tabi Hiwot

Universities and Colleges (Chancellor)
University of California, Irvine
California State University, Fullerton
Chapman College
Coastline College
Cypress College
Fullerton College
Irvine Valley College
Golden West College
Orange Coast College
Rancho Santiago College

School Districts (Superintendent)
Anaheim Elementary School District
Anaheim Union High School District
Brea-Olinda Unified School District
Buena Park Joint Union High School District
Centralia Elementary School District
Cypress Elementary School District

Fountain Valley Union High School District
Fullerton Elementary School District
Fullerton Joint Union High School District
Garden Grove Unified School District
Huntington Beach Elementary School District
Huntington Beach Union High School District
Irvine Unified Union High School District
La Habra Joint Union High School District
Los Alamitos Unified School District
Lowell Joint Union High School District
Magnolia Elementary School District
Newport-Mesa Unified School District
Ocean View Union High School District
Orange Unified School District
Placentia Unified School District
Santa Ana Unified School District
Savanna Union High School District
Tustin Unified School District
Westminster Union High School District
Yorba Linda Joint Union High School District

Hospitals (Administrator)
Anaheim General Hospital
Brea Community Hospital
Chapman General Hospital, Orange
Children's Hospital of Orange County. Orange
Coastal Communities Hospital, Santa Ana
Fairview Hospital
FHP Hospital, Fountain Valley
Fountain Valley Regional Hospital and Medical Center
Hoag Hospital, Newport Beach
Kaiser Foundation Hospital, Anaheim
Orange County Community Hospital, Buena Park
Pacifica Community Hospital, Huntington Beach
Placentia Linda Community Hospital
Santa Ana Hospital and Medical Center
St. Joseph's Hospital, Orange
U.C. Irvine Medical Center
Vencor Hospital of Orange County, Westminster
Whittier Hospital and Medical Center, Buena Park

Environmental Organizations
Lawyers for Clean Water – Kim Lewand/Daniel Cooper
Orange County Coastkeeper – Garry Brown
Defend the Bay – Bob Caustin
Sierra Club, Orange County Chapter
Sierra Club, Los Angeles Chapter - Dick Hingson
Natural Resources Defense Council (NRDC) – David Beckman
Cousteau Society
Amigos De Bolsa Chica
Audobon Sea & Sage Chapter

Huntington Beach Wetlands Conservancy
Surfrider Foundation- Nancy Gardner
Alliance to Rescue Crystal Cove – Laura Davik

Newspapers
Orange County Register – Pat Brennan
Los Angeles Times – Seema Metha
Press Enterprise –
Daily Pilot – Paul Clinton

Major Water/Wastewater Agencies
Santa Ana Watershed Project Authority – Joseph Grindstaff
Irvine Ranch Water District – General Manager
Los Alisos Water District - General Manager
El Toro Water District - General Manager
San Bernardino County Flood Control District - Naresh Varma
Riverside County Flood Control & Water Conservation District – Steve Stump/Mark Wills
L.A. County Department of Public Works - Gary Hildebrand
Orange County Sanitation Districts - Blake Anderson
Orange County Water District - Bill Mills
Metropolitan Water District - Ed Means

September 12, 2001 Draft

California Regional Water Quality Control Board
Santa Ana Region

ORDER NO. 01-20
NPDES No. CAS618030

Waste Discharge Requirements
for
the County of Orange, Orange County Flood Control District
and
The Incorporated Cities of Orange County Within the Santa Ana Region
Areawide Urban Storm Water Runoff
Orange County

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board) finds that:

1. The 1987 amendments to the Clean Water Act (CWA) added Section 402(p) establishing a framework for regulating municipal and industrial (including construction) storm water discharges under the National Pollutant Discharge Elimination System (NPDES). Section 402(p) of the CWA requires NPDES permits for storm water discharges from municipal separate storm sewer systems (MS4) as well as other designated storm water discharges that are considered significant contributors of pollutants to waters of the United States. On November 16, 1990, the United States Environmental Protection Agency (hereinafter EPA) amended its NPDES permit regulations (40 CFR Parts 122, 123 and 124) to describe permit application requirements for storm water discharges.

2. Prior to EPA's promulgation of the storm water permit regulations, the three counties (Orange, Riverside, and San Bernardino) and the incorporated cities within the jurisdiction of the Santa Ana Regional Board requested areawide NPDES permits for urban storm water runoff. On July 13, 1990, the Regional Board adopted Order No. 90-71 for urban storm water runoff from urban areas in Orange County within the Santa Ana Region. The County of Orange was named as the principal permittee and the Orange County Flood Control District (OCFCD) and the incorporated cities were named as the co-permittees. Order No. 96-31, issued by the Regional Board on March 8, 1996, renewed the permit for another five years.

3. Order No. 96-31 expired on March 1, 2001. On September 1, 2000, the County of Orange Public Facilities and Resources Department (OCPFRD) and the Orange County Flood Control District (OCFCD) in cooperation with the cities of Anaheim, Brea, Buena Park, Costa Mesa, Cypress, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, Laguna Woods, La Habra, La Palma, Lake Forest, Los Alamitos, Newport Beach, Orange, Placentia, Santa Ana, Seal Beach, Stanton, Tustin, Villa Park, Westminster, and Yorba Linda (hereinafter collectively referred to as permittees or dischargers), submitted NPDES Application No. CAS618030 and a Report of Waste Discharge for reissuance of their areawide storm water permit. In order to more effectively carry out the requirements of this order, the permittees have agreed that the County of Orange will continue as principal permittee and the OCFCD and the incorporated cities will continue as co-permittees. On March 5, 2001, Order No. 96-31, NPDES No. CAS618030, was administratively extended in accordance with Title 23, Division 3, Chapter 9, §2235.4 of the California Code of Regulations.

4. The permittees serve a population of approximately 2.8 million, occupying an area of approximately 786 square miles (including unincorporated areas and the limits of 33 cities, 25 of which are within the jurisdiction of this Regional Board; two of the cities, Laguna Woods and Lake Forest, are within both the San Diego and Santa Ana Regional Boards' jurisdictions). The permitted area is shown on Attachment A. The permittees have jurisdiction over and /or maintenance responsibility for storm water conveyance systems within Orange County. The County's systems include an estimated 400 miles of storm drain systems. A major portion of the urbanized areas of Orange County drains into waterbodies within this Regional Board's jurisdiction. In certain cases, where a natural streambed is modified to convey storm water flows, the conveyance system becomes both an MS4 and a receiving water. The major storm drain systems and drainage areas in Orange County, which are within this Region, are shown on Attachment B. A portion of the Orange County drainage area is within the jurisdiction of the San Diego Regional Board and is regulated under an order issued by that Board..

5. Storm water discharges from the MS4 systems in Orange County are tributary to various water bodies of the Region. The permitted area can be subdivided into five tributary watersheds: the San Gabriel River drainage area, the Huntington Harbour and Bolsa Bay drainage area, the Santa Ana River drainage area, Newport Bay drainage area, and the Irvine and Newport Coast Areas of Special Biological Significance (see Attachment B). These watersheds are tributary to the Pacific Ocean. The surface water bodies in Orange County include:

   <u>Inland Surface Streams</u>

   a. Santa Ana River, Reaches 1 and 2,
   b. Silverado Creek (tributary to Santiago Creek),
   c. Santiago Creek, Reaches 1, 2, 3, and 4 (tributary to the Santa Ana River),
   d. San Diego Creek, Reaches 1 and 2 (tributary to Newport Bay),
   e. San Joaquin Freshwater Marsh (tributary to San Diego Creek),
   f. All other tributaries to these Creeks: Bonita Creek, Serrano Creek, Peters Canyon Wash, Hicks Canyon Wash, Bee Canyon Wash, Borrego Canyon Wash, Agua Chinon Wash, Laguna Canyon Wash, Rattlesnake Canyon Wash, Sand Canyon Wash, Black Star Creek, Carbon Canyon Creek, Coyote Creek and other tributaries.

   <u>Bays, Estuaries, and Tidal Prisms</u>

   a. Anaheim Bay,
   b. Sunset Bay,
   c. Bolsa Bay and Bolsa Chica Ecological Reserve,
   d. Lower and Upper Newport Bay,
   e. Tidal Prism of Santa Ana River (to within 1000 feet of Victoria Street) and Newport Slough, Santa Ana Salt Marsh,
   f. Tidal Prism of San Gabriel River (River Mouth to Marina Drive),

g. Tidal Prisms of Flood Control Channels Discharging to Coastal or Bay Waters (e.g., Huntington Harbour),

Ocean Waters

Nearshore Zone

a. San Gabriel River to Poppy Street in Corona Del Mar,

b. Poppy Street to Southeast Regional Boundary,

Offshore Zone

a. Waters between Nearshore Zone and Limit of State Waters,

Lakes and Reservoirs

a. Irvine Lake (Santiago Reservoir), and

b. Laguna, Peters Canyon, and Rattlesnake Reservoirs.

The beneficial uses of these water bodies include: municipal and domestic supply, agricultural supply, industrial service and process supply, groundwater recharge, navigation, hydropower generation, water contact recreation, non-contact water recreation, commercial and sportfishing, warm freshwater and limited warm freshwater habitats, cold freshwater habitat, preservation of biological habitats of special significance, wildlife habitat, preservation of rare, threatened or endangered species, marine habitat, shellfish harvesting, spawning, reproduction and development of aquatic habitats, and estuarine habitat . The ultimate goal of this storm water management program is to protect the beneficial uses of the receiving waters.

6. The Santa Ana River Basin is the major watershed within the jurisdiction of the Regional Board. The lower Santa Ana River Basin (downstream from Prado Basin) includes the Orange County drainage areas and the Upper Santa Ana River Basin includes the San Bernardino and the Riverside drainage areas. Generally, the San Bernardino County drainage areas drain to the Riverside County drainage areas, and Riverside County drainage areas discharge to Orange County.

7. Within the Region, runoff from the San Bernardino County areas is generally conveyed to the Riverside County areas through the Santa Ana River or other drainage channels tributary to the Santa Ana River. These flows are then discharged to Reach 2 of the Santa Ana River through Prado Basin (Reach 3 of the Santa Ana River). Most of the flow in Reach 2 is recharged in Orange County. During wet weather, some of the flow is discharged to the Pacific Ocean through Reach 1 of the Santa Ana River.

8. The three county areas within this Region are regulated under three areawide permits for urban storm water runoff. These areawide NPDES permits are:

   a. Orange County, NPDES No. CAS618030;

   b. Riverside County, NPDES No. CAS618033; and

   c. San Bernardino County, NPDES No. CAS618036.

   For an effective watershed management program, cooperation and coordination among the regulators, the municipal permittees, the public, and other entities are essential.

9. Studies conducted by the EPA, the states, flood control districts and other entities indicate the following major sources for urban storm water pollution nationwide:
    a. Industrial sites where appropriate pollution control and best management practices (BMPs)[1] are not implemented;
    b. Construction sites where erosion and siltation controls and BMPs are not implemented; and
    c. Urban runoff where the drainage area is not properly managed.
10. A number of permits were adopted to address pollution from the sources identified in Finding 9, above. The State Board issued two statewide general NPDES permits: one for storm water runoff from industrial activities (NPDES No. CAS000001, General Industrial Activities Storm Water Permit) and a second one for storm water runoff from construction activities (NPDES No. CAS000002, General Construction Activity Storm Water Permit). Industrial activities (as identified in 40 CFR 122.26(b)14) and construction sites of five acres or more, are required to obtain coverage under these statewide general permits. The permittees have developed project conditions of approval requiring coverage under the State's General Permit for new developments to be implemented at the time of grading or building permit issuance for construction sites on five acres or more and at the time of local permit issuance for industrial facilities. The State Board also adopted Order No. 99-06-DWQ, NPDES No. CAS000003, for storm water runoff from facilities (including freeways and highways) owned and/or operated by Caltrans. The Regional Board adopted Order 99-11, NPDES No. CAG018001, for concentrated animal feeding operations, including dairies. The Regional Board also issues individual storm water permits for certain industrial facilities within the Region. Currently there are 22 individual storm water NPDES permits; 8 of these facilities are located in the Orange County area. Additionally, for a number of facilities that discharge process wastewater and storm water, storm water discharge requirements are included with the facilities' NPDES permit for process wastewater.
11. In most cases, the industries and construction sites covered under the Statewide General Industrial and Construction Permits discharge into storm drains and/or flood control facilities owned and operated by the permittees. These industries and construction sites are also regulated under local laws and regulations. A coordinated effort between the permittees and the Regional Board staff is critical to avoid duplicative and overlapping efforts when overseeing the compliance of dischargers covered under the Statewide General Permits. As part of this coordination, the permittees have been notifying Regional Board staff when conditions that result in a threat or potential threat to water quality are observed during their routine activities, or when a required industrial facility or construction activity fails to obtain coverage under the appropriate general storm water permit.
12. The permittees approve plans for residential, commercial, and industrial developments, thus allowing further urbanization to occur within their respective jurisdiction. If not properly controlled and managed, urbanization could result in the discharge of pollutants in storm water

[1] Best Management Practices (BMPs) are water quality management practices that are maximized in efficiency for the control of storm water runoff pollution.

runoff. Urban area runoff (Finding 9. c) may contain elevated levels of pathogens (bacteria, protozoa, viruses), sediment, trash, fertilizers (nutrients, compounds of nitrogen and phosphorus), pesticides (DDT, Chlordane, Diazinon, Chlorpyrifos), heavy metals (cadmium, chromium, copper, lead, zinc), and petroleum products (oil, grease, petroleum hydrocarbons, polycyclic aromatic hydrocarbons). Storm water can carry these pollutants to rivers, streams, lakes, bays and the ocean (receiving waters).

13. Pollutants in urban runoff can impact the beneficial uses of the receiving waters and can cause or threaten to cause a condition of pollution or nuisance. Pathogens (from sanitary sewer overflows, septic system leaks, and spills and leaks from portable toilets, pets, wildlife and human activities) can impact water contact recreation, non-contact water recreation and shellfish harvesting. Microbial contamination of the beaches from urban runoff and other sources has resulted in a number of health advisories issued by the Orange County Health Officer. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors. Oil and grease can coat birds and aquatic organisms, adversely affecting respiration and/or thermoregulation. Other petroleum hydrocarbon components can cause toxicity to aquatic organisms and can impact human health. Suspended and settleable solids (from sediment, trash, and industrial activities) can be deleterious to benthic organisms and may cause anaerobic conditions to form. Sediments and other suspended particulates can cause turbidity, clog fish gills and interfere with respiration in aquatic fauna. They can also screen out light, hindering photosynthesis and normal aquatic plant growth and development. Toxic substances (from pesticides, herbicides, petroleum products, metals, industrial wastes) can cause acute and/or chronic toxicity, and can bioaccumulate in organisms to levels that may be harmful to human health. Nutrients (from fertilizers, confined animal facilities, pets, birds) can cause excessive algal blooms. These blooms can lead to problems with taste, odor, color and increased turbidity, and can depress the dissolved oxygen content, leading to fish kills.

14. A major portion of Orange County is urbanized with residential, commercial, and industrial developments. Urban development increases impervious surfaces and storm water runoff volume and velocity, and decreases vegetated pervious surface available for infiltration of storm water. Increase in runoff volume and velocity can cause scour, erosion (sheet, rill and/or gully), aggradation (raising of a streambed from sediment deposition), and can change fluvial geomorphology, hydrology, and aquatic ecosystems. The local agencies (the permittees) are the owners and operators of the MS4 systems and have established appropriate legal authority to control some but not all discharges to these systems (see Finding 16). The permittees have established appropriate legal authority to control discharges into the MS4 systems. They adopted grading and/or erosion control ordinances, guidelines and best management practices (BMPs) for municipal, commercial, and industrial activities, and a drainage area management plan (DAMP). The permittees must exercise a combination of these programs, policies, and legal authority to ensure that pollutant loads resulting from urbanization are properly controlled and managed.

15. This order regulates urban storm water runoff from areas under the jurisdiction of the permittees. Urban storm water runoff includes those discharges from residential, commercial, industrial, and construction areas within the permitted area and excludes discharges from feedlots, dairies, and farms (also see Finding 16). Storm water discharges consist of surface runoff generated from various land uses in all the hydrologic drainage areas that discharge into the water bodies of the

U.S. The quality of these discharges varies considerably and is affected by land use activities, basin hydrology and geology, season, the frequency and duration of storm events, and the presence of illegal disposal practices/illicit connections.

16. The permittees may lack legal jurisdiction over storm water discharges into their systems from some State and federal facilities, utilities and special districts, Native American tribal lands, waste water management agencies and other point and non-point source discharges otherwise permitted by the Regional Board. The Regional Board recognizes that the permittees should not be held responsible for such facilities and/or discharges. Similarly,certain activities that generate pollutants present in storm water runoff may be beyond the ability of the permittees to eliminate. Examples of these include operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear and leaching of naturally occurring minerals from local geography.

17. This order is intended to regulate the discharge of pollutants in urban storm water runoff from anthropogenic (generated from human activities) sources within the jurisdiction and control of the permittees and is not intended to address background or naturally occurring pollutants or flows.

18. The water quality assessment conducted by Regional Board staff has identified a number of other beneficial use impairments due, in part, to urban runoff. Section 303(b) of the CWA requires each of the regional boards to routinely monitor and assess the quality of waters of the region. If this assessment indicates that beneficial uses and/or water quality objectives are not met, then that waterbody must be listed under Section 303(d) of the CWA as an impaired waterbody. The 1998 water quality assessment listed a number of water bodies within the Region under Section 303(d) as impaired waterbodies. In the Orange County area, these include: (1) San Diego Creek, Reach 1 (listed for sedimentation/siltation, metals, nutrients, pesticides); (2) San Diego Creek, Reach 2 (listed for sedimentation/siltation, nutrients, metals, unknown toxicity); (3) Upper Newport Bay Ecological Reserve (listed for sedimentation/siltation, metals, nutrients, pathogens, pesticides); (4) Lower Newport Bay (listed for metals, pesticides, pathogens, nutrients, priority organics); (5) Anaheim Bay (listed for metals, pesticides); 6) Huntington Harbour (listed for metals, pesticides, pathogens); 7) Santiago Creek, Reach 4 (listed for salinity, TDS, chlorides); and 8) Silverado Creek (listed for pathogens, salinity, TDS, chlorides). For some of these impaired waterbodies, the cause of impairment is listed as urban runoff.

19. Federal regulations require that a total maximum daily load (TMDL) be established for each 303(d) listed waterbody for each of the pollutants causing impairment. The TMDL is the total amount of the problem pollutant that can be discharged while water quality standards in the receiving water are attained, i.e., water quality objectives are met and the beneficial uses are protected. It is the sum of the individual wasteload allocations (WLA) for point source inputs, load allocations (LA) for non-point source inputs and natural background, with a margin of safety. The TMDLs are the basis for limitations established in waste discharge requirements. TMDLs have been developed for sediment and nutrients for San Diego Creek and Newport Bay. A fecal coliform TMDL for Newport Bay has also been established The WLAs from these TMDLs are included in this order. Dischargers to these water bodies are currently implementing these TMDLs. To avoid any duplicative efforts, this order does not include any further

requirements for implementation of the WLAs. However, this order may be reopened to include TMDL implementation, if other implementation methodologies are not effective.

20. The MS4s generally contain non-storm water flows such as irrigation runoff, runoff from non-commercial car washes, runoff from miscellaneous washing and cleaning operations, and other nuisance flows. These non-storm water flows may contain a higher concentration of pollutants compared to storm water. Discharges of non-storm water containing pollutants into the MS4 systems and to waters of the U.S. are prohibited unless they are regulated under separate NPDES permit; certain types of non-storm water containing no pollutants are exempt as indicated in Discharge Prohibitions, Section III, Item 4 of this order.

21. Order No. 90-71 (first term permit) required the permittees to: (1) develop and implement the DAMP and a storm water and receiving water monitoring plan; (2) eliminate illegal and illicit discharges to the MS4s; and (3) enact the necessary legal authority to effectively prohibit such discharges. The overall goal of these requirements was to reduce pollutant loadings to surface waters from urban runoff to the maximum extent practicable (MEP)[2]. Order No. 96-31 (second term permit) required continued implementation of the DAMP and the monitoring plan, and required the permittees to focus on those areas that threaten beneficial uses.

22. This order (Order No. 01-20, third term permit) outlines additional steps for an effective storm water management program and specifies requirements to protect the beneficial uses of all receiving waters. This order requires the permittees to examine sources of pollutants in storm water runoff from activities for which the permittees conduct, approve, regulate and/or authorized by issuing a license or permit.

23. The Report of Waste Discharge (the permit renewal application) included the following major documents:

    a. Summary of status of current Storm Water Management Program;

    b. Proposed Plan of Storm Water Quality Management Activities for 2001-2006 as outlined in the Updated DAMP. The 2000 DAMP includes all the activities the permittees propose to undertake during the next permit term, goals and objectives of such activities, an evaluation of the need for additional source control and/or structural and non-structural BMPs and proposed pilot studies;

    c. A Performance Commitment that includes new program elements and compliance schedules necessary to implement controls that reduce pollutants to the maximum extent practicable.

    d. A summary of procedures implemented to detect illegal discharges and illicit disposal practices;

    e. A summary of enforcement procedures and actions taken to require storm water discharges to comply with the approved storm water management programs;

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[2] Maximum Extent Practicable (MEP) means to the maximum extent possible, taking into account considerations of synergistic, additive, and competing factors, including but not limited to, gravity of the problem, technical feasibility,fiscal feasibility, public health risks, societal concerns, and social benefits.

f. A summary of public agency activity, results of monitoring program, and program effectiveness; and

g. A fiscal analysis.

24. The permittees own/operate facilities where industrial or related activities take place that may have an impact on storm water quality. Some of the permittees also enter into contracts with outside parties to carry out municipal related activities that may also have an impact on storm water quality. These facilities and related activities include, but are not limited to, street sweeping, catch basin cleaning, maintenance yards, vehicle and equipment maintenance areas, waste transfer stations, corporation and storage yards, parks and recreational facilities, landscape and swimming pool maintenance activities, storm drain system maintenance activities and the application of herbicides, algaecides and pesticides. The permittees have prepared and implemented an environmental performance report for appropriate fixed public facilities under their jurisdiction, and identified best management practices for those activities found to require pollution prevention measures. Non-storm water discharges from these facilities and/or activities could also affect water quality. This order prohibits non-storm water discharges from public facilities unless the discharges are exempt under Section III, Discharge Limitations, 4& 6 of this order or are permitted by the Regional Board under an individual NPDES permit. The second term permit required the permittees to prepare an Environmental Performance Reporting Program to identify significant issues and to implement corrective actions at municipal facilities and activities. Most of this work has been completed. However, this is a continuing process and this order requires the permittees to continue this process at least on an annual basis.

25. Successful implementation of the provisions and limitations in this order will require the cooperation of all the public agency organizations within Orange County having programs/activities that have an impact on storm water quality. A list of these organizations is included in Attachment C. As such, these organizations are expected to actively participate in implementing the Orange County NPDES Storm Water Program. The Regional Board has the discretion and authority to require non-cooperating entities to participate in this areawide permit or obtain individual storm water discharge permits, pursuant to 40 CFR 122.26(a). The permittees have developed a Storm Water Implementation Agreement among the County, the cities and the Orange County Flood Control District. The Implementation Agreement establishes the responsibilities of each party and a funding mechanism for the shared costs, and recognizes the Technical Advisory Committee (TAC).

26. The major focus of storm water pollution prevention is the development and implementation of an appropriate DAMP including best management practices (BMPs). The ultimate goal of the urban storm water management program is to support attainment of water quality objectives for the receiving waters and to protect beneficial uses through the implementation of the DAMP. The permittees developed and submitted a DAMP, which was approved on May 3, 1994.

27. The DAMP is a dynamic document and the permittees have implemented, or are in the process of implementing, the various elements of the DAMP. A revised DAMP was included with the NPDES permit renewal application. This order requires the permittees to continue to implement the BMPs listed in the revised DAMP and to effectively prohibit illegal and illicit discharges to the storm drain system.

28. Urban runoff contains pollutants from privately owned and operated facilities, such as residences, businesses, private and/or public institutions, and commercial establishments. Therefore, a successful storm water management plan should include the participation and cooperation of the public, businesses, the permittees and the regulators. The DAMP has a strong emphasis on public education.

29. The Orange County DAMP defined: (1) a management structure for the permittees' compliance effort; (2) a formal agreement to underpin cooperation, and (3) a detailed municipal effort to develop, implement, and evaluate various BMPs or control programs in the areas of public agency activities, public information, new development and construction, public works construction, industrial discharger identification, and illicit discharger/connection identification and elimination.

30. In order to characterize storm water discharges, to identify problem areas, to determine the impact of urban runoff on receiving waters, and to determine the effectiveness of the various BMPs, an effective monitoring program is critical. The principal permittee administers the monitoring program for the permittees. This program included storm water monitoring, receiving water monitoring, dry weather monitoring and sediment monitoring. The monitoring data indicate some spatial differences in water quality among Orange County's major watersheds. Based on these monitoring data, the monitoring program was revised in 1998 to focus on "warm spots" (areas where the pollutant concentrations were above the average for the watershed) and "special value" areas (critical aquatic resources). Another element of the monitoring program is the Reconnaissance and Source Identification component that targets areas that are known to exhibit unusually high levels of storm water pollutants.

31. In accordance with the Strategic Plan and Initiatives (June 22, 1995) for the State and Regional Boards, the Regional Board recognizes the importance of an integrated watershed management approach. The Regional Board also recognizes that a watershed management program should integrate all related programs, including the storm water program and TMDL processes. Consistent with this approach, some of the monitoring programs have already been integrated into regional monitoring programs.

32. Any illegal dumping and illicit/illegal connections and discharges[3] to the storm drains could contribute to storm water and other surface water contamination. A reconnaissance survey of the municipal storm drain systems (open channels and underground storm drains) was completed by the permittees. The permittees also developed a program to prohibit illegal/illicit connections to their storm drains and flood control facilities. Continued surveillance and enforcement of these programs are required to eliminate illicit connections and illegal discharges. The permittees have a number of mechanisms in place to eliminate illegal discharges to the MS4s, including industrial facility inspections, drainage facility inspections, water quality monitoring programs, and public education. The permittees also established a 24-hour water pollution problem reporting hotline. In February 1997, the permittees certified that they had completed a reconnaissance survey of the MS4s to detect and eliminate any illicit connections

[3] Illegal discharge means any discharge (or seepage) to the municipal separate storm sewer that is not composed entirely of storm water except for the authorized discharges listed in Section III of this permit. Illegal discharges include the improper disposal of wastes into the storm sewer system.

(undocumented or unpermitted connections to the MS4s). A reconnaissance survey is now being conducted as a part of the routine inspections of all MS4s.

33. The permittees have the authority to control pollutants in storm water discharges, to prohibit illegal discharges/illicit connections, to control spills, and to require compliance and carry out inspections of the storm drain systems within their jurisdictions. The permittees have various forms of legal authority in place, such as charters, State Code provisions for General Law cities, city ordinances, and applicable portions of municipal codes and the State Water Code, to regulate storm water/urban runoff discharges. In order to insure countywide consistency and to provide a legal underpinning to the entire Orange County storm water program, a model water quality ordinance was completed on August 15, 1994 and was adopted by all the permittees. The permittees are required by this order to review their existing enforcement authority to determine whether any additional legal authority is needed in order for permittees to administer civil and/or criminal penalties in enforcement actions for violations of the Water Quality Ordinance.

34. Pollution prevention techniques, appropriate planning processes, and early identification of potential storm water impacts and mitigation measures can significantly reduce storm water pollution problems. The permittees should consider these impacts and appropriate mitigation measures in the planning procedures and in the California Environmental Quality Act (CEQA) review process for specific projects, Master Plans, etc. The permittees already require a Water Quality Management Plan, which addresses permanent post-construction BMPs, in addition to the SWPPP, which is required by the statewide general permit for construction activity. The permittees are encouraged to propose and participate in watershed wide and/or regional water quality management programs.

35. As such, these organizations are expected to actively participate in implementing this areawide storm water program. The permittees have developed inter-departmental training programs and have made commitments to conduct a certain number of these training programs during the term of this permit.

36. In accordance with the Clean Water Act and its implementing regulations, this order requires the permittees to develop and implement programs and policies necessary to reduce the discharge of pollutants in urban runoff to waters of the U. S. to the maximum extent practicable (MEP).

37. The legislative history and the preamble to the federal storm water regulations indicate that the Congress and the U.S. EPA were aware of the difficulties in regulating urban storm water runoff solely through traditional end-of-pipe treatment. However, it is the Regional Board's intent that this order shall achieve attainment and protection of the beneficial uses of receiving waters to the maximum extent practicable. This order, therefore, includes Receiving Water Limitations based upon water quality objectives, the prevention of nuisance and the reduction of water quality impairment in receiving waters. In accordance with Section 402 (p) of the Clean Water Act, this order requires the permittees to implement control measures, in accordance with the approved DAMP, that will reduce pollutants in storm water discharges to the maximum extent practicable. The Receiving Water Limitations similarly require the implementation of control measures that are technically and economically feasible to protect beneficial uses and attain water quality objectives of the receiving waters.

38. The Regional Board finds that the unique aspects of the regulation of storm water discharges through municipal storm sewer systems, including the intermittent nature of discharges, difficulties in monitoring and limited physical control over the discharge, will require adequate time to implement and evaluate the effectiveness of BMPs. Therefore, the order includes a procedure for determining whether storm water discharges are causing exceedances of receiving water limitations and for evaluating whether the DAMP must be revised. The order establishes an iterative process to maintain compliance with the receiving water limitations.

39. A revised Water Quality Control Plan (Basin Plan) was adopted by the Regional Board and became effective on January 24, 1995. The Basin Plan contains water quality objectives and beneficial uses for water bodies in the Santa Ana Region. The Basin Plan also incorporates by reference all State Board water quality control plans and policies, including the 1990 Water Quality Control Plan for Ocean Waters of California (Ocean Plan) and the 1974 Water Quality Control Policy for Enclosed Bays and Estuaries of California (Enclosed Bays and Estuaries Plan).

40. The requirements contained in this order are necessary to implement the plans and policies described in Finding 39, above. These plans and policies contain numeric and narrative water quality standards for the water bodies in this Region. This order requires permittees to comply with load allocations for constituents with established load allocations for urban runoff by implementing the necessary BMPs. Continuation of water quality/biota monitoring and analysis of the data are essential to better understand the impacts of storm water discharges on the water quality of the receiving water. The existing Basin Plan, or any further changes to the Basin Plan may be grounds for the permittees to revise some or all of the DAMP and/or the ROWD.

41. Permittees will be required to comply with any applicable future water quality standards or discharge requirements that may be imposed by the EPA or State of California prior to the expiration of this order. This order may be reopened to include TMDLs and/or other requirements developed and adopted by the Regional Board.

42. The permittees may petition the Regional Board to issue a separate NPDES permit to any discharger of non-storm water into storm drain systems that they own or operate.

43. The permittees under the aegis of the TAC, and in collaboration with the City and County Attorneys, Orange County Sanitation District, the Orange County Building Industry Association, the Food Sanitation Advisory Council, and Western States Petroleum Association, developed an Enforcement Consistency Guide and a Water Quality Ordinance. All of the permittees adopted the Enforcement Consistency Guide and the Water Quality Ordinance. These documents establish legal authority for enforcing storm water ordinances and countywide uniformity in the enforcement actions.

44. It is important to control litter to eliminate trash and other materials in storm water runoff. In addition to the municipal ordinances prohibiting litter, the permittees participate or organize a number of other programs such as “Coastal Cleanup Day”, “Pride Days”, “Volunteer Connection Day”, etc. The permittees also organize solid waste collection programs, household hazardous waste collections, and recycling programs to reduce litter and illegal discharges. Additionally, the permittees have installed debris booms at a number of locations.

45. The permittees are required to continue their drainage system inspection and maintenance program.

46. At a number of locations along the Orange County coast, elevated bacterial levels were detected during the summer of 1999 and 2000. One of the studies conducted to determine the source of bacterial contamination indicated that there is only a minor contribution to the bacterial problems from urban runoff. The permittees currently divert dry weather low flows from some of these areas to sanitary sewer systems on a temporary basis to address this bacterial problem. A number of studies have been initiated to determine the source of this microbial contamination and to develop permanent remedial measures. This order requires the permittees to further investigate and address the coastal bacterial problems.

47. The sampling data indicate the presence of elevated levels of pesticides in storm water runoff from urban areas. The permittees have developed and implemented a model plan entitled, "Management Guidelines for Use of Fertilizers and Pesticides". The permittees are required to review this plan to determine its effectiveness and to make any needed changes.

48. Public education is an important part of storm water pollution prevention. The permittees have employed a variety of means to educate the public, business and commercial establishments, industrial facilities and construction sites, and in 1999 developed a long term public education strategy. The permittees are required to continue their efforts in public education programs.

49. The permittees established a taskforce consisting of the principal permittee, Building Industry Association, Association of General Contractors and Civil Engineers and Land Surveyors of California and developed "Best Management Practices for New Development Including Non-Residential Construction Projects (1-5 acres)". The permittees are implementing the BMPs from this guidance document and are requiring new developments and significant redevelopments to develop and implement appropriate Water Quality Management Plans. This order requires structural and non-structural BMPs for new developments and significant redevelopments only if adequate regional and/or watershed wide management programs are not being implemented.

50. The Regional Board and the permittees recognize the importance of watershed management initiatives and regional planning and coordination in the development and implementation of programs and policies related to water quality protection. A number of such efforts are underway in which the permittees are active participants. This order encourages continued participation in such programs and policies. The Regional Board also recognizes that in certain cases, diversion of funds targeted for certain monitoring programs to regional monitoring programs may be necessary. The Executive Officer is authorized to review and approve such diversions.

51. The storm water regulations require public participation in the development and implementation of the storm water management program. As such, the permittees are required to solicit and consider all comments received from the public and submit copies of the comments to the Executive Officer of the Regional Board with the annual reports due on November 15. In response to public comments, the permittees may modify reports, plans, or schedules prior to submittal to the Executive Officer.

52. In accordance with California Water Code Section 13389, the issuance of waste discharge requirements for this discharge is exempt from those provisions of the California Environmental

Quality Act contained in Chapter 3 (commencing with Section 21100), Division 13 of the Public Resources Code.

53. The permitted discharge is consistent with the anti-degradation provisions of 40 CFR 131.12 and the State Board Resolution 68-16. This order requires implementation of programs (i.e., BMPs) to reduce the level of pollutants in the storm water discharges. The potential increase of pollutant discharge in storm water from these sources will addressed in the review and implementation of the program and by the addition of a Water Quality Management Plan to the requirements of this order.

54. The Regional Board has notified the permittees and interested parties of its intent to issue waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

55. The Regional Board, in a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.

IT IS HEREBY ORDERED that the permittees, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act, as amended, and regulations and guidelines adopted thereunder, shall comply with the following:

I. RESPONSIBILITIES OF PRINCIPAL PERMITTEE

The principal permittee shall be responsible for the overall program management and shall:

1. Conduct chemical and biological water quality monitoring, as agreed upon by the Executive Officer of the Regional Board.
2. Conduct inspections and maintain the storm drain systems within its jurisdiction.
3. Review and revise, if necessary, policies/ordinances necessary to establish legal authority as required by the Federal Storm Water Regulations.
4. Respond and/or arrange for responding to emergency situations such, as accidental spills, leaks, illegal discharges/illicit connections, etc., to prevent or reduce the discharge of pollutants to storm drain systems and waters of the U.S. within its jurisdiction.
5. Take appropriate enforcement actions for discharges to the MS4 systems owned or controlled by the principal permittee.
6. Prepare and submit to the Executive Officer of the Regional Board unified reports, plans, and programs as required by this order, including the annual report.

The activities of the principal permittee should include, but not be limited to, the following:

1. Coordinate and conduct Management Committee meetings on an as needed basis. The principal permittee will take the lead role in initiating and developing area-wide programs and activities necessary to comply with the NPDES Permit.
2. Coordinate permit activities and participate in any subcommittees formed as necessary, to coordinate compliance activities with this order.

3. Provide technical and administrative support and inform the co-permittees of the progress of other pertinent municipal programs, pilot projects, research studies, etc.
4. Coordinate the implementation of areawide storm water quality management activities such as public education, pollution prevention, household hazardous waste collection, etc.
5. Develop and implement mechanisms, performance standards, etc., to promote uniform and consistent implementation of BMPs among the permittees.
6. Pursue enforcement actions as necessary within its jurisdiction to ensure compliance with storm water management programs, ordinances and implementation plans, including physical elimination of undocumented connections and illicit discharges.
7. In conjunction with the other permittees, implement the BMPs listed in the approved DAMP.
8. Monitor the implementation of the plans and programs required by this order and determine their effectiveness in protecting beneficial uses.
9. Coordinate all the activities with the Regional Board, including the submittal of all reports, plans, and programs as required under this order.
10. Obtain public input for any proposed management and implementation plans where applicable.
11. Cooperate in watershed management programs and regional and/or statewide monitoring programs.

II. RESPONSIBILITIES OF THE CO-PERMITTEES

The co-permittees shall be responsible for the management of storm drain systems within their jurisdictions and shall:

1. Implement management programs, monitoring programs, implementation plans and all BMPs outlined in the DAMP within each respective jurisdiction.
2. Coordinate among its internal departments and agencies, as appropriate, to facilitate the implementation of this Order and the DAMP.
3. Establish and maintain adequate legal authority, as required by the Federal Storm Water Regulations.
4. Conduct storm drain system inspections and maintenance in accordance with the criteria developed by the principal permittee.
5. Take appropriate enforcement actions for discharges to the MS4 system owned or controlled by the co-permittee.

The co-permittees' activities should include, but not be limited to, the following:

1. Participate in a Management Committee comprised of the principal permittee and one representative of each co-permittee. The principal permittee will take the lead role in initiating and developing area-wide programs activities necessary to comply with the NPDES Permit. The committee will meet on a regular basis (at least six times per year). Each permittee shall designate one official representative to the Management Committee.

2. Review, approve, implement, and comment on all plans, strategies, management programs, and monitoring programs, as developed by the principal permittee or any permittee subcommittee to comply with this order.
3. Pursue enforcement actions as necessary to ensure compliance with the storm water management programs, ordinances and the implementation plans including physical elimination of undocumented connections and illicit discharges.
4. Conduct and coordinate with the principal permittee any surveys and characterizations needed to identify the pollutant sources and drainage areas.
5. Submit storm drain system maps with periodic revisions as necessary.
6. Respond to emergency situations such as accidental spills, leaks, illegal discharges/illicit connections, etc. to prevent or reduce the discharge of pollutants to storm drain systems and waters of the U.S.
7. Prepare and submit all reports to the principal permittee in a timely manner.

III. DISCHARGE LIMITATIONS/PROHIBITIONS

1. The permittees shall prohibit illicit/illegal discharges from entering into the municipal separate storm sewer systems and require controls to reduce the discharge of pollutants to the maximum extent practicable.
2. Discharges from the municipal separate storm sewer systems shall not cause or contribute to a condition of contamination, nuisance, or pollution in waters of the State as defined in Section 13050 of the Water Code.
3. The discharge of storm water into the MS4s and from the MS4s to waters of the United States containing pollutants that have not been reduced to the maximum extent practicable is prohibited.
4. The permittees shall effectively prohibit the discharge of non-storm water into the MS4s, unless such discharges are authorized by a separate NPDES permit or otherwise as specified in this provision. Certain discharges identified below may not contain pollutants and need not be prohibited by the permittees. If these discharges are identified by the permittees or the Executive Officer as a source of pollutants, coverage under the Regional Board's de Minimus permit is required.
    a. Discharges composed entirely of storm water,
    b. from potable water line flushing and other potable water sources,
    c. fire hydrant testing and flushing; with appropriate BMPs,
    d. air conditioning condensation,
    e. landscape irrigation, lawn garden watering and other irrigation waters,
    f. passive foundation drains,
    g. passive footing drains,
    h. water from crawl space pumps,

i. dechlorinated swimming pool discharges,

j. non-commercial vehicle washing,

k. diverted stream flows,

l. rising ground waters and natural springs,

m. ground water infiltration as defined in 40 CFR 35.2005 (20) and uncontaminated pumped groundwater,

n. flows from riparian habitats and wetlands,

o. emergency fire fighting flows need not be prohibited; however, appropriate BMPs shall be implemented to the extent practicable; BMPs must be implemented to reduce pollutants from non-emergency fire fighting flows;

p. waters not otherwise containing wastes as defined in California Water Code Section 13050 (d), and

q. other types of discharges identified and recommended by the permittees and approved by the Regional Board.

The Executive Officer may add categories of non-storm water discharges that are not significant sources of pollutants or remove categories of non-storm water discharges listed above based upon a finding that the discharges are a source of pollutants.

5. For purposes of this order, a discharge may include storm water and other types of discharges, as indicated above.

6. Non-storm water discharges from public agency activities into waters of the U.S. are prohibited unless the non-storm water discharges are permitted by an NPDES permit or are included in Item 4., above. If permitting or immediate elimination of the non-storm water discharges is impractical, the permittees shall include in the Environmental Performance Report, a proposed plan to eliminate the non-storm water discharges in a timely manner.

7. The permittees shall reduce the discharge of pollutants, including trash and debris, to the storm water conveyance systems to the maximum extent practicable.

8. Discharges from the MS4s shall be in compliance with the applicable discharge prohibitions contained in Chapter 5 of the Basin Plan.

IV. RECEIVING WATER LIMITATIONS

1. Discharges from the MS4s shall not cause or contribute to exceedances of receiving water quality standards (designated beneficial uses and water quality objectives) for surface waters or groundwaters.

2. Discharges from the MS4s of storm water, or non-storm water, for which a Permittee is responsible for, shall not cause or contribute to a condition of nuisance.

3. The DAMP and its components shall be designed to achieve compliance with receiving water limitations. The permittees shall comply with Section IV. 1 and 2 of this order through timely implementation of control measures and other actions to reduce pollutants in

urban storm water runoff in accordance with the DAMP and other requirements of this order, including any modifications thereto.

4. If permittees continue to cause or contribute to an exceedance of water quality, notwithstanding implementation of the DAMP and other requirements of this order, the permittees shall assure compliance with Section IV. 1 of this order by complying with the following procedure:

   a. Upon a determination by either the permittees or the Executive Officer that the discharges from the MS4 systems are causing or contributing to an exceedance of an applicable water quality standard, the permittees shall promptly notify and thereafter submit a report to the Executive Officer that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of water quality standards. The report may be incorporated in the annual update to the DAMP, unless the Executive Officer directs an earlier submittal. The report shall include an implementation schedule. The Executive Officer may require modifications to the report;

   b. Submit any modifications to the report required by the Executive Officer within 30 days of notification;

   c. Within 30 days following approval by the Executive Officer of the report described above, the permittees shall revise the DAMP and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring required;

   d. Implement the revised DAMP and monitoring program in accordance with the approved schedule.

   So long as the permittees have complied with the procedures set forth above and are implementing the revised DAMP, the permittees do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Executive Officer to do so.

V. IMPLEMENTATION AGREEMENT

1. By July 1, 2002, the existing Implementation Agreement shall be revised to include the cities that were not signatories to this agreement. A copy of the signature page and any revisions to the Agreement shall be included in the annual report.

2. By July 1, 2002, the permittees shall evaluate the storm water management structure and the Implementation Agreement and determine the need for any revision. The corresponding annual report shall include the findings of this review and a schedule for any needed revisions.

VI. LEGAL AUTHORITY/ENFORCEMENT

1. The permittees shall maintain and enforce adequate legal authority to control discharge of pollutants into their MS4 systems.

2. The permittees shall take appropriate enforcement actions against any violators of their Water Quality Ordinance, in accordance with the adopted/established guidelines and procedures. All enforcement actions shall be consistent with the Enforcement Consistency Guide.
3. Permittees' ordinances or other local regulatory mechanisms shall include sanctions to ensure compliance. Sanctions shall include but are not limited to: monetary penalties, non-monetary penalties, bonding requirements, and/or permit denials/revocations/stays for non-compliance. If the permittees' current ordinances do not have a provision for civil or criminal penalties for violations of their water quality ordinances, the permittees shall enact such ordinances by July 1, 2003.
4. By November 1, 2003, each permittee shall submit a statement, signed by legal counsel that the permittee has obtained all necessary legal authority to comply with this Order through adoption of ordinances and/or municipal code modifications.
5. The permittees shall continue to provide notification to Regional Board staff regarding storm water related information gathered during site inspections of industrial and construction sites regulated by the Statewide General Storm Water Permits and at sites that should be regulated under the State's General Permits. The notification should include any observed violations of the General Permits, prior history of violations, any enforcement actions taken by the permittee, and any other relevant information.
6. By July 1, 2003, the permittees shall review the ordinances establishing legal authority to determine the effectiveness of these ordinances in prohibiting the following types of discharges to the MS4s (the permittees may propose appropriate control measures in lieu of prohibiting these discharges, where the permittees are responsible for ensuring that dischargers adequately maintain those control measures):
   a. Sewage, where authority exists;
   b. Wash water resulting from the hosing or cleaning of gas stations, auto repair garages, and other types of automobile service stations;
   c. Discharges resulting from the cleaning, repair, or maintenance of any type of equipment, machinery, or facility, including motor vehicles, concrete mixing equipment, portable toilet servicing, etc.;
   d. Wash water from mobile auto detailing and washing, steam and pressure cleaning, carpet cleaning, and other such mobile commercial and industrial activities;
   e. Water from cleaning of municipal, industrial, commercial, and including parking lots, streets, sidewalks, driveways, patios, plazas, work yards and outdoor eating or drinking areas, etc;
   f. Runoff from material storage areas or uncovered receptacles, either of which contain chemicals, fuels, grease, oil, or other hazardous materials;
   g. Discharges of runoff from the washing of toxic materials from paved or unpaved areas;
   h. Discharges from pool or fountain water containing chlorine, biocides, or other chemicals; pool filter backwash containing debris and chlorine;

i. Pet waste, yard waste, litter, debris, sediment, etc;

j. Restaurant or food processing facility wastes such as grease, floor mat and trash bin wash water, food waste, etc.

7. The Principal Permittee shall, on or before July 1, 2002, either establish a program of restaurant inspections or amend the Orange County Public Health Code to require that County inspections at restaurants address:

   a. Oil and grease residue to verify that it is not poured onto a parking lot, street or adjacent catch basin;

   b. Dumpster areas to verify that the area is clean, the dumpster lid is closed, the dumpster is not filled with liquid, and the dumpster has not been washed out;

   c. Parking lot, alley, sidewalk and street areas to verify that floormats, filters and garbage containers are not washed in those areas and that no washwater is poured in those areas;

   d. Parking lot area to verify that it is cleaned by sweeping, not by hosing down and that the facility operator uses dry methods for spill cleanup; and,

   e. Include an inspection of existing grease traps to ensure adequate capacity and proper maintenance.

VII. ILLEGAL/ILLICIT CONNECTIONS; LITTER, DEBRIS AND TRASH CONTROL

1. The permittees shall continue to prohibit all illicit and illegal connections to the MS4s through their ordinances, inspections, and monitoring programs. If routine inspections or dry weather monitoring indicate any illicit or illegal connections, they shall be investigated and eliminated or permitted within 120 days of discovery and identification.

2. All reports of spills, leaks, and/or illegal dumping shall be promptly investigated and, where appropriate, reported to the Executive Officer within 24 hours (those incidents which may have an immediate threat to human health or the environment) by phone or e-mail, with a written report within 5 days. At a minimum, all sewage spills above 1,000 gallons and all reportable quantities of hazardous waste spills as per 40CFR 117 and 302 shall be reported within 24 hours and all other spill incidents shall be included in the annual report. The permittees may propose a reporting program, including reportable incidents and quantities, jointly with other agencies such as the County Health Care Agency for approval by the Executive Officer.

3. The permittees shall continue to implement appropriate control measures to reduce and/or to eliminate the discharge of trash and debris to waters of the U.S. These control measures shall be reported in the annual report.

4. By July 1, 2003, the permittees shall review their litter/trash control ordinances to determine the need for any revision. The permittees are encouraged to characterize trash, determine its main source(s), and develop and implement appropriate BMPs to control trash in urban runoff. The findings of this review shall be included in the annual report for 2002-2003.

5. By July 1, 2003, the permittees shall determine the need for any additional debris control measures. The findings shall be included in the annual report for 2002-2003.

VIII. MUNICIPAL INSPECTIONS OF CONSTRUCTION SITES

1. Each permittee shall develop by May 1, 2002, an inventory of all construction sites within its jurisdiction, regardless of whether the construction site is subject to the California statewide General NPDES Permit for Storm Water Discharges Associated with Construction Activities (General Permit), or other individual NPDES permit. This database must be updated prior to each rainy season thereafter. This inventory must be maintained in a computer-based database system and must include relevant information on site ownership, General Permit WDID # (if any), size, location, etc. Inclusion of a Geographical Information System (GIS) is recommended but not required.
2. To establish priorities for inspection requirements under this Order, the permittees shall prioritize construction sites within their jurisdiction as a high, medium, or low threat to water quality. Evaluation of construction sites should be based on such factors as soil erosion potential, project size, proximity and sensitivity of receiving waters and any other relevant factors. But at a minimum, a high priority shall be assigned to: sites over 50 acres; sites tributary to Clean Water Act section 303(d) waters listed for sediment or turbidity impairments; and, sites directly adjacent to or that discharge in the vicinity of an area defined by the Ocean Plan as an Area of Special Biological Significance.
3. Each permittee shall conduct construction site inspections for compliance with its ordinances (grading, Water Quality Management Plans, etc.), permits (construction, grading, etc.) and this Order. Inspections shall include a review of erosion control and BMP implementation plans and an evaluation of the effectiveness and maintenance of the BMPs identified. Inspection frequency will, at a minimum, include the following:
   a. During the wet season (i.e., October 1 through April 30 of each year), all high priority sites are to be inspected, in their entirety once a month. All medium and low priority sites are to be inspected at least twice during the wet season. When BMPs or BMP maintenance is deemed inadequate or out of compliance, an inspection frequency of once every week will be maintained until BMPs and BMP maintenance are brought into compliance. During the 2001-2002 wet season, prior to the development of the inventory database, all construction sites must be visited at least twice. If the site is deemed out of compliance, an inspection frequency adequate to bring the site into compliance must be maintained.
   b. During the dry season (i.e., May 1 through September 30 of each year), all construction sites shall be inspected at a frequency sufficient to ensure that sediment and other pollutants are not entering receiving waters or the local storm drain system and that unauthorized, non-storm water discharges are prevented.
   c. Information, including at a minimum, inspection dates, inspectors present and the results of the inspection must be maintained in the database identified in Item 1, above, or must be linked to that database. A copy of this database must be provided to the Regional Board with each annual report.

4. Each permittee shall enforce its ordinances and permits at all construction sites as necessary to maintain compliance with this Order. Sanctions for non-compliance must include: monetary penalties, bonding requirements and/or permit denial or revocation. Sanctions must, to the extent possible, recover at a minimum, any cost-savings realized by non-implementation or non-maintenance of BMPs.

5. Each permittee shall provide oral or email notification to the Santa Ana Regional Water Quality Control Board of non-compliant sites, within their jurisdiction, that are determined to pose a threat to human or the environment within 24 hours. Following oral notification, a written report must be submitted to the Santa Ana Regional Water Quality Control Board within 5 days, detailing the nature of the non-compliance, any corrective action taken by the site owner, other relevant information (e.g., past history of non-compliance, environmental damage resulting from the non-compliance, site owner responsiveness) and the type of enforcement that will be carried out by the permittee. Further, incidences of non-compliance shall be recorded along with the information noted in the written report and the final outcome/enforcement for the incident in the database identified in Items 1 and 3c, above, or must be linked to these databases.

6. It is anticipated that many of the inspections detailed above, can and will be carried out by inspectors currently conducting inspections for the permittees (i.e., grading, building, code enforcement, etc.), during their normal duties. The inspectors responsible for ensuring compliance at construction sites must be trained in and have an understanding of: federal, state and local water quality laws and regulations as they apply to construction and grading activities; the potential effects of construction and urbanization on water quality; and, implementation and maintenance of erosion control BMPs and sediment control BMPs and the applicable use of both. Each permittee must have adequately trained its inspection staff by March 31, 2002, and on an annual basis, prior to the rainy season, thereafter. Training programs should be coordinated with the Santa Ana Regional Water Quality Control Board and prior notification of training must be received by Regional Board staff. . New hires or transfers that will be performing construction inspections for the permittees must be trained within one month of starting inspection duties.

IX. MUNICIPAL INSPECTIONS OF INDUSTRIAL/COMMERCIAL FACILTIES

1. Each permittee shall develop by July 1, 2003, an inventory of all industrial and commercial facilities within its jurisdiction, regardless of whether the facility is subject to the California statewide General NPDES Permit for Storm Water Discharges Associated with Industrial Activities (General Industrial Permit), or other individual NPDES permit. This database must be updated on an annual basis. This inventory must be maintained in a computer-based database system and must include relevant information on ownership, SIC code(s), General Industrial Permit WDID # (if any), size, location, etc. Inclusion of a Geographical Information System (GIS) is recommended but not required.

2. To establish priorities for inspection requirements under this Order, the permittees shall prioritize industrial and commercial facilities within their jurisdiction as a high, medium, or low threat to water quality. As a starting point, the number of high and medium priority sites should constitute at least 30% of all industrial and commercial facilities within a permittee's

jurisdiction. Evaluation of these facilities should be based on such factors as type of industrial activities (SIC codes), materials or wastes used or stored outside, pollutant discharge potential, facility size, proximity and sensitivity of receiving waters and any other relevant factors. But at a minimum, a high priority shall be assigned to: facilities subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA); sites tributary to Clean Water Act section 303(d) waters that use or generate pollutants for which the water body is listed as impaired; facilities requiring coverage under the General Industrial Permit; facilities which perform vehicle (auto/bus/truck, airplane, boat, equipment) repair, maintenance and fueling; mobile cleaning (carpet, auto, pressure/steam) services; landscape and hardscape (masonry, concrete mixing/pouring/cutting) services; facilities with a high potential or history of unauthorized, non-storm water discharges and, facilities directly adjacent to or that discharge in the vicinity of an area defined by the Ocean Plan as an Area of Special Biological Significance.

3. Each permittee shall conduct industrial/commercial facility inspections for compliance with its ordinances, permits and this Order. Inspections shall include a review of material and waste handling and storage practices, pollutant control BMP implementation and maintenance and evidence of past or present unauthorized, non-storm water discharges.

4. After July 1, 2003, all high priority sites are to be inspected at least on an annual basis; all medium priority sites are to be inspected at least once, every two years; and, all low priority sites are to be inspected at least once per permit cycle. In the event that inappropriate material or waste handling or storage practices are observed, or there is evidence of past or present unauthorized, non-storm water discharges, an inspection frequency adequate to bring the site into compliance must be maintained (at a minimum, once a month). Once compliance is achieved, a minimum inspection frequency of once every four months will be maintained for the next calendar year.

5. By July 1, 2003, all high priority sites are to have been inspected at least once.

6. Information, including at a minimum, inspection dates, inspectors present and the results of the inspection must be maintained in the database identified in Item 1, above, or must be linked to that database. A copy of this database must be provided to the Regional Board with each annual report.

7. Each permittee shall enforce its ordinances and permits at all industrial and commercial facilities and job sites as necessary to maintain compliance with this Order. Sanctions for non-compliance must include: monetary penalties, bonding requirements and/or permit denial or revocation. Sanctions must at a minimum recover any cost-savings realized by non-implementation or non-maintenance of BMPs.

8. Each permittee shall provide oral or email notification to the Santa Ana Regional Water Quality Control Board of non-compliant facilities, within their jurisdiction, that are determined to pose a threat to human or the environment within 24 hours. Following oral notification, a written report must be submitted to the Santa Ana Regional Water Quality Control Board within 5 days, detailing the nature of the non-compliance, any corrective action taken by the site owner, other relevant information (e.g., past history of non-compliance, environmental damage resulting from the non-compliance, facility owner

responsiveness) and the type of enforcement that will be carried out by the permittee. Further, incidences of non-compliance shall be recorded along with the information noted in the written report and the final outcome/enforcement for the incident in the database identified in Items 1 and 3c, above, or must be linked to these databases.

9. It is anticipated that many of the inspections detailed above, can and will be carried out by inspectors currently conducting inspections for the permittees (i.e., code enforcement, public health, fire authority, etc.), during their normal duties. The inspectors responsible for ensuring compliance at industrial and commercial facilities must be trained in and have an understanding of: federal, state and local water quality laws and regulations as they apply to industrial and commercial activities; the potential effects of industrial discharge and urbanization on water quality; and, implementation and maintenance of pollutant control BMPs. Each permittee must have adequately trained their inspection staff by March 31, 2002, and on an annual basis thereafter. Training programs should be coordinated with the Santa Ana Regional Water Quality Control Board and prior notification of training must be received by Regional Board staff. New hires or transfers that will be performing industrial and commercial inspections for the permittees must be trained within one month of starting inspection duties.

X. CRITERIA FOR ACCEPTING RUNOFF INTO THE MS4s

1. The permittees shall ensure that pollutants in runoff from municipal construction, industrial, and other activities have been reduced to the maximum extent practicable before entering the MS4s. Unless the permittees have approved down stream regional treatment in place.
2. The permittees shall also ensure that the discharges from other industrial and construction sites entering the MS4 systems meet the technology-based standards.

XI. SEWAGE SPILLS, INFILTRATION INTO MS4 SYSTEMS FROM LEAKING SANITARY SEWER LINES, AND SEPTIC SYSTEM FAILURES

1. By July 1, 2003, the principal permittee, in coordination with the local sewering agencies, shall propose to develop guidelines to determine and control the impact of infiltration from leaking sanitary sewer systems on urban runoff, including storm water, quality. At a minimum, these guidelines shall include a mechanism to address exfiltration from all sanitary sewer lines that are 24 inches or larger and a 24 hour access procedure to all storm water facilities within their jurisdiction. The Executive Officer will request the local sewering agencies the need to work cooperatively with the permittees in developing these guidelines.
2. By July 1, 2003, the permittees whose jurisdictions have 50 or more septic tank sub-surface disposal systems in use shall identify with the appropriate governing agency a mechanism to determine the effect of septic system failures on storm water quality and a mechanism to address such failures.
3. The Executive Officer will request the local sewering agencies to take the lead and develop, by no later that July 1, 2003, in cooperation with the principal permittee, a unified response guidance to respond to any sewage spills that may have an impact on receiving water

quality. The principal permittee shall collaborate with the local sewering agencies on the development of the unified response guidance.

4. By July 1, 2003, the principal permittee shall review the permittees' current oversight programs for portable toilets to determine the need for any revision.

XII. NEW DEVELOPMENT (INCLUDING SIGNIFICANT RE-DEVELOPMENT)

A. GENERAL REQUIREMENTS:

1. By July 1, 2002, the permittees shall establish a mechanism to ensure (prior to issuance of any local permits or other approvals) that all construction that are required to obtain coverage under the State's General Storm Water Permit for construction sites have filed with the State Board a Notice of Intent to be covered by the relevant General Permit. The permittees shall also establish a mechanism (by July 1, 2002) to ensure that local permits for all proposed construction sites and industrial facilities are conditioned upon proof of obtaining coverage under the State's General Permit.
2. Each permittee shall review and revise the DAMP and implement any changes in the DAMP, as necessary in order to require construction site dischargers to reduce pollutants in runoff from construction sites during all construction phases. At a minimum, the DAMP shall address:
   a. Pollution Prevention
   b. Grading Ordinance
   c. Filing of a Notice of Intent (NOI) prior to grading
   d. Enforcement of Construction Sites requirements
   e. Reporting of Non-compliance Sites
   f. Implementation of WQMP
3. Each permittee shall review and revise the DAMP and implement any changes in the DAMP, as necessary in order to require industrial site dischargers to reduce pollutants in runoff from new and existing industrial sites. At a minimum the DAMP shall address:
   a. Pollution Prevention
   b. Source Identification
   c. BMP Implementation
   d. Monitoring of Industrial Sites
   e. Inspection of Industrial Sites
   f. Enforcement of Industrial Sites
   g. Reporting of Non-Compliant Industrial Sites
4. Each permittee shall minimize the short and long-term impacts on receiving water quality from new developments and re-developments. In order to reduce pollutants and

runoff flows from new developments and re-developments to the maximum extent practicable, permittees shall at a minimum:

a. Review General Plan/CEQA Processes

b. Modify the Project Approval Process

c. Conduct Public/Business Education

5. Within 120 days of the issuance of this order, the permittees shall review their planning procedures and CEQA document preparation processes to ensure that urban runoff-related issues are properly considered and addressed. As necessary, these processes shall be revised by that date to include storm water requirements including appropriate mitigation measures. These may include revising the General Plan, modifying the project approval processes, including a section on urban runoff related water quality issues in an addendum CEQA checklist, and conducting training for project proponents. The actions taken by the permittees shall be reported to the Regional Board by March 1, 2002. The following potential impacts must be identified and addressed during CEQA review:

   a. Potential Impact of project construction on storm water runoff.

   b. Potential Impact of projects post-construction activity on storm water runoff.

   c. Potential for discharge of storm water from areas from material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas.

   d. Potential for discharge of storm water to impair the beneficial uses of the receiving waters or areas that provide water quality benefit.

   e. Potential for the discharge of storm water to cause significant harm on the biological integrity of the waterways and water bodies.

   f. Potential for significant changes in the flow velocity or volume of storm water runoff that can cause environmental harm.

   g. Potential for significant increases in erosion of the project site or surrounding areas.

6. By July 1, 2004, the permittees shall incorporate watershed protection principles and policies into the General Plan or related documents (such as Development Standards, Zoning Codes, Conditions of Approval, Development Project Guidance) and provide proof of such action in the 2004 annual report. These principles and policies shall include, but not be limited to the following considerations:

   a. Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels; minimize impacts from storm water and urban runoff on the biological integrity of natural drainage systems and water bodies;

   b. Minimize changes in hydrology and pollutant loading; require incorporation of controls, including structural and non-structural BMPs, to mitigate the projected increases in pollutant loads and flows; ensure that post-development runoff rates and

velocities from a site maintain or reduce pre-development downstream erosion, and protect stream habitat; minimize the quantity of storm water directed to impermeable surfaces and the MS4s; maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;

c. Preserve wetlands, riparian corridors, and buffer zones; establish reasonable limits on the clearing of vegetation from the project site;

d. Investigate the feasibility & effectiveness of water quality wetlands, biofiltration swales, watershed-scale retrofits, etc. (consultation should be made with the Orange County Vector Control District to ensure that these systems are designed to minimize the potential for mosquito breeding);

e. Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site;

f. Establish development guidelines for areas particularly susceptible to erosion and sediment loss;

7. Each permittee shall provide the Regional Board with the draft amendment or revision when a pertinent General Plan element or the General Plan is noticed for comment in accordance with Govt. Code § 65350 et seq.

8. By July 1, 2002, the permittees shall review and revise their current grading/erosion control ordinances in order to reduce erosion caused by new development or significant re-development projects.

9. The permittees shall, through conditions of approval, ensure proper maintenance and operation of any permanent flood control structures installed in new developments. The parties responsible for the maintenance and operation of the facilities, and a funding mechanism for operation and maintenance shall be identified prior to approval of the project.

10. The principal permittee shall submit as a part of the 2002-2003 annual report, a proposal for a study to evaluate the effectiveness of a group of selected BMPs for controlling erosion during new development. This proposal shall include details of the new development project site, the BMPs selected for the study, and a proposed schedule to complete the study by the end of this permit term.

11. The permittees shall continue to implement the new development BMPs (DAMP, Appendix G) and BMPs for public works construction (DAMP, Appendix H).

12. Within six months of adoption of this order, the permittees shall review their DAMP to determine the need for:

    a. Re-establishing the New Development Task Force

    b. Establishing a Water Quality Plan verification program

    c. Revising their grading and erosion control ordinances

B. MODEL WATER QUALITY MANAGEMENT PLAN (WQMP) FOR URBAN RUNOFF (FOR NEW DEVELOPMENT/SIGNIFICANT REDEVELOPMENT):

1. By July 1, 2003, the permittees shall review their existing BMPs for New Developments (Appendix G of the DAMP) and submit for review and approval by the Executive Officer, a revised model WQMP for urban runoff from new developments/significant re-developments for the type of projects listed below:

   a. All significant re-development projects, where significant re-development is defined as the addition of 5,000 or more square feet of impervious surface on an already developed site. This includes additional buildings and/or structures, extension of existing footprint of a building, construction of parking lots, etc.

   b. Home subdivisions of 10 units or more. This includes single family residences, multi-family residence, condominiums, apartments, etc.

   c. Commercial developments of 100,000 square feet or more. This includes non-residential developments such as hospitals, educational institutions (the permittees may lack authority to regulate some of these developments), recreational facilities, mini-malls, hotels, office buildings, warehouses, and light industrial facilities.

   d. Automotive repair shops (with SIC codes 5013, 5014, 5541, 7532-7534, 7536-7539).

   e. Restaurants where the land area of development is 5,000 square feet or more.

   f. All hillside developments on10,000 square feet or more which are located on areas with known erosive soil conditions or where the natural slope is twenty-five percent or more.

   g. Developments of 2,500 square feet of impervious surface or more adjacent to (within 200 feet) or discharging directly into environmentally sensitive areas such as areas designated in the Ocean Plan as areas of special biological significance or waterbodies listed on the CWA Section 303(d) list of impaired waters.

   h. Parking lots of 5,000 square feet or more exposed to storm water. Parking lot is defined as land area or facility for the temporary storage of motor vehicles.

   i. Retail gasoline outlets.

2. The permittees are encouraged to include in the model WQMP the development and implementation of regional and/or watershed management programs that address runoff from new development and significant re-development. The model WQMP shall include BMPs for source control, pollution prevention, and/or structural treatment BMPs. For all structural treatment controls, the model WQMP shall identify the responsible party for maintenance of the treatment systems, and a funding source or sources for its operation and maintenance. The goal of the model WQMP is to develop and implement practicable programs and policies to ensure that urbanization does not significantly change the hydrology for the site, increase the urban runoff flow rates or velocities or increase the pollutant loads. This goal may be achieved through watershed-based structural treatment controls, in combination with site-specific BMPs. The model

WQMP shall reflect consideration of the following goals, which may be addressed through on-site-and/or watershed-based BMPs.

a. The pollutants in post-development runoff shall be reduced to the maximum extent practicable.

b. The discharge of any listed pollutant in levels exceeding pre-development levels is prohibited to impaired waterbodies on the 303(d) list. This requirement may be met by maintaining the total load of the listed pollutant to pre-development levels.

3. Until the model WQMP is approved by the Executive Officer, structural BMPs will be required for all new development and significant redevelopment[4]. Minimum structural BMPs must either be sized to comply with one of the following numeric sizing criteria or be deemed by the Principal Permittee to provide equivalent or superior treament:

A. Volume

Volume–based BMPs shall be designed to infiltrate, filter, or treat either:

1. The volume of runoff produced from a 24-hour, 85th percentile storm event, as determined from the local historical rainfall record; or
2. The volume of annual runoff produced by the 85th percentile, 24-hour rainfall event, determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998); or
3. The volume of annual runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/Commercial (1993); or
4. The volume of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile, 24-hour runoff event;

OR

B. Flow

Flow-based BMPs shall be designed to infiltrate, filter, or treat either:

1. The maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour; or
2. The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or

[4] Where new development is defined as projects for which tentative tract map approval was not received by September 26, 2001 and new redevelopment is defined as projects for which construction has not commenced by the adoption date of this Order.

3. The maximum flow rate of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.

C. Groundwater Protection

Any structural infiltration BMPs shall meet the following minimum requirements:

1. Use of structural infiltration treatment BMPs shall not cause or contribute to an exceedance of groundwater water quality objectives.
2. Source control and pollution prevention control BMPs shall be implemented to protect groundwater quality.
3. Structural infiltration treatment BMPs shall not cause a nuisance, including odor, vectors, or pollution.

The permittees may propose any equivalent sizing criteria for treatment BMPs or other controls that will achieve greater or substantially similar pollution control benefits. In the absence of an approved sizing criterion, the permittees shall implement the above stated sizing criteria. If the BMP is not technically feasible or if the cost of BMP implementation greatly outweighs the pollution control benefits, the permittees may grant a waiver of the numeric sizing criteria. The permittees may propose to establish an urban runoff fund to be used for urban water quality improvement projects within the same watershed that is funded by contributions from developers granted waivers. If it is determined by the Regional Board that new development or redevelopment projects are approved with BMPs that do not meet the criteria set forth in subsection VII.B., this Order may be reopened to include additional requirements.

XIII. PUBLIC EDUCATION AND OUTREACH

1. The permittees shall continue to implement the public education efforts already underway and shall implement the most effective elements of the comprehensive public and business education strategy contained in the Report of Waste Discharge/DAMP. By July 1, 2002, the permittees shall complete a public awareness survey to determine the effectiveness of the current public and business education strategy and provide a future action plan.
2. When feasible, the permittees shall participate in joint outreach with other programs including, but not limited to, the State of California Storm Water Quality Task Force, Caltrans, and other municipal storm water programs to ensure that a consistent message on storm water pollution prevention is disseminated to the public. The permittees shall sponsor or staff a storm water table or booth at community, regional, and/or countywide events to distribute public education materials to the public. Each permittee shall participate in at least one event per year.
3. By December 1, 2001, the permittees shall establish a Public Education Committee to provide oversight and guidance for the implementation of the public education program. The Public Education Committee shall meet at least twice per year. The Public Education

Committee shall make recommendations for any changes to the public and business education program. The goal of the public and business education program shall be to target 100% of the residents including businesses, commercial and industrial establishments. Through use of local print, radio and television, the permittees must ensure that the public and business education program makes a minimum of 10 million impressions per year. By July 1, 2002, the Public Education Committee shall develop BMP guidance for restaurants, automotive service centers, and gasoline service stations for the industrial facility inspectors to distribute to these facilities during inspections. Further, for restaurant, automotive service centers, and gasoline service station corporate chains, information is to be developed that will be provided to corporate environmental managers during outreach visits that will take place twice, during the permit term.

4. Within six months of adoption of this order, the permittees shall develop public education materials to encourage the public to report (including a hotline line number and web site to report) illegal dumping and unauthorized, non-storm water discharges from residential, industrial, construction and commercial sites into public streets, storm drains and other waterbodies, clogged storm drains, faded or missing catch basin stencils and general storm water and BMP information. This hotline and web site will be included in the public and business education program and will be listed in the governmental pages of all regional phone books.
5. By July 1, 2003, the permittees shall develop BMP guidance for the control of those potentially polluting activities not otherwise regulated by any agency including guidelines for the household use of fertilizers, pesticides, herbicides, and other chemicals, guidance for mobile vehicle maintenance, carpet cleaners, commercial landscape maintenance, and pavement cutting. These guidance documents shall be distributed to the public, trade associations, etc., through participation in community events, trade association meetings, and/or mail.
6. By July 1, 2003, the permittees shall conduct an evaluation to determine the best method of establishing a mechanism(s) for providing educational and General Industrial Permit materials businesses within their jurisdiction.

XIV. MUNICIPAL FACILITIES/ACTIVITIES

1. Each permittee shall implement the recommendations in the Environmental Performance Report to ensure that public agency facilities and activities do not cause or contribute to a pollution or nuisance in receiving waters. By July 1 of each year, the permittees shall review all their activities and facilities to determine the need for any revisions to the Environmental Performance Reports. The annual report shall include the findings of this review and a schedule for any needed revisions. All revisions should consider a pollution prevention strategy to ensure that the public agency facilities and/or activities that are currently not required to obtain coverage under the State's general storm water permits are not sources of pollutants into the waters of the U.S.
2. In accordance with the prioritization developed by the permittees, the permittees shall complete an assessment of their flood control facilities to evaluate opportunities to configure

and/or to reconfigure channel segments to function as pollution control devices and to optimize beneficial uses. These modifications may include in-channel sediment basins, bank stabilization, water treatment wetlands, etc.

3. By July 1, 2002, the principal permittee shall develop and distribute model maintenance procedures for public agency activities such as street sweeping, catch basin stenciling, drainage facility maintenance, etc. This shall be reported in the 2001-2002 annual report.
4. By July 1, 2002, the principal permittee shall develop and distribute BMP guidance for public agency and contract field operations and maintenance staff to provide guidance in appropriate pollution control measures, how to respond to spills and reports of illegal discharges, etc. This shall be reported in the 2001-2002 annual report.
5. At least on an annual basis, the principal permittee shall provide training to the public agency staff and to contract field operations staff on fertilizer and pesticide management, model maintenance procedures, implementation of environmental performance reporting program and other pollution control measures. Each permittee shall attend at least three of these training sessions during the five year term of this permit (from 2001 to 2006).
6. By July 1, 2002, the principal permittee shall develop a model maintenance procedure for drainage facilities. This shall be included in the 2001-2002 annual report. Each permittee shall inspect and maintain at least 80% of its drainage facilities on an annual basis, with 100% of the facilities included in a two-year period, using the model maintenance procedures developed by the principal permittee. This shall be included in the annual report.
7. By July 1, 2002, the permittees shall evaluate the applicability of the Environmental Performance Program to municipal maintenance contracts, contract for field maintenance operations, and leases. This shall be included in the 2001-2002 annual report.

XV. MUNICIPAL CONSTRUCTION PROJECTS/ACTIVITIES

1. This order authorizes the discharge of storm water runoff from construction projects that may result in land disturbance of five (5) acres or more (or less than five acres, if it is part of a larger common plan of development or sale which is five acres or more) that are under ownership and/or direct responsibility of any of the permittees. All permittee construction activities shall be in accordance with DAMP, Appendix H.
2. Prior to commencement of construction activities, the permittees shall notify the Executive Officer of the Regional Board of the proposed construction project. Upon completion of the construction project, the Executive Officer shall be notified of the completion of the project.
3. The permittees shall develop and implement a storm water pollution prevention plan (SWPPP) and a monitoring program that is specific for the construction project prior to the commencement of any of the construction activities. The SWPPP shall be kept at the construction site and released to the public and/or Regional Board staff upon request.
4. The SWPPP and the monitoring program for the construction projects shall be consistent with the requirements of the latest version of the State's General Construction Activity Storm Water Permit.

5. The permittees shall give advance notice to the Executive Officer of the Regional Board of any planned changes in the construction activity, which may result in non-compliance with the latest version of the State's General Construction Activity Storm Water Permit.
6. All other terms and conditions of the latest version of the State's General Construction Activity Storm Water Permit shall be applicable.

XVI. SUB-WATERSHEDS AND TMDL IMPLEMENTATION

1. The permittees shall to maximum extent practicable, meet the following target load allocations for nutrients in urban runoff by implementing the BMPs contained in Appendix N (Section 12) and in accordance with the May 18, 1999, Water Code Section 13267 letter from the Executive Officer., as approved by the Executive Officer.

(This section intentionally left blank.)

Table 1. Seasonal Load Allocations of Total Nitrogen for the Newport Bay Watershed

Nutrient TMDL	1990-1997 Loading	2002 Allocation[6]	2002 Summer Allocation (Apr-Sept)[6]	2007 Allocation[6]	2007 Summer Allocation (Apr-Sept)[6]	2012 Allocation[6]	2012 Winter Allocation (Oct-Mar)[5, 6, 9]
Newport Bay Watershed	lbs/year TN[2]	lbs/day TN[8]	lbs/season TN	lbs/day TN[8]	lbs/season TN	lbs/day TN[8]	lbs/season TN
Wasteload Allocation							
Urban runoff	277,131[4]		20,785		16,628		55,442
			5 year target		10 year target		15 year target

1 TIN = (NO3+NH3).
2 TN = (TIN + Organic N).
3 1990-1997 annual average (summer loading and winter loading).
4 Estimated annual average (summer and winter loading).
5 Total nitrogen winter loading limit applies between October 1 and March 31 when the mean daily flow rate at San Diego Creek at Campus Drive is below 50 cubic feet per second (cfs), and when the mean daily flow rate in San Diego Creek at Campus Drive is above 50 cubic feet per second (cfs), but not as the result of precipitation.
6 Compliance to be achieved no later than this date. The Regional Board may require earlier compliance with these targets when it is feasible and reasonable.
7 Daily load limit applies upon commencement of discharge.
8 Lbs/day TN (monthly average).
9 Assumes 67 non-storm days.

Table 2. Annual Total Phosphorous Load Allocations For The Newport Bay Watershed

	2002 Allocation lbs/year TP[1]	2007 Allocation lbs/year TP[1]
TMDL	86,912	62,080
Urban areas	4,102	2,960

1 Compliance to be achieved no later than this date. The Regional Board may require earlier compliance with these targets when it is feasible and reasonable.

Table 3. Annual Total Nitrogen Load Allocations For San Diego Creek, Reach 2 During Non-Storm Conditions.[1]

	2012 Allocation lbs/day TN[2]
TMDL	14 lbs/day (TN)
Waste Load Allocation (Urban runoff)	5.5 lbs/day (TN)

[1] Total nitrogen loading limit applies when the mean daily flow rate at San Diego Creek at Culver Drive is below 25 cubic feet per second (cfs), and when the mean daily flow rate in San Diego Creek at Culver Drive is above 25 cubic feet per second (cfs), but not as the result of precipitation.

[2] Compliance to be achieved no later than this date. The Regional Board may require earlier compliance with these targets when it is feasible and reasonable.

2. The permittees shall , to the maximum extent practicable, meet the following target load allocations for sediment in urban runoff by implementing the BMPs contained in Appendix N of the DAMP and the(report title to be added) submitted by the permittees in response to the January 13, 1999, Water Code Section 13267 letter from the Executive Officer., as approved by the Executive Officer.
    a. The load allocations for sediment discharges to Newport Bay from urban areas shall not exceed 2,500 tons per year, implemented as a 10-year running annual average.
    b. The load allocations for sediment discharges to San Diego Creek and its tributaries from urban areas shall not exceed 2,500 tons per year, implemented as a 10-year running annual average.
3. The permittees shall revise Appendix N of the DAMP to include implementation measures and schedules for further studies related to the TMDL for fecal coliform in Newport Bay, as set fourth in the (report title to be added) submitted by the permittees in response to the January 7, 2000, Water Code Section 13267 letter from the Executive Officer, as approved by the Executive Officer.
4. This order may be reopened to include additional requirements based on new or revised TMDLs and/or for failure to implement the provisions of Section XIII.

XVII. PROGRAM MANAGEMENT/DAMP REVIEW

1. By July 1 of each year, the permittees shall evaluate the DAMP to determine whether any revisions are necessary in order to reduce pollutants in MS4 discharges to the maximum extent practicable. At a minimum, the first annual review after adoption of this order shall include the following:
    a. Review of the formal training needs of municipal employees
    b. Review of coordinating meeting/training for the designated NPDES inspectors.
2. The annual report shall include the findings of this review and a schedule for any needed revisions or a copy of the amended DAMP with the proposed changes.

3. The permittees shall modify the DAMP, at the direction of the Regional Board Executive Officer, to, as necessary, incorporate additional provisions. Such provisions may include regional and watershed-specific requirements and/or waste load allocations developed and approved pursuant to the TMDL process.
4. The Permittee Committee shall meet at least six times a year to discuss issues related to permit implementation and regional and statewide issues. Each permittee's designated representative or a designated alternate should attend at least 75% of these meetings.

XVIII. FISCAL RESOURCES

1. The permittees shall prepare and submit a unified fiscal analysis to the Executive Officer of the Regional Board. The fiscal analysis shall be submitted with the Annual Report document no later than November 15th of each year and shall, at a minimum, include the following:
    a. Each permittee's expenditures for the previous fiscal year,
    b. Each permittee's budget for the current fiscal year,
    c. A description of the source of funds, and
    d. Each permittee's estimated budget for the next fiscal year.

XIX. PROVISIONS

1. The purpose of this Order is to require the implementation of best management practices to the maximum extent practicable, in order to support reasonable further progress towards attainment of water quality objectives.

   Permittees shall demonstrate compliance with all the requirements in this order and specifically with Section III. Discharge Limitations and Section IV. Receiving Water Limitations, through timely implementation of their DAMP and any approved modifications, revisions, or amendments developed pursuant to this order. The DAMP, as included in the Report of Waste Discharge, including any approved amendments thereto, is hereby made an enforceable component of this order.
2. The permittees shall implement all elements of the DAMP. Where the dates in the DAMP are different than those of this order, the dates in this order shall prevail. Any proposed revisions to the DAMP shall be submitted with the Annual Report to the Executive Officer of the Regional Board for review and approval. All approved revisions to the DAMP shall be implemented as per the time schedules approved by the Executive Officer.
3. The permittees shall comply with Monitoring and Reporting Program No. 01-20, and any revisions thereto which is hereby made a part of this order including the Executive Officer is authorized to revise the Monitoring and Reporting Program and also to allow the permittees to participate in regional, statewide, national or other monitoring programs in lieu of or in addition to Monitoring and Reporting Program No. 01-20.

4. Upon approval by the Executive Officer of the Regional Board, all plans, reports and subsequent amendments required by this order shall be implemented and shall become an enforceable part of this order. Prior to approval by the Executive Officer, these plans, reports and amendments shall not be considered as an enforceable part of this order.
5. The permittees shall report to the Executive Officer of the Regional Board:
   a. Any enforcement actions and discharges of storm or non-storm water, known to the permittees, which may have an impact on human health or the environment,
   b. Any suspected or reported activities on federal, state, or other entity's land or facilities, where the permittees do not have any jurisdiction, and where the suspected or reported activities may be contributing pollutants to waters of the US.

   (Also see reporting requirements in Monitoring and Reporting Program No. 01-20)
6. Permit application and special NPDES program requirements contained in 40 CFR 122.21 (a), (b), (d)(2), (f), (p); 122.41 (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l); and 122.42 (c) are incorporated into this order by reference.

XX. PERMIT EXPIRATION AND RENEWAL

1. This order expires on June 1, 2006 and the permittees must file a Report of Waste Discharge (permit application) no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements. The Report of Waste Discharge shall, at a minimum, include the following:
   a. Any revisions to the Drainage Area Management Plan including, but not limited to, all the activities the permittees propose to undertake during the next permit term, goals and objectives of such activities, an evaluation of the need for additional source control and/or structural BMPs, any proposed pilot studies, etc.;
   b. Changes in land use and/or population including land use map updates; and
   c. Any significant changes to the storm drain systems, outfalls, detention or retention basins or dams, and other controls including map updates of the storm drain systems.
   d. Any new or revised program elements and compliance schedule(s) necessary to comply with Section IV of this order.
2. This Order may be modified, revoked or reissued prior to its expiration date for the following reasons:
   a. To address significant changes in conditions identified in the technical reports required by the Regional Board which were unknown at the time of the issuance of this order;
   b. To incorporate applicable requirements of statewide water quality control plans adopted by the State Water Resources Control Board or any amendments to the Basin Plan approved by the Regional Board, the State Board, and, if necessary, by the Office of Administrative Law; or

c. To comply with any applicable requirements, guidelines, or regulations issued or approved under the Clean Water Act, if the requirements, guidelines, or regulations contain different conditions or additional requirements than those included in this order.

d. To incorporate any requirements imposed upon the permittees through the TMDL process.

3. This order shall serve as a National Pollutant Discharge Elimination System (NPDES) Permit pursuant to Section 402 (p) of the Clean Water Act, or amendments thereto, and shall become effective ten days after the date of its adoption provided the Regional Administrator of the U. S. EPA has no objections. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

4. Order No. 96-31 is hereby rescinded.

I, Gerard Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on October 26, 2001.

_____

Gerard J. Thibeault
Executive Officer

Order No. 01-20
Attachment "C"
LIST OF OTHER ENTITIES WITH THE POTENTIAL TO DISCHARGE POLLUTANTS TO THE ORANGE COUNTY STORM WATER SYSTEM

California Department of Transportation (Caltrans), District 12
Southern Pacific Railroad
Atchison, Topeka & Santa Fe Railway Company
Seal Beach Naval Weapons Station
Seal Beach Naval Reserve Center, Los Alamitos
U. S. Marine Corps Air Station, El Toro
National Forest Service

Universities and Colleges

University of California, Irvine
California State University, Fullerton
Chapman College
Coastline College
Cypress College
Fullerton College
Irvine Valley College
Golden West College
Orange Coast College
Rancho Santiago College

School Districts

Anaheim Elementary School District
Anaheim Union High School District
Brea-Olinda Unified School District
Buena Park Joint Union High School District
Centralia Elementary School District
Cypress Elementary School District
Fountain Valley Union High School District
Fullerton Joint Union High School District
Garden Grove Unified School District
Huntington Beach Elementary School District
Huntington Beach Union High School District
Irvine Unified Union High School District
La Habra Joint Union High School District
Los Alamitos Unified School District
Lowell Joint Union High School District
Magnolia Elementary School District
Newport-Mesa Unified School District

Ocean View Union High School District
Orange Unified School District
Placentia Unified School District
Santa Ana Unified School District
Savanna Union High School District
Tustin Unified School District
Westminster Union High School District
Yorba Linda Joint Union High School District

Hospitals

Anaheim General Hospital
Brea Community Hospital
Chapman General Hospital
Children's Hospital of Orange County, Orange
Coastal Communities Hospital, Santa Ana
Fairview Hospital
FHP Hospital, Fountain Valley
Fountain Valley Regional Hospital and Medical Center
Hoag Hospital, Newport Beach
Kaiser Foundation Hospital, Anaheim
Orange County Community Hospital, Buena Park
Pacifica Community Hospital, Huntington Beach
Placentia Linda Community Hospital
Santa Ana Hospital and Medical Center
St. Joseph's Hospital, Orange
U.C. Irvine Medical Center
Vencor Hospital of Orange County, Westminster
Whittier Hospital and Medical Center, Buena Park

Water/Wastewater Agencies

Santa Ana Watershed Project Authority
Irvine Ranch Water District
Los Aliso Water District
El Toro Water District
San Bernardino County Flood Control District
Riverside County Flood Control & Water Conservation District
L.A. County Department of Public Works
County Sanitation Districts of Orange County
Orange County Water District
Metropolitan Water District

California Regional Water Quality Control Board
Santa Ana Region

Monitoring and Reporting Program No. 01-20
NPDES No. CAS618030

for
the County of Orange, Orange County Flood Control District,
and
Incorporated Cities of Orange County Within the Santa Ana Region
Areawide Urban Storm Water Runoff

I. GENERAL

1. Revisions of the monitoring and reporting program are appropriate to ensure that the permittees are in compliance with requirements and provisions contained in this order. Revisions may be made under the direction of the Executive Officer at any time during the term, and may include a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, or the number and size of samples collected.

2. The Executive Officer is authorized to allow the permittees to participate in statewide, national, or other monitoring programs in lieu of this monitoring program.

3. All sample collection, handling, storage, and analysis shall be in accordance with 40 CFR Part 136 or other methods approved by the Executive Officer.

4. The permittees are authorized to complement their monitoring data with other monitoring sources provided the monitoring conditions and sources are similar to those in the Santa Ana Watershed.

II. OBJECTIVES

The 1999 Water Quality Monitoring Program prioritized selected monitoring locations in Orange County based on a list of Critical Aquatic Resources (CARs) and "Warm Spots." This prioritization is based on an analysis of prior years' monitoring data and other available data. It is expected that data collection for this monitoring program will be completed by June 2003. The permittees also participate in the Regional Monitoring Program for San Diego Creek Nutrient TMDL and other regional monitoring programs such as the Southern California Coastal Water Research Project. The overall goal of these monitoring programs is to develop and support an effective watershed management program. The following are the major objectives:

1. To develop and support an effective municipal urban runoff and non-point source control program.

2. To define water quality status, trends, and pollutants of concern associated with urban storm water and non-storm water discharges and their impact on the beneficial uses of the receiving waters.

3. To characterize pollutants associated with urban storm water and non-storm water discharges and to assess the influence of urban land uses on water quality and the beneficial uses of receiving waters.

4. To identify significant water quality problems related to urban storm water and non-storm water discharges.

5. To identify other sources of pollutants in storm water and non-storm water runoff to the maximum extent possible (e.g., atmospheric deposition, contaminated sediments, other non-point sources, etc.)

6. To identify and prohibit illicit discharges.

7. To identify those waters, which without additional action to control pollution from urban storm water discharges cannot reasonably be expected to attain or maintain applicable water quality standards required to sustain the beneficial uses in the Basin Plan (TMDL monitoring).

8. To evaluate the effectiveness of existing municipal storm water quality management programs, including an estimate of pollutant reductions achieved by the structural and nonstructural BMPs implemented by the permittees.

9. To evaluate costs and benefits of proposed municipal storm water quality control programs to the stakeholders including the public.

The Regional Board recognizes that these objectives may not be attainable during this permit period and authorizes the Executive Officer to evaluate and to determine adequate progress toward meeting each objective.

III. MONITORING PROGRAM REQUIREMENTS

1. The permittees shall continue to implement the 1999 Water Quality Monitoring Program until development and implementation of other acceptable monitoring programs.

2. The permittees shall revise, by June 15, 2002, the 1999 Water Quality Monitoring Program to include, at a minimum, the following monitoring components:

   A. Mass Emissions Monitoring.

      (1) The principal permittee shall monitor mass emissions in order to: (a) estimate the total mass emissions from the MS4; (b) assess trends in mass emissions over time; and (c) to determine if the MS4 is contributing to exceedances of water quality objectives or beneficial uses, by comparing results to the California Toxics Rule (CTR), Basin Plan, Ocean Plan and/or other relevant standards.

(2) A minimum of seven mass emissions stations shall be placed at locations to include coastal outfalls at Huntington Harbor/Anaheim Bay, the coastline between Huntington Harbor and Newport Bay, Upper/Lower Newport Bay, the Crystal Cove Area of Special Biological Significance (ASBS), and north Orange County where surface flows have not been well-characterized (e.g., Fullerton Creek Channel, Carbon Creek Channel, or Coyote Creek). Additional locations should be based on large discharge volumes, large subwatershed drainage areas, and/or land use distribution.

(3) Autosamplers shall be programmed to collect representative samples from the first storm event and two more storm events during the rainy season. A minimum of three dry-weather samples shall also be collected. Samples from the first rain event each year shall be analyzed for the entire suite of priority pollutants. All samples must be analyzed for metals, pH, TSS, TOC, pesticides/herbicides, and constituents which are known to have contributed to impairment of local receiving waters. Dry weather samples should also include an analysis for oil and grease. Sediments associated with mass emissions should be analyzed for constituents of concern.

B. Estuary/Wetlands Monitoring

(1) The permittees shall monitor the Upper Newport estuary, Talbert Marsh, and Bolsa Chica wetlands areas to determine the effects of storm water and non-storm water runoff associated with increased urbanization on these systems.

(2) Monitoring locations shall include representative areas surrounding channel outfalls and areas away from channel outfalls. Sampling strategies shall be designed to enable the determination of storm water and non-storm water effects on sediment chemistry, toxicity, benthic communities, nutrient status, and spatial extent of sediment fate within the estuarine environment. Additionally, other indicators of biological integrity should be evaluated such as bird populations or endangered plant/animal species.

C. Water Column Toxicity Monitoring

(1) Analyses for toxicity to freshwater and marine species shall be performed on mass emissions samples to determine the impacts of storm water and non-storm water runoff on toxicity of receiving waters.

(2) *Ceriodaphnia dubia* and *Strongylocentrotus purpuratus* fertilization shall be used to evaluate toxicity on the sample from the first rain event plus one other wet weather sample and two dry weather samples.

(3) Criteria shall be identified which will trigger the initiation of Toxicity Identification Evaluations (TIEs) and Toxicity Reduction Evaluations (TREs).

D. Bacteriological/Pathogen Monitoring

(1) The permittees shall obtain monitoring data from other entities (such as the Orange County Health Care Agency) and/or monitor representative areas along the Orange County coastline as well as a minimum of six inland water bodies/channels for total coliform, fecal coliform, and Enterococcus in order to determine the impacts of storm water and non-storm water runoff on loss of beneficial uses to receiving waters. Inland monitoring stations shall be located to include channels/creeks which are currently impaired for pathogens.

(2) Where possible, data shall be obtained from monitoring efforts of Orange County Health Care Agency, POTWs, and/or other public or private agencies/entities. Monitoring shall be conducted directly by the permittees only to the extent that data gaps exist.

E. Bioassessment

(1) The permittees shall cooperate with the Southern California Coastal Water Research Project (SCCWRP) in efforts to evaluate the biological index approach for Southern California and to design a research project for developing an Index of Biological Integrity (IBI) for the region.

(2) The permittees shall coordinate with SCCWRP and the Regional Board to identify appropriate bioassessment station locations. Station selection and sampling scheme shall be identified in the revised Monitoring Program, and sampling should commence no later than October 2002.

F. Reconnaissance

(1) The permittees shall develop new reconnaissance strategies to identify and prohibit illicit discharges. Where possible, the use of GIS to identify geographic areas with a high density of industries associated with gross pollution (e.g. electroplating industries, auto dismantlers) and/or locations subject to maximum sediment loss (e.g. new development) may be used to determine areas for intensive monitoring efforts. Additionally, the permittees shall coordinate with the Regional Board to develop a comprehensive database to include all enforcement actions for storm water violations and unauthorized, non-storm water discharges, that can then be used to more effectively target reconnaissance efforts.

G. Land Use Correlations

(1) The permittees shall develop and implement strategies for determining the effects of land use on the quality of receiving waters. While it is recognized that a wide range of land uses exists across the region and within each subwatershed, one relationship that may be easily determined is the impact of development on sediment loading within receiving waters, since developed areas contribute relatively little sediment loading compared to areas under construction. Consequently, the permittees shall, at a minimum, analyze the impacts of increasing development and the conversion of agricultural land to the sediment loading of the Upper Newport Bay.

(2) Where possible, data shall be obtained from monitoring efforts of other public or private agencies/entities (e.g., Caltrans, The Irvine Company).

H. TMDL/303(d) Listed Waterbody Monitoring

The Permittees shall continue to participate in the Regional Monitoring Program for San Diego Creek Nutrient TMDL. In addition, strategies must be revised/developed to evaluate the impacts of storm water or non-storm water runoff on all impairments within the Newport Bay watershed and other 303(d) listed waterbodies. Since the 303(d) listing is dynamic, with new waterbodies and new impairments being identified over time, the permittees shall revise their monitoring plan to incorporate new information as it becomes available.

3. By June 15, 2002, the permittees shall develop and submit for approval of the Executive Officer, their revised Water Quality Monitoring Program, which should yield an integrated watershed-monitoring approach capable, to the maximum extent possible, of achieving the above-stated goals. In order to minimize cost and maximize benefits, it is highly recommended that this program be developed in cooperation with the SCCRWP, the Orange County Health Care Agency, neighboring coastal regions and/or other public or private agencies/entities. The development and implementation of the monitoring program shall be in accordance with the time schedules prescribed by the Executive Officer. At a minimum, the program shall include the following:

A. Uniform guidelines for quality control, quality assurance, data collection and data analysis that conform to current US EPA standards.

B. A mechanism for the collection, analysis and interpretation of existing data from local, regional or national monitoring programs. These data sources may be utilized to characterize different storm water sources; to determine pollutant generation, transport and fate; to develop a relationship between land use, development size, storm size and the event mean concentration of pollutants; to determine spatial and temporal variances in storm water quality and seasonal and other bias in the collected data; and to identify any unique features of the Santa Ana Watershed. The permittees are encouraged to use data from similar studies, if available.

C. A description of the monitoring program including:

(1) The number of monitoring stations;

(2) Monitoring locations within flood control channels, bays and estuaries, coastal areas, major outfalls, and other receiving waters;

(3) Environmental indicators (e.g., ecosystem, biological, habitat, chemical, sediment, stream health, etc.) chosen for monitoring;

(4) Parameters selected for field screening and for laboratory work;

(5) Total number of samples to be collected from each station, frequency of sampling during wet and dry weather, short duration or long duration storm events, type of samples (grab, 24-hour composite, etc.), justification for composite versus discrete sampling, type of sampling equipment, quality assurance/quality control procedures followed during sampling and analysis, analysis protocols to be followed (including sample preparation and maximum reporting limits), and identity and qualifications of laboratories performing analyses;

(6) A mechanism for analyzing the collected data and interpreting the results including protocols for handling of non-detects and 'outliers', an evaluation of the effectiveness of the management practices, and need for refinement of the management practices; and,

(7) A description of the responsibilities of all the participants in this program including cost sharing.

IV. REPORTING

1. All progress reports and proposed strategies and plans required by this order shall be signed by the principal permittee, and copies shall be submitted to the Executive Officer of the Regional Board under penalty of perjury.

2. The permittees shall submit an **ANNUAL PROGRESS REPORT** to the Executive Officer of the Regional Board and to the Regional Administrator of the U.S. EPA, Region 9, no later than November 15th, of each year. This progress report may be submitted in a mutually agreeable electronic format. At a minimum, annual progress report shall include the following:

A. A review of the status of program implementation and compliance (or non-compliance) with the schedules contained in this order;

B. An assessment of the effectiveness of control measures established under the illicit discharge elimination program and the Drainage Area Management Plan. The effectiveness may be measured in terms of how successful the program has been in eliminating illicit/illegal discharges and reducing pollutant loads in storm water discharges;

C. An assessment of any storm water management program modifications made to comply with Clean Water Act requirements to reduce the discharge of pollutants to the maximum extent practicable;

D. A summary and analysis of monitoring results from the previous year and any changes to the monitoring program for the following year;

E. A fiscal analysis progress report as described in Section V., Provision, 25., of this order;

F. A draft workplan which describes the proposed implementation of the DAMP for next fiscal year. The workplan shall include clearly defined tasks, responsibilities, and schedules for implementation of the storm water program and each permittee actions for the next fiscal year; and

G. Major changes in any previously submitted plans/policies.

3. The permittees shall be responsible for the submittal to the principal permittee of all required information/materials needed to comply with this order in a timely manner. All such submittals shall be signed by a duly authorized representative of the permittee under penalty of perjury.

(This section intentionally left blank.)

V. REPORTING SCHEDULE

All reports required by this order shall be submitted to the Executive Officer of the Regional Board in accordance with the following schedule:

ITEM	COMPLETION DATE	REPORT DUE DATE
Review planning procedures and CEQA document preparation processes	Within 120 days of issuance of this order	Nov 15, 2002
Establish Public Education Committee	December 1, 2001	Nov 15, 2002
Review DAMP	Within 6 months of adoption of this order	Nov 15, 2002
Develop public education materials including reporting hot-line and web site	Within 6 months of adoption of this order	Nov 15, 2002
Develop and update construction site, including site information, priority, and inspection information	May 1, 2002	Nov 15, 2002
Establish mechanism to ensure local permits for proposed construction sites and industrial facilities are conditioned upon proof of obtaining coverage under the state General Permit	July 1, 2002	Nov 15, 2002
Develop and distribute model maintenance procedures for public agency activities	July 1, 2002	Nov 15, 2002
Develop and distribute BMP guidance for public agency and contract field operations and maintenance staff	July 1, 2002	Nov 15, 2002
Develop model maintenance procedures for drainage facilities	July 1, 2002	Nov 15, 2002
Evaluate Environmental Performance Program applicability to municipal maintenance contracts, contract for field maintenance operations, and leases	July 1, 2002	Nov 15, 2002
Review and revise current grading/erosion control ordinances	July 1, 2002	Nov 15, 2002
Implementation Agreement Revision	July 1, 2002	Nov 15, 2002
Litter/Trash Control Ordinance review	July 1, 2002	Nov 15, 2002

Additional Debris Control Measures Determination	July 1, 2002	Nov 15, 2002
Complete Public Awareness Survey	July 1, 2002	Nov 15, 2002
Proposed Monitoring Program	June 15, 2002	June 15, 2002
Amend County Health Code to require that restaurant inspections include runoff and spill reduction aspects	July 1, 2002	Nov 15, 2002
Legal Authority & Enforcement Strategy Certification	November 1, 2003	Nov 15, 2003
Review effectiveness of ordinances in prohibiting discharges to MS4's as listed in Section 7.	July 1, 2003	Nov 15, 2003
Develop and update an industrial site database, including facility information, priority, and inspection information	July 1, 2003	Nov 15, 2003
Propose guidelines to determine and control impact of infiltration from leaking sanitary sewer systems	July 1, 2003	Nov 15, 2003
Propose mechanism to determine effect of septic system failures on storm water quality and a mechanism to address failures	July 1, 2003	Nov 15, 2003
Unified Response Guidance for Sewage Spills Impacting Receiving Water Quality	July 1, 2003	Nov 15, 2003
Review oversight of portable toilets to determine need for any revision	July 1, 2003	Nov 15, 2003
BMP Guidance for Restaurants, Automotive Service Centers, and Gasoline Service Stations, developed by Public Education Committee	July 1, 2002	Nov 15, 2002
BMP Guidance for Control of Potential Polluting Activities not otherwise regulated	July 1, 2003	Nov 15, 2003
Review existing BMPs for New Developments and Water Quality Management Plan to determine need for development of Water Quality Protection Plan	July 1, 2003	Nov 15, 2003

Propose study of erosion control BMPs for new development	November 15, 2003	Nov 15, 2003
New Development BMP Certification	July 1, 2003	Nov 15, 2003
Incorporate watershed protection principles and policies into the General Plan	July 1, 2004	Nov 15, 2004
Report of Waste Discharge	180 days before permit expires	Dec. 1, 2005
Annual Report/Fiscal Analysis	November 15th of each year	Nov 15
Evaluate Storm Water Management structure and Implementation Agreement	July 1st of each year	Nov 15
Review Environmental Performance Reports	July 1st of each year	Nov 15
Provide training to public agency staff and to contract field operations staff	Annually	Nov 15
Re-evaluate monitoring program priorities based on previous year's data	Annually	Nov 15
Evaluate the DAMP	July 1st of each year	Nov 15
Permittee Committee meetings to discuss permit implementation and regional and state-wide issues	Held at least 6 times each year	Nov 15

Ordered by_____

Gerard J. Thibeault
Executive Officer
October 26, 2001