SECTION 7 –

DOCUMENTATION

IN SUPPORT OF TEST CLAIMS IN RE SANTA ANA RWQCB

ORDER NO. R8-2009-0030

(NPDES NO. CAS618030)

Volume I

EXECUTIVE ORDER AND RELATED

DOCUMENTATION

INDEX TO SECTION 7 DOCUMENTATION

VOLUME I - EXECUTIVE ORDER AND RELATED DOCUMENTATION

DOCUMENT DESCRIPTION	TAB NO.
California Regional Water Quality Control Board Santa Ana Region – Order No. R8-2009-0030 (NPDES No. CAS618030)	1.
Fact Sheet - California Regional Water Quality Control Board, Santa Ana Region, to Order No. R8-2009-0030 (NPDES No. CAS618030)	2.
California Regional Water Quality Control Board Santa Ana Region – Order No. R8-2002-0010 (NPDES No. CAS618030)	3.

TAB "1"

State of California
California Regional Water Quality Control Board
Santa Ana Region

ORDER NO. R8-2009-0030
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

FINDINGS

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

A. REGULATORY BASIS

1. The 1987 amendments to the Clean Water Act (CWA) added Section 402(p) (USC §1342(p)) establishing a framework for regulating municipal and industrial (including construction) storm water discharges under the National Pollutant Discharge Elimination System (NPDES) permit. Section 402(p) of the CWA requires NPDES permits for storm water discharges from municipal separate storm sewer systems[1] (storm drains or MS4s) as well as other designated storm water discharges that are considered significant contributors of pollutants to waters of the United States (waters of the US). On November 16, 1990, the United States Environmental Protection Agency (hereinafter EPA) amended its NPDES permit regulations to include permit application requirements for storm water discharges. These regulations are codified in Code of Federal Regulations, Title 40, Parts 122, 123 and 124 (40 CFR Parts 122, 123 & 124).

2. This order is based on Section 402(p) of the CWA; 40 CFR Parts 122, 123, and 124; Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code or CWC, commencing with Section 13000); all applicable provisions of statewide Water Quality Control Plans and Policies adopted by the State Water Resources Control Board (State Board); the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan); the California Toxics Rule (CTR); and the California Toxics Rule Implementation Plan. A revised 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. Under the CWA, the beneficial uses and the water quality objectives to protect those beneficial uses are collectively referred to as water quality standards. The Basin Plan also incorporates by reference all State Board water quality control

[1] A municipal separate storm sewer **system** (MS4) is any conveyance or a system of conveyances designed to collect and/or transport storm water, such as, storm drains, manmade channels, ditches, roads w/drainage systems, catch basins, curbs, gutters, etc., which is not part of a Publicly Owned Treatment Works (i.e., not a combined sewer).

plans and policies, including the 1990 Water Quality Control Plan for Ocean Waters of California (Ocean Plan).

3. The requirements contained in this order are necessary to protect water quality standards of the receiving waters and to implement the plans and policies described in the above finding. These plans and policies contain numeric and narrative water quality standards for the water bodies in this Region. In accordance with Section 402(p)(2)(B)(iii) of CWA 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 storm water runoff to waters of the US to the maximum extent practicable (MEP)[2]. The legislative history and the preamble to the federal storm water regulations (40 CFR Parts 122, 123 and 124) indicate that the Congress and the EPA were aware of the difficulties in regulating urban storm water runoff solely through traditional end-of-pipe treatment. Consistent with the CWA, it is the Regional Board's intent that this order require the implementation of best management practices (BMPs)[3] to reduce to the maximum extent practicable, the discharge of pollutants in urban storm water from the MS4s in order to support attainment of water quality standards. This order, therefore, includes Receiving Water Limitations[4] based upon water quality objectives, and requires implementation of control measures to protect the beneficial uses. It also prohibits the creation of nuisance and requires the reduction of water quality impairment in receiving waters with an ultimate goal of achieving water quality objectives of the receiving waters.

4. This order is consistent with recent court decisions and precedential orders adopted by the State Board related to municipal storm water NPDES permits. These precedential State Board orders include: Orders No. 99-05, WQ 2001-15 and WQO 2002-0014.

5. This order does not constitute an unfunded mandate subject to subvention under Article XIII.B, Section (6) of the California Constitution for several reasons, including the following:

    a) This order implements federally mandated requirements under Clean Water Act Section 402(p)(3)(B). (33 USC § 1342(p)(3)(B)).

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[2] MEP is not defined in the CWA; it refers to management practices, control techniques, and system, design and engineering methods for the control of pollutants 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.

[3] Best Management Practices (BMPs) are programs and policies, including structural controls where appropriate, that are implemented to control the discharge of pollutants.

[4] Receiving Water Limitations are requirements included in the orders issued by the Regional Board to assure that the regulated discharge does not violate water quality standards established in the Basin Plan at the point of discharge to waters of the US or the State.

b) The permittees' obligation under this order are similar to, and in many respects less stringent than, the obligations of non-governmental dischargers who are issued NPDES permits for storm water discharges.

c) The permittees have the authority to levy service charges, fees, or assessments to pay for compliance with this order, where voter approval is needed, the permittees should strive to gain voter approval[5].

d) The permittees requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in federal Clean Water Act Section 301, subdivision (a). (33 USC § 1311(a)).

B. REGULATED ENTITIES (PERMITTEES OR DISCHARGERS)

6. On July 22, 2006, the County of Orange, Orange County Flood Control District (OCFCD) and the incorporated cities of Anaheim, Brea, Buena Park, Costa Mesa, Cypress, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, Laguna Hills, 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 urban 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. Certain portions of the cities of Laguna Hills, Laguna Woods and Lake Forest are within the San Diego Regional Board's jurisdiction. As such, these cities are also regulated under urban storm water permit issued by the San Diego Regional Board.

7. The permittees fall into one of the following categories: (1) a medium or large municipality that services a population of greater than 100,000 or 250,000 respectively; or, (2) a small municipality that is interrelated to a medium or large municipality. Under Section 402(p) of the Clean Water Act, these dischargers (permittees) are required to obtain coverage under an NPDES permit for storm water runoff from their jurisdictions.

C. REGULATED DISCHARGES

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

9. The permittees own and operate storm drains, including flood control facilities. Some of the natural channels, streambeds and other drainage facilities that are generally considered as waters of the US have been converted to flood control

[5] For example, the City of Santa Cruz voted to raise property taxes to fund the storm water program at the November 4, 2008 election (see: http://www.santacruzsentinel.com/localnews/ci_10904561).

facilities. The permittees have established legal authority to control discharges into these systems that they own, operate and/or regulate. As owners and/or operators of the MS4 systems, the permittees are responsible for discharges into their systems that they do not prohibit or control (except where they lack jurisdiction; see A.10 below). The discharge of pollutants into the MS4s may cause or contribute to, or threaten to cause or contribute to, a condition of pollution in receiving waters. Federal regulations, 40 CFR 122.26(d)(2)(i), require the permittees to control the discharge of pollutants into the MS4s to the maximum extent practicable.

10. The permittees may lack legal jurisdiction over urban runoff 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 urban 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.

11. This order regulates storm water runoff and certain types of de-minimus discharges specifically authorized under Section III of this order (collectively referred to as urban runoff) from areas under the jurisdiction of the permittees. For purposes of this order, urban runoff includes storm water and authorized non-storm water (see Section III) discharges from residential, commercial, industrial and construction areas within the permitted area and excludes discharges from feedlots, dairies, and farms. Urban runoff consists of surface runoff generated from various land uses in all the hydrologic drainage areas that discharge into waters of the US. 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 illicit discharge[6] practices and illicit[7] connections.

12. The permittees have the authority to approve plans for residential, commercial, and industrial developments. If not properly controlled and managed, urbanization could result in the discharge of pollutants in urban runoff[8]. "America's Clean Water-The States' Nonpoint Source Assessment, 1985" and the Biennial National Water Quality Inventory Reports to Congress cite urban runoff as a major source of

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[6] Illicit discharge means any disposal, either intentionally or unintentionally, of material or waste that can pollute urban runoff or create a nuisance.

[7] Illicit connections are those which are not properly authorized or permitted by the municipality or the owner/operator of the conveyance system.

[8] U.S. EPA. 1983. Results of the Nationwide Urban Runoff Program, Vol. 1, Final report. NTIS PB84-185552.

beneficial use impairment. Urban area runoff may contain[9] elevated levels of pathogens (e.g., bacteria, protozoa, viruses), sediment, trash, fertilizers (nutrients, compounds of nitrogen and phosphorus), pesticides (e.g., DDT, Chlordane, Diazinon, Chlorpyrifos), heavy metals (e.g., cadmium, chromium, copper, lead, zinc), and petroleum products (e.g., oil, grease, petroleum hydrocarbons, polycyclic aromatic hydrocarbons). Urban runoff can carry these pollutants to rivers, streams, lakes, bays and the ocean (receiving waters[10]). In addition, increased flows due to urbanization may increase erosion of stream banks and channels and cause stream channel alterations and impact aquatic resources. This order regulates the discharge of pollutants to waters of the US, to protect beneficial uses of the receiving waters.

13. Urban activities also generate non-storm water discharges such as air conditioning condensate, irrigation runoff, individual residential car washing, etc., generally referred to as de minimus type of discharges. If properly managed, these types of discharges may not contain significant amount of pollutants. Some of these de minimus types of discharges are currently being regulated under separate orders issued by the Regional Board, and some of the specific types of de minimus discharges are authorized under this order (see Section III of this order). Orders No. R8-2003-0061 (NPDES No CAG998001), R8-2004-0021 (NPDES No. CAG998002) and R8-2007-0041 (NPDES No. CAG918002) issued by the Regional Board regulate de-minimus types of discharges.

D. HISTORY OF ORANGE COUNTY MUNICIPAL STORM WATER PERMIT

14. 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 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 (first term Permit). Orders No. 96-31 (second term Permit) and R8-2002-0010 (third term Permit), issued by the Regional Board on March 8, 1996 and January 18, 2002, respectively, renewed the Orange County MS4 permit.

15. Order No. R8-2002-0010 expired on January 19, 2007. On July 22, 2006, the permittees submitted a Report of Waste Discharge for renewal of the Permit. On February 20, 2007, Order No. 2002-0010, NPDES No. CAS618030, was administratively extended in accordance with Title 23, Division 3, Chapter 9, §2235.4 of the California Code of Regulations.

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[9] Makepeace, D.K., D.W. Smith, and S.J. Stanley. 1995. Urban stormwater quality: summary of contaminant data. Critical Reviews in Environmental Science and Technology 25(2):93-139.

[10] Receiving waters are waters of the U.S. (and their tributaries) which are identified in the Basin Plan as having certain beneficial uses (see Finding 19, below, for a list of these waters).

E. PERMIT RENEWAL APPLICATION AND RELATED DOCUMENTS

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

    a) A summary of status of current Storm Water Management Program;

    b) A Proposed Plan of Storm Water Quality Management Activities for 2007-20012, as outlined in the Draft 2007 Drainage Area Management Plan (DAMP). The 2007 DAMP includes all the activities the permittees propose to undertake during the next permit term, goals and objectives of such activities, and an evaluation of the need for additional source control and/or structural and non-structural BMPs and proposed pilot studies;

    c) The permittees have developed Local Implementation Plans (LIPs); established a formal training program; and developed a program effectiveness assessment strategy and Watershed Action Plans;

    d) A Performance Commitment that includes new and existing program elements and compliance schedules necessary to implement controls to reduce pollutants to the maximum extent practicable;

    e) A summary of procedures implemented to detect illicit discharges and illicit connection practices;

    f) A summary of enforcement procedures and actions taken to require storm water discharges to comply with the approved Storm Water Management Program;

    g) A summary of public agency activities, results of monitoring program, and program effectiveness assessment; and,

    h) A fiscal analysis.

17. The documents referenced in Finding E.16, above, are hereby incorporated as enforceable elements of this order.

F. PERMITTED AREA

18. The permitted area is shown on Attachment A. It includes the northern portions of Orange County, including the 26 incorporated cities listed under Finding 6, above. The permittees serve a population of approximately 3.1 million, occupying an area of approximately 789 square miles (including unincorporated areas and the limits of 34 cities, 26 of which are within the jurisdiction of this Regional Board; three of the cities, Laguna Hills, Laguna Woods and Lake Forest, are within both the San Diego and Santa Ana Regional Boards' jurisdictions). The permittees have jurisdiction over and/or maintenance responsibility for storm water conveyance systems within Orange County. The County Flood Control system includes an estimated 740 miles of storm drains. 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 a storm drain 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.

G. RECEIVING WATERS AND BENEFICIAL USES

19. Storm water runoff from the MS4s in Orange County enter, or 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, the 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 that could be impacted by urban runoff include:

Inland Surface Streams

Santa Ana River, Reaches 1 and 2

Aliso Creek (tributary to Santa Ana River)

Carbon Canyon Creek (tributary to Santa Ana River)

Santiago Creek, Reaches 1, 2, 3, and 4 (tributary to the Santa Ana River)

Silverado Creek (tributary to Santiago Creek)

Black Star Creek (tributary to Santiago Creek)

Ladd Creek (tributary to Santiago Creek)

San Diego Creek, Reaches 1 and 2 (tributary to Newport Bay)

San Joaquin Freshwater Marsh (tributary to San Diego Creek)

Other tributaries to San Diego Creek: 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, and Sand Canyon Wash

Santa Ana Delhi Channel (tributary to Newport Bay)

Big Canyon Wash (tributary to Newport Bay)

Buck Gully

Los Trancos Creek

Coyote Creek (tributary to San Gabriel River)

Other tributaries to the above listed rivers, creeks and channels

Bays, Estuaries, and Tidal Prisms

Anaheim Bay and Seal Beach National Wildlife Refuge

Sunset Bay

Bolsa Bay and Bolsa Chica Ecological Reserve

Upper and Lower Newport Bay

Tidal Prism of Santa Ana River (to within 1000 feet of Victoria Street) and Newport Slough, Santa Ana Salt Marsh

Tidal Prism of San Gabriel River (River Mouth to Marina Drive)

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

Ocean Water

Nearshore Zone

San Gabriel River to Poppy Street in Corona Del Mar

Poppy Street to Southeast Regional Boundary

Offshore Zone

Waters between Nearshore Zone and limit of State Waters

Lakes and Reservoirs

Anaheim Lake

Irvine Lake (Santiago Reservoir)

Laguna, Lambert, Peters Canyon, Rattlesnake, Sand Canyon and Siphon Reservoirs

20. 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 sport fishing, 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 achieve water quality objectives in the receiving waters, thereby protecting their beneficial uses.

21. Federal regulations, 40 CFR 131.10(a), prohibits the states from designating a water body for waste transport or waste assimilation. This order prohibits the construction of treatment BMPs within waters of the US. However, if the discharges are sufficiently treated to protect the beneficial uses of the receiving waters, further polishing of the discharge within waters of the US may be considered on a case-by-case basis. Federal authorization under Section 404 and Water Quality Standards Certification under Section 401 of the Clean Water Act may be required for waste treatment or conveyance within waters of the US. Pursuant to Water Code Section 13260, Waste Discharge Requirements may be required for such facilities within waters of the State. Under certain conditions, stream flows may be diverted for treatment (see Section III for conditions on return flows from facilities that extract, treat and return flows from the waters of the US).

H. INTERRELATED WATERSHEDS AND STORM WATER PERMITS

22. 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 County and the Riverside County 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.

23. 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). During dry weather conditions, 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.

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

    Orange County, NPDES No. CAS618030;

    Riverside County, NPDES No. CAS618033; and,

    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.

25. Studies conducted by the USEPA, the states, flood control districts and other entities indicate the following major sources for urban storm water pollution nationwide:

    Industrial sites where appropriate pollution control and BMPs are not implemented;

    Construction sites where erosion and siltation controls and other BMPs are not implemented; and,

    Urban runoff where the drainage area is not properly managed.

26. A number of permits have been adopted to address pollution from the sources identified in Finding 25, above. The State Board issued three statewide general NPDES permits: one for storm water runoff from industrial activities (NPDES No. CAS000001, General Industrial Activities Storm Water Permit), a second permit for storm water runoff from construction activities (NPDES No. CAS000002, General Construction Activity Storm Water Permit) and a third permit for Storm Water Runoff Associated with Small Linear Underground/Overhead Construction Projects (CAS000005). Industrial activities (as identified in 40 CFR 122.26(b)(14)) and construction sites of one acre 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 Permits for new

developments to be implemented at the time of grading or building permit issuance for construction sites on one acre or more and at the time of local permit issuance for industrial facilities.

27. The State Board also adopted NPDES No. CAS000003 for storm water runoff from facilities (including freeways and highways) owned and/or operated by California Department of Transportation (Caltrans) and NPDES No. CAS000004, for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems. The Regional Board adopted Order No. R8-2007-0001, 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 two facilities located within Orange County. 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.

28. 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. Federal regulations, 40 CFR Part 122.26(d)(2)(iv)(C), also require the permittees to develop and implement programs to control the discharge of pollutants from these sites. A coordinated effort between the permittees and 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 they observe conditions that pose a threat or potential threat to water quality, or when an industrial facility or construction activity has failed to obtain required coverage under the appropriate general storm water permit.

29. Each watershed has unique receiving water issues, land uses, topography, soils and stream stability and habitat issues. The Regional Board and the permittees recognize the importance of integrated 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 (e.g., Orange County Flood Control Master Plan, Irvine Ranch Water District Natural Treatment System Master Plan, Orange County Watershed Plans, Nutrient and Selenium Management Program, etc.). As recommended in the 2008 National Academy of Sciences Report on Urban Stormwater Management, this order provides an option for the permittees to develop and implement watershed master plans integrating water quality, hydromodification, water supply and habitat protection issues. The Regional Board recognizes that a watershed master plan should integrate all other related programs, including the storm water program and TMDL processes. Consistent with this approach, some of the municipal storm water monitoring programs have already been integrated into a regional monitoring program. 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 approve, after proper public notification and consideration of all comments received, the integrated watershed management initiatives and regional planning and coordination programs and regional monitoring programs. The permittees are required to submit all documents, where appropriate, in an electronic format. All such documents will be posted at the Regional Board's website and all interested parties will be notified. In addition, the website will include the administrative and civil procedures for appealing any decision made by the Executive Officer. Some urban runoff issues, such as monitoring, public education and training can be more effectively addressed on a regional or statewide basis, thereby increasing program consistency and efficiency. This order encourages continued participation in such programs and policies.

30. The permittees are required to conduct inspections (40 CFR Part 122.26(d)(2)(iv)(C)(2)) of construction sites, industrial facilities and commercial establishments. Inspection requirements, including criteria for prioritization of facilities for the inspection, were included in the third term permit. The construction and industrial inspection programs in the third term permit had established criteria/examples. However, the commercial inspection program only included a preliminary list of types of facilities to be inspected. Further refinements to the commercial inspection program are included in this order and these include: moving mobile businesses into their own program; including eating establishments (previously their own pilot program); and the addition of some key categories, not included on the 3rd term permit list. It should also be noted that some of these additional categories are directly related to current categories or identified in the Model Urban Runoff Program[11] and all of the additional categories are proposed for inclusion in other Southern California MS4 permits. To avoid duplicative efforts, the permittees need not inspect facilities that have been inspected by Regional Board staff, if the inspection was conducted during the specified time period. It is anticipated that many of the inspections required under this order can and will be carried out by inspectors currently conducting other types of inspections for the permittees (i.e., grading, building, code enforcement, etc.), during their normal duties. It is critical that these inspectors be properly trained in storm water pollution prevention and related issues.

I. POTENTIAL POLLUTANTS IN STORM WATER RUNOFF/IMPACTS ON BENEFICIAL USES

31. The permittees have conducted urban runoff and receiving water monitoring as required under the first, second and third term permits. The third term permit required monitoring using a wider array of methods to assess impacts caused by pollutants in urban runoff. In addition to monitoring the water column under wet and dry weather conditions, the permittees were required to monitor: water column toxicity, mass emission rates, estuary/wetlands including sediment and benthic monitoring, bacteriological/pathogen concentrations and bioassessment analysis. These monitoring programs indicate exceedances of Basin Plan, CTR and/or AB

[11] Model Urban Runoff Program, prepared by the City of Monterey, California Coastal Commission, et. al., revised February 2002 by California Coastal Commission.

411 objectives for a number of constituents. The Report of Waste Discharge identifies copper and zinc, trash and debris, pesticide toxicity and pathogens as the major pollutants of concern. Monitoring data indicate that storm water and dry weather urban runoff continue to have pollutants at levels that could cause or contribute to exceedances of water quality objectives in the receiving waters. The permittees are proposing to conduct special studies to address these pollutants of concern during the fourth term permit.

32. The annual reports submitted by the permittees indicate that urban runoff is still causing or contributing to water quality standards violations. Some of the samples collected during both dry and wet weather exceeded the water quality standards. However, the exceedances during wet weather were more widespread compared to dry weather runoff. The monitoring reports indicate that there is some reduction in the mass loading rates for some of the metals, such as copper and zinc.

33. The results from the monitoring programs did not establish a clear correlation between pollutants in dry or wet weather runoff and impacts on beneficial uses in the receiving waters. However, exceedances of water quality objectives, including exceedances of AB411 standards, were reported for a number of monitoring locations by the permittees. Shoreline monitoring data indicate that AB411 exceedances are higher during the summer months (AB411 season) compared to the winter months. For the interior channels, AB411 exceedances were higher than shoreline, but were not significantly different for summer and winter months[12]. The index of biotic integrity rating is generally poor for most urban streams. The monitoring data also indicated sporadic exceedances of water quality objectives for dissolved oxygen, pH, turbidity, ammonia-nitrogen, surfactants, and some of the metals[13].

34. During the summers of 1999 and 2000, a number of locations along the Orange County coast exhibited elevated bacterial levels. Since then a number of studies have been conducted that indicate that urban runoff, especially dry weather runoff, is a major contributing factor to the Orange County coastal bacterial contamination problems. To address this bacterial problem, the permittees currently divert dry weather low flows from some of these areas to the sanitary sewer. With the diversion of dry weather flows to the sanitary sewer, there have been significant improvements in the beach water quality. A number of studies have been conducted to determine the source of this microbial contamination and to develop permanent remedial measures. These studies have not conclusively determined the sources or solutions to this problem.

35. Monitoring results have indicated the presence of elevated concentrations 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 Report of Waste Discharge indicates that through implementation of this program, the municipalities have reduced the use of fertilizers

[12] Unified Annual Progress Report, 2005-2006, Page C-11-31.

[13] Unified Annual Progress Report, 2005-2006, Attachment C-11-VII.

and pesticides. The permittees are required to review this plan to make any needed changes. TMDLs are being developed for some of the pesticides for the Newport Bay watershed. This order may be reopened to include any TMDL requirements.

36. 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, such as bacteria, viruses, protozoa, (from sanitary sewer overflows, septic system leaks, 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. Oil and grease (from automobiles, industrial sites, etc.) 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. Sediments and other suspended particulates (from construction sites, erosion due to hydromodification, etc.) can cause turbidity, clog fish gills and interfere with respiration in aquatic fauna. These pollutants can also screen out light, hindering photosynthesis and normal aquatic plant growth and development. Toxic substances (from pesticides, herbicides, petroleum products, metals) 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 feeding operations, wildlife, pets and 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. Stagnant water trapped in trash and debris creates breeding conditions for disease vectors (e.g., mosquitoes). Trash and debris, in particular plastics, have long been recognized as both aesthetic nuisances and as threats to freshwater and marine environments. Plastic debris, in the form of broken-down packaging and pre-production plastic pellets or 'nurdles', harms hundreds of wildlife species through ingestion, entanglement and entrapment. These plastic nurdles have the capability of absorbing pollutants, such as PCBs, and when ingested by wildlife, expose those animals to pollutant concentrations that are orders of magnitude higher than the surrounding water. Water Code Section 13367 requires the State Board and the regional boards to implement a program to control discharges of preproduction plastic from point and nonpoint sources. In collaboration with the permittees, Regional Board staff is currently trying to address this problem through the State's General Storm Water Permit for Industrial Activities and local controls.

37. Pollutants in urban runoff could adversely impact human health and the environment. Human illnesses have been linked to recreational activities in coastal waters especially near storm drain outlets[14]. Bioaccumulation of pollutants, present

[14] The Santa Monica Bay Restoration Project, Epidemiology Study, 1996.

in urban runoff, can occur in fish and other aquatic organisms. These organisms may be consumed by birds and humans. Pollutants in urban runoff can also cause mortality, impair growth and reproduction anomalies in aquatic organisms. If not properly designed and maintained, urban storm water treatment systems could provide breeding areas for disease vectors, such as mosquitoes, which are a public health concern (e.g., West Nile Virus).

38. It is important to control litter in order 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 Collection Day", etc. The permittees also organize solid waste collection programs, household hazardous waste collections, and recycling programs to reduce litter and illicit discharges. Additionally, the permittees have installed debris booms at a number of locations to capture trash and debris preventing it from depositing on beaches.

39. The pollutants from urbanized areas are also a significant threat to environmentally sensitive areas, such as waterbodies designated as supporting a RARE beneficial use (supporting rare, threatened or endangered species), areas of special biological significance (ASBSs) and Clean Water Act Section 303(d) listed impaired waterbodies. The State Board is developing Special Protections for Storm Water and Non-point Source Discharges to ASBSs. Where applicable, the permittees are expected to comply with these Special Protection requirements for the ASBSs.

J. CWA SECTION 303(d) LISTED WATERBODIES AND TMDLS

40. Water quality assessments conducted by Regional Board staff have identified a number of water quality standards impairments due, in part, to urban runoff. Section 305(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 being met, then that waterbody must be listed under Section 303(d) of the CWA as an impaired waterbody. The 2006 State water quality assessment listed a number of water bodies within the Region under Section 303(d) as impaired waterbodies. For many of these impaired waterbodies, one of the listed causes of impairment is urban runoff. In the Orange County area, these include:

San Diego Creek, Reach 1 (listed for toxaphene, selenium, fecal coliform, nutrients, pesticides, sediment/siltation);

San Diego Creek, Reach 2 (listed for metals, nutrients, sediment/siltation, unknown toxicity);

Upper Newport Bay Ecological Reserve (listed for sediment toxicity, metals, copper, chlordane, PCBs, DDT, nutrients, pathogens, pesticides, sediment/siltation);

Lower Newport Bay (listed for chlordane, copper, DDT, sediment toxicity, PCBs, nutrients, pathogens, pesticides);

Anaheim Bay (listed for nickel, dieldrin, sediment toxicity, PCBs);

Huntington Harbour (listed for copper, lead, nickel, chlordane, pathogens, PCBs, sediment toxicity);

Santiago Creek, Reach 4 (listed for salinity, TDS, chlorides);

Seal Beach (listed for enteroccocus, PCBs);

Silverado Creek (listed for pathogens, salinity, TDS, chlorides);

Rhine Channel (listed for copper, lead, mercury, zinc, sediment toxicity, PCBs);

Peters Canyon Channel (listed for DDT, toxaphene);

Los Trancos Creek (Crystal Cove Creek) (listed for total and fecal coliform);

Huntington Beach State Park (listed for enteroccocus, indicator bacteria, PCBs);

Bolsa Chica State Beach (listed for copper and nickel);

Buck Gully Creek (listed for total and fecal coliform); and

Balboa Beach (listed for dieldrin, DDT, PCBs).

41. 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 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. A TMDL is the sum of the individual wasteload allocations (WLA) for point source inputs, load allocations (LA) for non-point source inputs and natural background, plus a margin of safety. TMDLs are one of the bases for limitations established in waste discharge requirements.

42. For 303(d) listed waterbodies without a TMDL, the permittees are required to provide special protections through development and implementation of Watershed Action Plans or other focused control measures that would address the pollutant of concern. If a TMDL has been developed and an implementation plan is yet to be developed, the permittees are required to develop constituent specific source control measures, conduct additional monitoring and/or cooperate with the development of an implementation plan.

43. TMDLs have been established by the Regional Board for sediment, fecal coliform, diazinon, chlorpyrifos and nutrients for the Newport Bay watershed. Organochlorine compounds TMDLs were adopted by the Regional Board on September 7, 2007. In addition, toxics TMDLs were promulgated by USEPA on June 14, 2002, including TMDLs for metals and selenium, and a TMDL specific to the Rhine Channel located in Lower Newport Bay.

44. TMDLs for diazinon and chlorpyrifos in San Diego Creek, and for chlorpyrifos in Upper Newport Bay, were adopted by the Regional Board on April 4, 2003, and subsequently approved by the State Board, State Office of Administrative Law, and EPA. The diazinon and chlorpyrifos TMDLs require all MS4 permittees in the

Newport Bay Watershed to develop and implement monitoring programs for diazinon and chlorpyrifos. The TMDLs also impose limits on the discharge of these compounds. This order incorporates these requirements.

45. The fecal coliform TMDL specifies WLAs for urban runoff to protect water contact recreation and shellfish harvesting beneficial uses. The implementation plan for the fecal coliform TMDL requires that monitoring and certain investigations be conducted, including a source identification and characterization investigation of urban runoff. An updated TMDL report is to be prepared based on the data and information collected, and the TMDL is to be adjusted, as necessary, based on the updated TMDL report. This order may be reopened to incorporate additional requirements based on findings in the source identification and characterization plan that is expected to be completed in 2009. This order may be reopened to incorporate additional or revised requirements based on the updated TMDL report and/or approved changes to the TMDL.

46. As indicated above, nutrient (nitrogen and phosphorus) TMDLs have been established by the Regional Board for the Newport Bay watershed. The current and future (year 2012) targets for the nutrient TMDLs are already being met. However, Board staff is currently reevaluating the nutrient TMDLs in light of evidence that there remains impairment of these waters due to eutrophication. The EPA promulgated TMDLs for selenium but, an implementation plan is yet to be developed. The Regional Board adopted Orders No. R8-2004-021 and R8-2007-0041 as interim control measures to address nitrogen and selenium in groundwater-related discharges to the Newport Bay watershed. In response to Order No. R8-2004-0021, stakeholders established a Nitrogen Selenium Management Program (NSMP) Working Group. The Working Group is implementing an approved workplan that is expected to identify comprehensive management plans for both selenium and nitrogen in groundwater in the Newport Bay watershed. Board staff is currently developing selenium TMDLs that will update and revise those established by EPA and that will include an implementation plan. The implementation plan will rely heavily on the findings and recommendations made by the NSMP Working Group. It is expected that the implementation plan will include the opportunity for an adaptive, collaborative approach by stakeholders in the watershed to address selenium and nitrogen in comprehensive and efficient fashion. This approach may be implemented through a cooperative agreement or, alternatively, through waste discharge requirements or a conditional waiver of waste discharge requirements.

47. In support of the nutrient TMDLs implementation plan, a regional monitoring program (RMP) was developed to monitor nutrients in San Diego Creek and Newport Bay. This order requires the permittees listed under the RMP to continue their participation in the RMP program.

48. On September 7, 2007, the Regional Board adopted TMDLs for organochlorine compounds (OCs) that specify WLAs for urban runoff for DDT and toxaphene in San Diego Creek, and DDT, chlordane, and PCBs in Upper and Lower Newport Bay. The OCs TMDLs also specify informational TMDLs with informational urban

runoff WLAs for chlordane and PCBs in San Diego Creek. The OCs TMDLs require approval from the State Board, the State Office of Administrative Law, and EPA. The implementation plan for the OCs TMDLs includes monitoring and, where necessary, enhanced implementation of best management practices (BMPs) to reduce erosion and sediment transport as organochlorine compounds tend to adhere to fine sediment. In addition, the OCs TMDL implementation plan provides an opportunity for dischargers to participate in the development and implementation of a comprehensive Work Plan that would address the OCs and other sources of toxicity in the San Diego Creek and Newport Bay watersheds. Once a Work Plan is developed, it is required to be approved by the Regional Board at a public hearing. Participation by the permittees in this process will obviate the need for individual actions on the tasks in Table NB-OCs-13[15] by members of the Working Group. The County of Orange and Newport Bay watershed MS4 permittees have initiated efforts to develop a Work Plan. MS4 permittees not electing to participate in the Work Plan approach will be required to implement the tasks shown in Table NB-OCs-13, as appropriate.

49. The State Board awarded a grant to the South Coast Resource Conservation and Development Council in partnership with the University of California Cooperative Extension to investigate and demonstrate strategies to reduce pesticide runoff from urban areas. A pesticide management plan for the Newport Bay watershed has been developed under this program[16].

50. If the TMDL implementation plans include compliance schedules beyond the permit term, monitoring and other requirements are being included in this order to monitor progress towards achieving future compliance.

51. Certain portions of the San Gabriel River watershed are under the Los Angeles Regional Board's jurisdiction. Urban runoff from cities and county areas within the northwestern portions of Orange County discharge into the San Gabriel River and/or its tributaries. On July 13, 2006, the Los Angeles Regional Board adopted TMDLs for metals in the San Gabriel River watershed. However, because of the state's inability to meet the March 2007 deadline for an approved TMDL prescribed in a consent decree (Heal the Bay Inc., et al. v. Browner C98-4825 SBA), on March 26, 2007, the EPA promulgated TMDLs for metals and selenium for the San Gabriel River. The upper portions of Coyote Creek flow through Orange County to join the San Gabriel River above the tidal prism. Other unnamed tributaries located in northwestern Orange County also discharge into the San Gabriel River estuary. The EPA promulgated TMDLs include wet weather wasteload allocations for Coyote Creek for copper, lead and zinc and dry weather wasteload allocations for copper for Coyote Creek. The permittees are expected to implement programs and policies consistent with the metals and selenium TMDLs for the San Gabriel River watershed. This includes constituent-specific source control programs or other equally effective programs to control

[15] Attachment 2 to Resolution No. R8-2007-0024.

[16] Darren L. Haver and John N. Kabashima, June 30, 2008, Pesticide Runoff Management Plan, Newport Bay Watershed.

the discharge of copper, lead and zinc into Coyote Creek and other tributaries in Orange County that discharge into the San Gabriel River.

52. This order requires permittees to comply with established TMDL wasteload allocations specified for urban runoff and/or storm water by implementing the necessary BMPs. NPDES regulations at 40 CFR 122.44(d)(vii)(B) require that permits be consistent with wasteload allocations approved by U. S. EPA. This order requires the permittees to comply with the urban runoff/storm water wasteload allocations specified in (1) Regional Board-adopted and USEPA approved TMDLs (including TMDLs for nutrients, fecal coliform, diazinon and chlorpyrifos); (2) Regional Board-adopted TMDLs that are approved by the State Board and State Office of Administrative Law and that are thereby effective (approval of organochlorine compounds TMDLs by the State is pending); and, (3) USEPA-promulgated TMDLs (including toxics TMDLs for the Newport watershed). 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 waters, impairment caused by urban runoff, compliance with the wasteload allocations and for assessing the effectiveness of control measures.

53. Permittees will be required to comply with established TMDLs and other water quality standards or discharge requirements that may be imposed by the EPA or the State prior to the expiration of this order. This order may be reopened to address established or revised TMDLs and/or other requirements developed and adopted by the Regional Board, EPA or the State Board.

K. DRAINAGE AREA MANAGEMENT PLAN (DAMP)

54. Urban development increases population density and pollutant sources[17] such as construction activities, industrial facilities, auto emissions, wastes related to automobile maintenance activities, sanitary wastes, pesticides, pet wastes, household hazardous wastes and trash[18]. If appropriate BMPs are not implemented, retail gasoline outlets and automobile service stations could be significant sources of pollutants in urban runoff including petroleum hydrocarbons, oil and grease, metals and solvents[19].

55. The local agencies (the permittees) are the owners and operators of the storm water conveyance systems and have established appropriate legal authority to control discharge of pollutants to the MS4s. The permittees have adopted grading and erosion control ordinances and guidelines for the implementation of best management practices (BMPs) for municipal, commercial, and industrial activities.

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[17] U.S. EPA (1992). *Environmental Impacts of Storm Water Discharges: A National Profile,* EPA 841-R-92-001; Office of Water, Washington, DC.

[18] National Management Measures to Control Nonpoint Source Pollution from Urban Areas. USEPA Publication No. EPA 841-B-05-004, November 2005.

[19] Retail Gasoline Outlet and Commercial Parking Lot Storm Water Runoff Study, Western States. Petroleum Association and American Petroleum Institute (1994) at p 13. The study concludes that pollutant concentrations in storm water discharges from properly managed RGOs are similar to concentrations from commercial parking lots and diffuse urban runoff.

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.

56. One of the major tools that the permittees use for urban runoff 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 revised draft 2007 DAMP.

57. The DAMP is a dynamic document and the permittees have implemented, or are in the process of implementing, various elements of the DAMP. This order requires the permittees to continue to implement the BMPs listed in the revised DAMP; update or modify the DAMP, when appropriate, consistent with the MEP and other applicable standards; and to effectively prohibit illicit discharges to the storm drain system.

58. 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.

59. In order to meet DAMP requirements and characterize and manage pollutant sources on a local level, the permittees developed LIPs. Each jurisdiction has developed its own LIP and is implementing the LIP to properly manage, reduce and mitigate potential and actual pollution sources within the boundaries of each permittee's jurisdiction.

L. NEW DEVELOPMENT/SIGNIFICANT REDEVELOPMENT – WQMP/LIP/LID

60. 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 areas available for infiltration and evapotranspiration 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. This order includes requirements to address increases in imperviousness and changes in water quality and quantity, including hydrologic conditions of concern.

61. Recent studies have indicated that low impact development[20] (LID) BMPs are effective storm water management tools that minimize adverse impacts on storm water runoff quality and quantity resulting from urban developments. The Southern

[20] Low impact development is an approach to land development (or re-development) that works with nature to manage storm water as close to its source as possible by using structural and non-structural best management practices to reduce environmental impacts.

California Monitoring Coalition (SMC), including the project lead agency, the San Bernardino County Flood Control District, in collaboration with SMC member Southern California Coastal Water Research Project (SCCWRP) and the California Storm Water Quality Association (CASQA), with funding from the State Water Resources Control Board and CASQA, is developing a Low Impact Development Manual for Southern California. A preliminary draft of this manual indicates that effective implementation of site design LID BMPs should occur during the earliest stages of planning such as site assessment, environment review and site planning. This manual will be incorporated into the CASQA BMP Handbooks. The permittees are encouraged to utilize the manual as a resource to implement LID techniques. This order requires the project proponents to first consider preventative and conservation techniques (e.g., preserve and protect natural features to the maximum extent practicable) prior to considering mitigative techniques (structural treatment, such as infiltration systems). The mitigative measures should be prioritized with the highest priority for BMPs that remove storm water pollutants and reduce runoff volume, such as infiltration, then other BMPs, such as harvesting and re-use, evapotranspiration and bio-treatment should be considered. These LID BMPs must be implemented at the project site in a manner consistent with the maximum extent practicable standard. Where LID BMPs are not feasible at the project site, more traditional, but equally effective control measures should be implemented.

62. The USEPA has determined that LID/green infrastructure can be a cost-effective and environmentally preferable approach for the control of storm water pollution and will minimize downstream impacts by limiting the effective impervious area of development. LID and the reduction of impervious areas may achieve multiple environmental and economic benefits in addition to reducing downstream water quality impacts, such as enhanced water supplies, cleaner air, reduced urban temperatures, increased energy efficiency and other community benefits, such as aesthetics, recreation, and wildlife areas. USEPA has reviewed studies[21] that have evaluated the percent EIA[22] concept (also see the SCCWRP study[23]). The limited study conducted by Dr. Richard Horner[24] concluded that a 3% EIA standard for development is feasible in Ventura County. EPA believes that EIA is a reasonable metric for incorporating LID principles into storm water permits and EPA supports

[21] See for example the analysis prepared by Dr. Richard Horner entitled, "Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices ("LID") for Ventura County" submitted to the Los Angeles Regional Board by NRDC.

[22] EIA=effective impervious area. These are areas where little or no infiltration of storm water occur, such as paved areas.

[23] Studies conducted by Southern California Coastal Water Research Project (SCCWRP) and others indicate that environmental impacts from developments could be minimized by limiting the effective impervious area.

[24] Dr. Richard Horner, Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices ("LID") for Ventura County, Development (undated).

other equally effective metrics for compliance determination. A review of the analysis of the LID metrics in storm water permitting[25] and its critique[26] indicates that there are certain shortcomings in specifying a percentage EIA as a metric. A series of stakeholder meetings[27] conducted after issuance of the first draft of this order concluded that other equally effective metrics could be used to quantify implementation of LID. It was generally agreed by the stakeholders that a numeric metric, such as a metric based on a specified volume capture may be an equally effective metric. A 5% EIA metric was included in the first draft of this order. The second draft replaces the 5% EIA metric with a volume capture metric based on the design volume specified in the WQMP.

63. On October 5, 2000, the State Board adopted Order No. WQ-2000-11, which is a precedential order. Order No. WQ-2000-11 required that urban runoff generated by 85th percentile storm events from specific types of development categories should be infiltrated, filtered or treated. The essential elements of this precedential order were incorporated into the Region 8 Orange County third term permit. In accordance with the requirements specified in the third term permit, the permittees developed a model Water Quality Management Plan (WQMP) by amending their Drainage Area Management Plan (DAMP). The model WQMP provides a framework to incorporate watershed protection principles into the permittees planning, construction and post-construction phases of defined new and redevelopment projects. The model WQMP includes site design, source control and treatment control elements to reduce the discharge of pollutants in urban runoff. On September 26, 2003, the Regional Board approved the model WQMP. The permittees have incorporated provisions of the model WQMP into their LIPs. The permittees are requiring new developments and significant redevelopments to develop and implement appropriate project WQMPs. This order requires continued implementation of structural and non-structural BMPs for new developments and significant redevelopments as per the approved model WQMP, and the priority project threshold for commercial/industrial developments has been changed to 10,000 square feet, making it consistent with the threshold for residential subdivisions. However, with the implementation of LID techniques, some of the structural treatment control BMPs may not be necessary. The project WQMPs are required to include a discussion on how LID principles are incorporated into the project. Section 7.II-3.2.4 of the WQMP requires identification of hydrologic conditions of concern (HCOC). An HCOC exists when a site's hydrologic regime is

[25] Low Impact Development Metrics in Stormwater Permitting, Prepared for the Ventura Countywide Stormwater Quality Management Program and the Orange County Stormwater Program by Geosyntec Consultants and Larry Walker Associates with Assistance from Hawks and Associates (January 2009).

[26] Critique of Certain Elements of "Low Impact Development Metrics in Stormwater Permitting" by Dr. Richard Horner (undated, submitted by NRDC on February 13, 2009).

[27] The stakeholder group included representatives from Permittees, NRDC, Orange County Coastkeeper, BIA/CICWQ, The Irvine Company, Regional Board staff, USEPA and a number of consultants and attorneys.

altered and there are significant impacts on downstream channels and aquatic habitats, alone or in conjunction with impacts of other projects. Currently, new development and significant re-development projects are required to perform this assessment and incorporate appropriate BMPs to ensure existing hydrologic conditions are maintained. Certain jurisdictions have employed HCOC mapping efforts to assist developers in identifying areas where HCOC conditions exist. Within six months of adoption of this order, the permittees are required to conduct an HCOC mapping to identify HCOC areas in the permitted area.

64. The Region 8 Orange County third term permit required the permittees to review their planning (CEQA, General Plan, etc.) and approval processes to determine the need to revise those processes to address appropriate storm water protection principles. The model WQMP provides a framework for addressing these issues. However, Regional Board staff's audit of the permittees MS4 program indicated that all the permittees had not fully implemented the program. This order requires the permittees to reevaluate and to revise the current program implementation processes. 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 shall consider these impacts and appropriate mitigation measures during the planning and approval processes.

65. The intent of the WQMP, SWPPP and other programs and policies incorporated into this order is to minimize the impact from the project on water quality and the environment. However, compliance with this order and the DAMP does not necessarily constitute mitigation that is sufficiently specific to satisfy the requirements of CEQA with regards to projects.

66. Treatment control BMPs include vortex systems, catch basin inserts, detention basins, infiltrations areas (including LID-based), retention basins, regional treatment systems, constructed wetlands, various types of storm water filters, etc. If not properly designed and managed, these systems could be sources of pollutants and could become a nuisance and/or cause the spreading of surface water pollution, and those treatment systems with a hydraulic connection to groundwater (e.g., detention basins, infiltration systems, constructed wetlands, etc.) could be sources of groundwater pollution. Restrictions placed on urban runoff infiltration in this order (Section XII.B.5.) are based on recommendations provided by the U.S. EPA Risk Reduction Laboratory. The requirements specified in this order include identification of responsible agencies for maintaining the systems and for providing funding for operation and maintenance.

67. If not properly designed and maintained, the BMPs identified in Finding 66 could create a nuisance and/or habitat for vectors[28] (e.g., mosquitoes and rodents). Third term permit required the permittees to closely collaborate with the Orange County

[28] Managing Mosquitoes in Stormwater Treatment Devices, Marco E. Metzger, University of California Davis, Division of Agriculture and Natural Resources, Publication 8125.

Vector Control District during the development and implementation of such treatment systems. The permittees should continue these collaborative efforts with the Vector Control District to ensure that treatment control systems do not become a nuisance or a potential source of pollutants. There are other site conditions that limit the applicability of infiltration, including site soils, contaminant plumes, potential mobilization of naturally occurring contaminants such as selenium, high groundwater levels, etc. Such factors should be considered in the design and implementation of storm water control measures.

M. NON-STORM WATER/DE-MINIMUS DISCHARGES

68. 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 generally referred to as de-minimus discharges. Federal regulations, 40 CFR Part 122.26(d)(2)(i)(B), prohibit the discharge of non-storm water containing pollutants into the MS4s and to waters of the U.S. unless they are regulated under a separate NPDES permit, or are exempt, as indicated in Discharge Prohibitions, Section III.3 of this order. The Regional Board adopted a number of NPDES permits[29] to address de-minimus type of pollutant discharges. However, the permittees need not get coverage under the de-minimus permits for the types of discharges listed under Section III.3, except for discharges to the Newport Bay watershed (where coverage under the Newport Bay watershed-specific de-minimus permit is required, see Finding 69), as long as they are in compliance with the conditions specified under Section III of this order.

69. Many areas of the San Diego Creek/Newport Bay watershed have high nitrate and/or selenium levels in the soils and/or groundwater. Dewatering operations, construction activities and agricultural and other operations could mobilize these pollutants and carry them into San Diego Creek and Newport Bay. The Regional Board has adopted a General Permit, Order No. R8-2007-0041, to regulate dewatering wastes into the San Diego Creek/Newport Bay watershed. In addition, stakeholders in the watershed are in the process of developing a comprehensive nitrogen/selenium management plan to address the nitrogen/selenium issues.

N. PERMIT REQUIREMENTS AND NUMERIC EFFLUENT LIMITS

70. The first term permit required the permittees to: (1) develop and implement the DAMP and a storm water and receiving water monitoring plan; (2) eliminate illicit discharges[30] to the MS4s; and (3) enact the necessary legal authority to effectively

[29] E.g., R8-2003-0061,as amended by R8-2004-0021.

[30] Illicit Discharge means any discharge to the municipal separate storm system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term illicit discharge includes all discharges that contain non storm-water discharges except discharges pursuant to an NPDES permit, discharges that are identified in Section III, Discharge Limitations/Prohibitions, of this order, and discharges authorized by the Regional Board Executive Officer.

prohibit such discharges. The overall goal of these requirements was to reduce pollutant loadings to surface waters from urban runoff to the MEP. The 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. The third term permit required the permittees to inspect construction sites and industrial and commercial facilities. The permittees were also required to develop and implement a model WQMP to address runoff from new development and significant redevelopment projects. The principal permittee, in co-operation with the co-permittees, developed administrative strategies and implementation procedures for each program element. Each permittee incorporated these tools into its LIP. The permittees are required to continue to implement each of these program elements and to aggressively pursue implementation of LID techniques during the fourth term permit. As required under the third term permit, the principal permittee, in collaboration with the co-permittees, evaluated the effectiveness of the overall program during the permit term. The permittees, in consultation with Regional Board staff, evaluated each program element and proposed new and improved program commitments in their 2006 Report of Waste Discharge. Regional Board staff audited each of the permittee programs during the third term permit and determined that some of the permittees had significant violations with respect to implementation of certain program elements. Enforcement actions were taken to bring these permittees into compliance. The permittees were required to address problems identified during the audit. Some of the permittees were to amend their LIPs to address deficiencies noted during the audit.

71. Based on the results of the audits performed during the 3rd term permit, a number of permit requirements have been incorporated into the current permit. While the 2001 DAMP listed criteria by which co-permittees were to assess the priority ranking of commercial sites, a number of co-permittees had interpreted those criteria in such a manner as to ensure that only a very small number of sites would be ranked 'High' and in some cases, all commercial sites within a municipality were ranked 'Low,' resulting in the least number of inspections possible. To address this situation, commercial site ranking now requires that a minimum 10% of the sites with the highest potential for pollutant discharge, be ranked 'High' and next 40% of highest potential sites be ranked 'Medium,' for inspection purposes.

72. The Report of Waste Discharge proposes to enhance implementation of various program elements through the development of performance indicators and auditable systems, and by focusing on addressing problems on a watershed-specific basis. To improve program management efficiencies, the permittees are proposing to define expertise and competencies for program managers and inspectors, and to develop and implement an effective training program for them. The principal permittee in collaboration with the co-permittees is required to develop guidelines for defining the expertise and competencies for various positions and training programs and schedules for training for these positions. In the event that co-permittees want to design their own training program, it should be prepared in collaboration with the principal permittee, and at a minimum, should contain all information present in the principal permittee-prepared training program. The permittees are required to document procedures used to determine the defined

competencies for each storm water position (this may be accomplished through a test at the end of the training program or through an on-the-job testing procedure).

73. This order includes wasteload allocations for those constituents for which either the U.S. EPA has promulgated or the Regional Board has established TMDLs. Federal regulations (40 CFR 122.44(d)(vii)(B)) require that the Permits be consistent with the applicable wasteload allocations in the TMDLs. Consistent with the federal storm water laws and regulations, the order does not include numeric effluent limits for other potential pollutants. Federal Clean Water Act requires the permittees to have appropriate controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and systems, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants (33 USC 1342(p)(3)(B)). MEP is a dynamic performance standard and it evolves as our knowledge of urban runoff control measures increases.

74. On June 17, 1999, the State Board adopted Water Quality Order No. 99-05. This is a precedential order that incorporates the receiving water limitations language recommended by the USEPA. Consistent with the State Board's order, this order requires the permittees to comply with the applicable water quality standards, which is to be achieved through an iterative approach requiring the implementation of increasingly more effective BMPs. This approach is consistent with most of the municipal storm water permits issued in California that specify certain minimum control measures and incorporate an iterative process that requires increasingly more effective control measures if the water quality objectives are not met.

O. MUNICIPAL FACILITIES AND ACTIVITIES

75. The permittees own and operate MS4s and appurtenances, build and maintain roads and other transportation facilities, sanitary waste collection and conveyance systems, recreational facilities such as parks, hiking trails, etc., and other infrastructures of the urban environment. This order requires the permittees to consider water quality impacts during the planning stages of these projects, during construction and post-construction use, and during operation and maintenance of these facilities. This order includes requirements for the control of trash and debris, for street sweeping, and for drainage facilities maintenance. The permittees have already installed eleven trash and debris booms in flood control channels and harbors to recover floatable material. The permittees have promoted a number of public awareness and volunteer cleanup programs. The Orange County Integrated Waste Management Board administers the household hazardous waste collection program. Most of the permittees, in collaboration with the Orange County Health Care Agency, implement the oil recycling program.

76. The permittees own and/or 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. The permittees have developed and are implementing a Model Municipal Activities Program that

established a framework for conducting a systematic program of evaluation and BMP implementation for fixed facilities, field operations and drainage facilities. 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, of this order, or are permitted by the Regional Board under an individual NPDES permit or the de-minimus permits.

77. Successful implementation of the provisions and limitations in this order will require the cooperation of 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 should actively participate in implementing the Orange County NPDES Storm Water Program. The Regional Board has the discretion and authority to require certain 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, a funding mechanism for the shared costs, and recognizes the Technical Advisory Committee (TAC).

78. The permittees have developed and implemented programs and policies to address fixed facilities, fertilizer and pesticide use, employee training, storm drain inspection and maintenance activities, and other related planning, inspection and maintenance programs. This order requires the permittees to continue these programs and propose any needed changes to these programs.

79. Some of the permittees own and operate sewage collection systems. Sanitary sewer overflows (SSOs) have been a significant source of water quality impairments and beach closures in Orange County. On May 2, 2006, the State Board adopted Water Quality Order No. 2006-0003 to provide a consistent statewide regulatory approach to address SSOs. In addition, the principal permittee, in collaboration with the Orange County Sanitation District and a number of the co-permittees, has developed the Countywide Area Spill Control Program to address SSOs in certain areas of Orange County. These two programs are expected to address issues related to SSOs.

P. PUBLIC EDUCATION/PARTICIPATION

80. 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. Public education includes education of the public at large, commercial establishments, industrial facilities and developers. It also includes proper training for municipal planning, inspection and maintenance activities. 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.

81. 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. In 2002, the permittees created a public and business outreach strategy and developed the "Orange County Stormwater Public Education Program Recommendations." This strategy was updated in 2004 and established a long-term cost-effective approach to educate the public and targeted businesses about the effects of storm water pollution and encourages their participation in protecting water quality. In accordance with this strategy the permittees conducted a public awareness survey and translated relevant public education materials into Spanish and Vietnamese. The permittees employed a variety of media, including newspapers, radio, television, movie theaters, advertisements on public transportation vehicles, schools and printed brochures to provide information regarding storm water pollution and the public's role in controlling it. In addition to the multi-media approach, the permittees have started to work with business establishments such as Home Depot and PetsMart, utilities such as Waste Management and Southern California Edison, organizations such as Chamber of Commerce and Welcome Express, and a number of other organizations and establishments. The permittees also established a countywide 24-hour, bilingual, hotline for reporting illegal activities that could impact water quality. This order requires implementation of LID techniques. If not properly designed and maintained, some of the LID BMPs could provide breeding areas for vectors. Public education and outreach materials should include a discussion on the association between disease vectors, urban runoff, storm water treatment control and LID BMPs.

82. 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 of each year. It is expected that the permittees would include comments received on any significant revisions to the Monitoring Plan, LIPs and WQMPs. In response to public comments, the permittees may modify reports, plans, or schedules prior to submittal to the Executive Officer.

Q. MONITORING AND REPORTING PROGRAM AND EFFECTIVENESS ASSESSMENT

83. 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. During the previous permit term, the permittees completed the 99-04 Monitoring Plan. This plan included storm water monitoring, receiving water monitoring, dry weather

monitoring and sediment monitoring in previously identified critical aquatic resources areas, as well as, mass emissions monitoring of both wet and dry season flows. On July 1, 2003, the permittees submitted the Third Term Monitoring Plan. This plan was approved by the Executive Officer on July 15, 2005. Monitoring under this plan was expanded to cover monitoring requirements for the development and implementation of TMDLs for impaired waters in Orange County. The Monitoring Plan approved in 2005, included mass emissions monitoring, estuary/wetlands monitoring, bacteriological/pathogen monitoring, bioassessment monitoring, illicit discharge reconnaissance monitoring, and land use correlations. Three different approaches were used for these monitoring programs: core monitoring, regional monitoring, and special studies. The permittees are required to review the monitoring program on an annual basis to determine the need for any revisions. The monitoring program may have to be revised to meet TMDL and ASBS monitoring requirements and/or to make the program consistent with any statewide or regional monitoring guidance developed either by the State Board or the Stormwater Monitoring Coalition.

R. ILLICIT DISCHARGES, ILLICIT CONNECTIONS AND LEGAL AUTHORITY

84. Illicit discharges to the storm drains can contribute to storm water and surface water contamination. A reconnaissance survey of the municipal storm drain systems (open channels and underground storm drains) was completed by the permittees during the third term permit, the permittees significantly enhanced the programmatic framework for detecting and quickly controlling discharges into the MS4s. The permittees have initiated a dry weather monitoring program that is based on statistically derived benchmarks to detect illicit discharges and illicit connections. The program also facilitates public reporting of illicit discharges by providing 24-hour access to a toll free hotline. The program has a number of mechanisms in place to identify and eliminate illicit discharges to the MS4s, including: construction, commercial and industrial facility inspections, drainage facility inspections, water quality monitoring programs, and public education including a 24-hour hotline. The permittees developed a ten module training program for training municipal staff to identify and eliminate illicit discharges to the MS4s and to take appropriate enforcement actions.

85. 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 has been adopted by all the permittees. A countywide Enforcement Consistency Guide was established by the permittees in 1995. These documents establish legal authority for enforcing storm water ordinances and countywide uniformity in the enforcement actions. The permittees have the authority to control pollutants into the MS4s, to prohibit illicit connections and illicit discharges, to control spills, to require compliance with local water quality ordinances and to carry out inspections of the storm drain systems within their jurisdictions.

86. During the third term permit, the principal permittees in collaboration with the Orange County Sanitation District developed and implemented a coordinated sewage spill prevention and response demonstration project. This program is being evaluated for implementation throughout the Orange County Sanitation District's service area.

87. There may be discharges that are not within the permittees jurisdiction. 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.

S. COMPLIANCE WITH CZARA, CEQA AND THE ANTI-DEGRADATION POLICY

88. The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), Section 6217(g), requires coastal states with approved coastal zone management programs to address non-point source pollution impacting or threatening coastal water quality. CZARA addresses five sources of non-point pollution: agriculture, silviculture, urban, marinas, and hydromodification. This order addresses the management measures required for the urban category, with the exception of septic systems. Compliance with requirements specified in this order relieves the permittees for developing a non-point source plan, for the urban category, under CZARA. The Regional Board addresses septic systems through the administration other programs.

89. 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.

90. 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 combination of programs and policies required to be implemented under this order for new and existing developments are designed to improve urban storm water quality.

T. PUBLIC COMMENTS AND PUBLIC HEARING

91. 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.

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

PERMIT 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

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

1. Conduct chemical and biological water quality monitoring, as required by this order and any additional monitoring as directed by the Executive Officer.
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, illicit discharges and illicit connections, etc., to prevent or reduce the discharge of pollutants to storm drain systems and waters of the US within its jurisdiction.
5. Take appropriate enforcement actions for illicit 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.

B. The activities of the principal permittee shall 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 areawide programs and activities necessary to comply with this order.
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 DAMP, and take such other actions as may be necessary to meet the MEP standard.
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, such as Monitoring Plans, Local Implementation Plans and significant changes to Water Quality Management Plans.
11. Cooperate in watershed management programs and regional and/or statewide monitoring programs.
12. In collaboration with the co-permittees, develop guidelines for defining expertise and competencies of storm water program managers and inspectors and develop and submit for approval a training program for various positions in accordance with these guidelines.

II. RESPONSIBILITIES OF THE CO-PERMITTEES

A. 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/LIP within each respective jurisdiction, and take any other actions as may be necessary to meet the MEP standard.
2. Coordinate among their internal departments and agencies, as appropriate, to facilitate the implementation of this order and the DAMP/LIP.
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 illicit discharges to the MS4 systems owned or controlled by the co-permittee.

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

1. Participate in the 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 areawide programs and activities necessary to comply with this order. 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 and attend at least 75% of the meetings each calendar year.

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 implementation plans, including physical elimination of undocumented connections and illicit discharges to drainage systems owned or controlled by the co-permittees.
4. Conduct and coordinate with the principal permittee any surveys and characterizations needed to identify pollutant sources and drainage areas.
5. Submit storm drain system maps, including any periodic revisions, with each annual report.
6. Respond to emergency situations, such as accidental spills, leaks, illicit discharges, illicit connections, etc., to prevent or reduce the discharge of pollutants to storm drain systems and waters of the US.
7. Prepare and submit all required reports to the principal permittee in a timely manner.

III. DISCHARGE LIMITATIONS/PROHIBITIONS

1. In accordance with the requirements of 40 CFR 122.26(d)(2)(i)(B) and 40 CFR 122.26(d)(2)(i)(F), the permittees shall prohibit illicit/illegal discharges (non-storm water) from entering into the municipal separate storm sewer systems unless such discharges are either authorized by a NPDES permit, or not prohibited in accordance with Section III.3, below.
2. The discharge of storm water from the MS4s to waters of the US containing pollutants that have not been reduced to the maximum extent practicable is prohibited.
3. 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 as otherwise specified in this provision. For purposes of this order, a discharge may include storm water or other types of discharges identified below.
    i. The discharges identified below need not be prohibited by the permittees unless such discharges are identified either by the permittees or by the Executive Officer as a significant source of pollutants. The DAMP shall include public education and outreach activities directed at reducing these discharges even if they are not substantial contributors of pollutants to the MS4s.
        a) Discharges composed entirely of storm water;
        b) Air conditioning condensate;
        c) Irrigation water;
        d) Passive foundation drains;
        e) Passive footing drains;

f) Water from crawl space pumps;

g) Non-commercial vehicle washing;

h) Dechlorinated swimming pool discharges (Cleaning wastewater and filter backwash shall not be discharged to the MS4).

i) Diverted stream flows;

j) Rising ground waters and natural springs;

k) Ground water infiltration as defined in 40 CFR 35.2005 (20) and uncontaminated pumped groundwater;

l) Flows from riparian habitats and wetlands;

m) Emergency fire fighting flows (i.e., flows necessary for the protection of life and property) do not require BMPs and need not be prohibited. However, where possible, when not interfering with health and safety issues, BMPs should be implemented (also see Section XXI, Provision 5);

n) Waters not otherwise containing wastes as defined in California Water Code Section 13050 (d); and

o) Other types of discharges identified and recommended by the permittees and approved by the Regional Board.

ii. The permittees shall prohibit the following categories of non-storm water discharges from permittee owned and/or operated facilities and activities unless the stated conditions are met:

a) For discharges outside the Newport Bay watershed the de minimus types of discharges listed in the Regional Board's General De Minimus Permit for Discharges to Surface Waters, Order No. R8-2009-0003, NPDES No. CAG 998001 (General De Minimus Permit), shall be in compliance with the terms and conditions of the General De Minimus Permit. Separate coverage under the General De Minimus Permit is not required. For discharges within the Newport Bay watershed, separate permit authorization for these de minimus discharges will be required when the discharges contain selenium, nitrogen or other pollutants at levels of concern.

b) Discharges from potable water sources, including water line flushing, superchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water: Planned discharges shall be dechlorinated to a concentration of 0.1 ppm[31] or less, pH adjusted if necessary, and volumetrically and velocity controlled to prevent causing hydrologic conditions of concern in receiving waters.

[31] Total residual chlorine = 0.1 mg/l or parts per million (ppm) or less; compliance determination shall be at a point before the discharge mixes with any receiving water.

c) Discharges from lawn, greenbelt and median watering and other irrigation runoff from non-agricultural operations[32]: These discharges shall be minimized through a Model Municipal Activity Maintenance Program designed to control irrigation runoff.

d) Dechlorinated swimming pool discharges: Dechlorinated to a concentration of 0.1 ppm[33] or less, pH adjusted and reoxygenated if necessary, and volumetrically and velocity controlled to prevent causing hydrologic conditions of concern in receiving waters. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4s.

e) Construction dewatering wastes: The maximum daily concentration limit for total suspended solids shall not exceed 75mg/l, sulfides 0.4mg/l, oil and grease15mg/l, total petroleum hydrocarbons 0.1mg/l.

f) Discharges from facilities that extract, treat and discharge water diverted from waters of the US: These discharges shall meet the following conditions: (1) The discharges to waters of the US must not contain pollutants added by the treatment process or pollutants in greater concentration than the influent; (2) The discharge must not cause or contribute to a condition of erosion; (3) The extraction and treatment must be in compliance with Section 404 of the Clean Water Act; and (4) Conduct monitoring in accordance with Monitoring and Reporting Program attached to this order.

The Regional Board 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 significant source of pollutants.

4. Non-storm water discharges from public agency activities into waters of the US are prohibited unless the non-storm water discharges are permitted by an NPDES permit or are included in Section III.3.

5. The permittees shall reduce the discharge of pollutants, including trash and debris, from the storm water conveyance systems to the maximum extent practicable (also see Section VII).

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

7. Discharges from the MS4s of storm water or non-storm water, as defined in Section III.3, shall not cause or contribute to a condition of pollution, contamination or nuisance, as those terms are defined in Section 13050 of the Water Code.

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[32] Non-agricultural irrigation using recycled water must comply with the statewide permit for Landscape Irrigation Using Recycled Water and the State Department Health guidelines.

[33] See previous footnote.

8. All discharges to Areas of Special Biological Significance shall be consistent with the Special Protections/Exceptions granted by the State Board, or waste discharges shall be prohibited in accordance with the Ocean 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. The DAMP and its components shall be designed to achieve compliance with receiving water limitations. It is expected that compliance with receiving water limitations will be achieved through an iterative process and the application of increasingly more effective BMPs. The permittees shall comply with Sections III.2 and IV.1 of this order through timely implementation of control measures and other actions to reduce pollutants in urban runoff in accordance with the DAMP and other requirements of this order, including any modifications thereto.
3. If exceedance of water quality standards persist, notwithstanding implementation of the DAMP and other requirements of this order, the permittees shall assure compliance with Sections III.2 and 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; and,

   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 the Executive Officer determines it is necessary to develop additional BMPs.

4. Nothing in Section IV.3 must prevent the Regional Board from enforcing any provision of this order while the permittee prepares and implements the above programs.

V. IMPLEMENTATION AGREEMENT

1. Within 6 months of adoption of this order, the existing Implementation Agreement shall be reviewed and revised, if necessary, to include any 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. Within 6 months of adoption of this order and annually thereafter, the permittees shall evaluate the storm water management structure and the Implementation Agreement and determine the need for any revisions. 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 adequate legal authority to control the discharge of pollutants to the MS4s from urban runoff and enforce those authorities. This may be accomplished through ordinance, statute, permit, contract or similar means. Such legal authority must address all illicit connections and illicit discharges into the MS4s, including those from all industrial and construction sites. The permittees may use the Enforcement Consistency Guide or develop its own enforcement program and shall incorporate the enforcement program into their Local Implementation Plan.

2. The permittees shall carry out inspections, surveillance, and monitoring necessary to determine compliance with their ordinances and permits. The Permittees' ordinance must include adequate legal authority, to the extent permitted by California and Federal Law and subject to the limitations on municipal action under the constitutions of California and the United States, to enter, inspect and gather evidence (pictures, videos, samples, documents, etc.) from industrial, construction and commercial establishments. The permittees shall progressively and decisively take enforcement actions against any violators of their Water Quality Ordinance. These enforcement actions must, at a minimum, meet the guidelines and procedures listed in the Enforcement Consistency Guide.
3. Permittees' ordinances or other local regulatory mechanisms shall include sanctions and follow up inspection milestones 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. Follow up inspection milestones shall be consistent with applicable sections of this order. Permittees' ordinances shall have a provision for civil or criminal penalties for violations of their water quality ordinances. These penalties shall be issued in a

decisive manner within a predetermined timeframe, from the time of the violation's occurrence and/or respective follow-up inspection.

4. Within one year of the adoption of this order, each permittee shall submit a statement, signed by legal counsel, that the permittee has obtained all necessary legal authority in accordance with 40 CFR 122.26(d)(2)(i)(A-F) and to comply with this order through adoption of ordinances and/or municipal code modifications.
5. If necessary, the permittees shall revise their LIPs to include citations of appropriate local ordinances, identification of departmental jurisdictions in the implementation and enforcement of these ordinances, and key personnel. The LIP shall include procedures and timeframes for progressive enforcement actions.
6. 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 those Statewide General Permits. The notification shall be provided on a quarterly basis[34] and shall include any observed violations, or threat of potential violations of the General Permits (e.g., problematic housekeeping issues) prior history of violations, any enforcement actions taken by the permittee, and any other relevant information. (Also see notification requirements under Sections VIII, IX, and X of this Order.)
7. The permittees shall annually review their water quality ordinances and provide findings within the annual report each year on the effectiveness of these ordinances and associated enforcement programs, 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 (also prohibited under the Statewide SSO order[35]);
   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/upholstery cleaning, pool cleaning and other such mobile commercial and industrial activities;
   e) Water from cleaning of municipal, industrial, and commercial sites, including parking lots, streets, sidewalks, driveways, patios, plazas, work yards and outdoor eating or drinking areas, etc.;

[34] The reporting schedule may be revised with the approval of the Executive Officer.

[35] State Board WQO No. 2006-0003.

f) Runoff from material storage areas or uncovered receptacles that contain chemicals, fuels, grease, oil, or other hazardous materials[36];

g) Discharges of runoff from the washing of toxic materials[37] from paved or unpaved areas;

h) Discharges of 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.; and,

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

8. The permittees are encouraged to enter into interagency agreements with owners of other MS4 systems, such as Caltrans, school and college districts, universities, Department of Defense, Native American Tribes, etc., to control the contribution of pollutants from one portion of the MS4s to another portion. The Regional Board will continue to notify the owner/operator of the MS4 systems and the local municipality if the Board issues a permit for discharges into the MS4 systems.

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

1. The permittees shall continue to prohibit all illicit connections to the MS4s through their ordinances, inspections, monitoring programs, and enforcement actions. The permittees shall conduct inspections for illicit connections and illicit discharges during routine maintenance of all MS4 facilities. If routine inspections or dry weather screening and/or monitoring indicate any illicit connections, they shall be investigated and eliminated or permitted within 120 days of discovery and identification.
2. The permittees shall control the discharge of spills, leaks, or dumping of any materials other than storm water and authorized non-storm water per Section III, above, into the MS4s. All reports of spills, leaks, and/or illegal dumping shall be promptly investigated and reported as specified under Section XVII.
3. Within six months of adoption of this order, the permittees shall evaluate the current Illicit Discharges/Illicit Connections Training Program. If necessary, the program shall be revised to meet the expected expertise and competencies of the municipal inspectors.

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[36] Hazardous material is defined as any substance that poses a threat to human health or the environment due to its toxicity, corrosiveness, ignitability, explosive nature or chemical reactivity. These also include materials named by EPA to be reported if a designed quantity of the material is spilled into the waters of the United States or emitted into the environment.

[37] Toxic material is a chemical or a mixture that may present an unreasonable risk of injury to health or the environment.

4. 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 US. These control measures shall be reported in the annual report.
5. By July 1st of each year the permittees shall review their litter/trash control ordinances to determine the need for any revision. At least once during the permit term, the principal permittee shall 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.
6. The permittees shall determine the need for any additional debris control measures. The findings shall be included in each annual report.
7. The permittees who are regulated under State Board's Water Quality Order No. 2006-0003 shall continue to comply with that order to control sanitary system overflows. The principal permittee shall continue to evaluate the applicability of the "Countywide Area Spill Control Program (CASC)" to all areas within the Santa Ana Regional Board's jurisdiction to control and mitigate sanitary sewer overflows. This evaluation shall be included in the first annual report due after adoption of this order. Within 12 months of adoption of this order, the principal permittee in collaboration with the Orange County Sanitation District, Irvine Ranch Water District and the co-permittees shall implement essential elements of the CASC or other equally effective programs (such as the Statewide SSO order) to control and mitigate sanitary sewer overflows in Orange County areas that are within the Region.

VIII. MUNICIPAL INSPECTIONS OF CONSTRUCTION SITES

1. Each permittee shall ensure that all construction activities within its jurisdiction are consistent with the Model Construction Program developed by the permittees.
2. Each permittee shall continue to maintain and update (at least on a biannual basis, once in September and the second update in May) an inventory of all construction sites within its jurisdiction for which building or grading permits have been issued and where activities at the site include: soil movement; uncovered storage of materials or wastes, such as dirt, sand or fertilizer; or exterior mixing of cementaceous products, such as concrete, mortar or stucco. All construction sites, as described above, shall be included regardless of whether the construction site is subject to the General Construction Permit or other individual NPDES permit. This inventory shall be maintained in the 2002 Spreadsheet developed by the permittees or a similar computer-based database system and shall include relevant information on site ownership, General Construction Permit WDID number (if any), size, location (latitude/longitude [in decimals] or NAD83/WGS84[38] compatible formatting), inspection data, etc.
3. The permittees shall continue to prioritize construction sites within their jurisdictions as a high, medium or low threat to water quality. Evaluation of construction sites

[38] NAD83/WGS84=North American Datum of 1983 and World Geodetic System of 1984 are systems to define three-dimensional coordinates of a single physical point.

shall be based on factors, which shall include, but not be limited to: soil erosion potential, project size, site slope, proximity to and sensitivity of receiving waters and any other relevant factors. At a minimum, high priority construction sites shall include: sites 20 acres and larger; sites over 1 acre that are tributary to Clean Water Act Section 303(d) waters listed for sediment or turbidity impairments; and sites that are tributary to and within 500 feet of an area defined by the Ocean Plan as an Area of Special Biological Significance (ASBS). At a minimum, medium priority construction sites shall include sites between 5 to 20 acres of disturbed soil.

4. Each permittee shall conduct construction site inspections, subject to limitations on municipal action under the constitutions of California and the United States, for compliance with its ordinances (grading, Water Quality Management Plans, etc.), local permits (construction, grading, etc.), the Model Construction Program and the Construction Runoff Guidance Manual, both developed by the permittees. The permittees must develop a checklist for conducting construction site inspections. Inspections of construction sites shall include, but not be limited to:

   a) Verification of coverage under the General Construction Permit (Notice of Intent or Waste Discharge Identification Number, WDID Number) during the initial inspection;

   b) A documented review of the Erosion and Sediment Control Plan (ESCP) to ensure that the BMPs to be implemented on-site are consistent with the appropriate phase of construction (Preliminary Stage, Mass Grading Stage, Streets and Utilities Stage, etc.);

   c) Visual observation for non-storm water discharges and potential pollutant sources;

   d) Determination of compliance with local ordinances, permits, Water Quality Management Plans, Construction Runoff Guidance Manual and other relevant requirements including the implementation and maintenance of BMPs required under local requirements; and,

   e) An assessment of the effectiveness of BMPs implemented at the site and the need for any additional BMPs.

5. At a minimum, the inspection frequency shall include the following:

   a) 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 properly controlled and that unauthorized, non-storm water discharges are prevented.

   b) 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 priority sites are to be inspected at least twice during the wet season. All low priority sites are to be inspected at least once 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.

6. To establish a consistent enforcement program for non-compliant construction sites, the permittees shall enforce their ordinances and permits at all construction sites in a fair, firm and consistent manner. If necessary, the permittees shall revise their LIPs within 12 months of adoption of this order to include a mechanism to notify and to establish a clear and coordinated enforcement linkage for further enforcement action with Regional Board staff. Sanctions for non-compliance must include: a written enforcement order at the time of inspection and other appropriate actions, such as Administrative Compliance Orders, Cease and Desist Orders, Stop Work Orders, Misdemeanor/Infractions, monetary penalties, bonding requirements and/or permit denial or administrative termination.
7. All violations shall be notified as per Section XVII.
8. Each permittee shall respond to complaints received from third parties in a timely manner to ensure that the construction sites are not a source of pollutants in the MS4s and the receiving waters.
9. All construction site inspectors shall be trained in accordance with Section XVI.

IX. MUNICIPAL INSPECTIONS OF INDUSTRIAL FACILTIES

1. Each permittee shall continue to maintain an inventory of industrial facilities within its jurisdiction. All sites that have the potential to discharge pollutants to the MS4 should be included in this inventory regardless of whether the facility is subject to business permits, licensing, the State's 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 required, with latitude/longitude (in decimals) or NAD83/WGS84[39] compatible formatting.
2. To establish priorities for inspection requirements under this order, the permittees shall continue to prioritize industrial facilities within their jurisdiction as a high, medium or low threat to water quality. Continuous 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. 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); facilities requiring coverage under the General Industrial Permit; facilities with a high potential for, or history of, unauthorized, non-storm water discharges; and facilities that are tributary to, and within 500 feet of, an area defined by the Ocean Plan as an Area of Special Biological Significance.

[39] See Footnote 38.

3. Each permittee shall conduct industrial facility inspections, subject to limitations on municipal action under the constitutions of California and the United States, for compliance with its ordinances, permits and this order. Inspections shall include a review of material and waste handling and storage practices, written documentation of pollutant control BMP implementation and maintenance procedures and digital photographic documentation for any water quality violations, as well as, evidence of past or present unauthorized, non-storm water discharges and enforcement actions issued at the time of inspection. All high priority facilities identified in Section IX.2 shall be inspected at least once a year and a report on these inspections shall be submitted in the annual report for each year.
4. 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 enforcement order shall be issued and a re-inspection frequency schedule 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 six months will be maintained for the next calendar year.
5. Each permittee shall continually identify any industrial facilities within their jurisdiction and shall add them to the database, as identified in Section IX.1. Additionally, each facility shall be listed with its respective prioritization in accordance with the specifications identified in Section IX.2, within 15 days from the initial date of discovery of the facility.
6. Information including, at a minimum, inspection dates, inspectors present, the photographic and written results of the inspection and any enforcement actions taken must be maintained in the database identified in Section IX.1 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 facilities in accordance with the Enforcement Consistency Guide to maintain compliance with this order. At a minimum, each facility shall be required to implement source control and pollution prevention measures consistent with the BMP Fact Sheets developed by the permittees. Sanctions for non-compliance shall be adequate to bring the site into compliance and must include: an oral or written warning for minor violations at the time of inspection, a written enforcement order for violations that pose a threat to water quality that should include consideration of monetary penalties, bonding requirements and/or permit denial or revocation depending on the severity of the violation and in accordance with the Enforcement Consistency Guide.
8. Regional Board shall be notified of all violations in accordance with Section XVII.
9. Industrial site inspectors shall be trained as stipulated in Section XVI.

10. The permittees need not inspect facilities already inspected by Regional Board staff, if the inspection was conducted within the specified time period[40].

X. MUNICIPAL INSPECTIONS OF COMMERCIAL FACILITIES

1. Each permittee shall continue to maintain and update quarterly an inventory of the types of commercial facilities/businesses listed below within its jurisdiction[41]. As required under the third term permit, this inventory must be maintained in a computer-based database system (Commercial Database) and must include relevant information on ownership, size, location, etc. For fixed facilities, inclusion of a Geographical Information System (GIS), with latitude/longitude (in decimals) or NAD83/WGS84[42] compatible formatting is required. For water quality planning purposes, the permittees should consider using a parcel-level GIS that contains an inventory of the types of facilities/discharges listed below.

   Commercial facilities may include, but may not be limited to[43]:

   a) Transport, storage or transfer of pre-production plastic pellets.
   b) Automobile mechanical repair, maintenance, fueling or cleaning;
   c) Airplane maintenance, fueling or cleaning;
   d) Marinas and boat maintenance, fueling or cleaning;
   e) Equipment repair, maintenance, fueling or cleaning;
   f) Automobile impound and storage facilities;
   g) Pest control service facilities;
   h) Eating or drinking establishments, including food markets and restaurants;
   i) Automobile and other vehicle body repair or painting;
   j) Building materials retail and storage facilities;
   k) Portable sanitary service facilities;
   l) Painting and coating;
   m) Animal facilities such as petting zoos and boarding and training facilities;
   n) Nurseries and greenhouses;
   o) Landscape and hardscape installation;
   p) Pool, lake and fountain cleaning;
   q) Golf courses;
   r) Other commercial sites/sources that the permittee determines may contribute a significant pollutant load to the MS4; and,
   s) Any commercial sites or sources that are tributary to and within 500 feet of an area defined by the Ocean Plan as an Area of Special Biological Significance.

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[40] An appropriate framework for inspection coordination will be developed by Regional Board staff and the permittees.

[41] The inventory update schedule may be revised with the approval of the Executive Officer.

[42] See Footnote 38.

[43] Mobile cleaning services are addressed in X.8, below.

2. Each permittee shall conduct, or require to be completed, inspections of its commercial facilities as indicated below and subject to limitations on municipal action under the constitutions of California and the United States. To establish priorities for inspection, the permittees shall continue to prioritize commercial facilities/businesses within their jurisdiction as a high, medium or low threat to water quality based on such factors as the type, magnitude and location of the commercial activity, potential for discharge of pollutants to the MS4, any history of unauthorized, non-storm water discharges, proximity and sensitivity of receiving waters, material used and wastes generated at the site. Within 12 months of adoption of this order, the permittees shall develop a prioritization and inspection schedule for the commercial facilities in Section X.1 for review and approval by the Executive Officer. Until that plan is approved, the following minimum criteria must be met for prioritization of commercial sites for inspections: 10% of commercial sites (not including restaurants/food markets) must be ranked 'high' and these represent the greatest threat to water quality[44]; 20% of commercial sites (not including restaurants/food markets) must be ranked 'medium'; and, the remainder may be ranked 'low'.

3. Each permittee shall conduct, or require to be completed, commercial facility inspections, at frequencies as determined by the threat to water quality prioritization, for compliance with its ordinances, permits and this order. All high priority sites shall be inspected at least once a year; all medium priority sites shall be inspected at least every two years; and all low priority sites shall be inspected at least once per permit cycle. At a minimum, each facility shall be required to implement source control and pollution prevention measures consistent with the BMP Fact Sheets developed by the permittees. Inspections should include a review of control measures implemented, their effectiveness and maintenance; written and photographic documentation of materials and waste handling and storage practices; evidence of past or present unauthorized, non-storm water discharges; and an assessment of management/employees awareness of storm water pollution prevention measures.

4. 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, a written enforcement order shall be issued, at the time of inspection, to bring the site into compliance.

5. Information, including inspection dates, inspectors present, the written and photographic documentation results of the inspection and any enforcement actions including mitigative compliance orders must be maintained in the Commercial Database or must be linked to that database. A copy of this database must be provided to the Regional Board with each annual report.

6. Each permittee shall enforce its ordinances and permits at commercial facilities. Sanctions for non-compliance must include: enforcement orders issued at the time of inspections, monetary penalties, bonding requirements and/or permit denial or

[44] Where there are less than 100 commercial sites within a municipality, at least 10 sites must be ranked 'High'.

revocation. Sanctions shall be consistent with methods and protocols established in the Enforcement Consistency Guide.

7. All violations shall be notified as specified in Section XVII.
8. Within 12 months of adoption of this order, the permittees shall develop a mobile business pilot program. The pilot program shall address one category of mobile business from the following list: mobile auto washing/detailing; equipment washing/cleaning; carpet, drape and furniture cleaning; mobile high pressure or steam cleaning. The pilot program shall include at least two notifications of the individual businesses operating within the County regarding the minimum source control and pollution prevention measures that the business must implement. The pilot program shall include outreach materials for the business and an enforcement strategy to address mobile businesses. The permittees shall also develop and distribute the BMP Fact Sheets for the selected mobile businesses. At a minimum, the mobile business Fact Sheets should include: laws and regulations dealing with urban runoff and discharges to storm drains; appropriate BMPs and proper procedure for disposing of wastes generated.
9. The principal permittee shall continue to maintain a restaurant inspection program, or coordinate and collaborate with the Orange County Health Care Agency's restaurant inspection program. The restaurant inspection program shall, at a minimum, continue to conduct annual inspections that address:
   a) Oil and grease disposal to verify that these wastes are not poured onto a parking lot, street or adjacent catch basin;
   b) Trash bin areas to verify that these areas are clean, the bin lids are closed, the bins are not filled with liquid and the bins have not been washed out;
   c) Parking lot, alley, sidewalk and street areas to verify that floor mats, mops, filters and garbage containers are not washed in those areas and that no washwater is poured in those areas or discharged to the MS4;
   d) Parking lot areas to verify that they are cleaned by sweeping, not by hosing down and that the facility operator uses dry methods for spill cleanup; and,
   e) Inspection of existing devices designed to separate grease from wastewater (e.g., grease traps or interceptors) to ensure adequate capacity and proper maintenance is currently performed under the Fats, Oils and Grease (FOG) program (the FOG inspections conducted under the Statewide SSO order (Water Quality Order No. 2006-0003) could be substituted for this inspection).

   All violations of the Water Quality Ordinance should be enforced by the permittees and all violations of the Health and Safety Code should be enforced by the Health Care Agency.
10. All commercial site inspectors shall be trained as specified in Section XVI.

11. The permittees need not inspect facilities already inspected by Regional Board staff if the inspection was conducted within the specified time period[45].

XI. RESIDENTIAL PROGRAM

1. Each permittee shall develop and implement a residential program to reduce the discharge of pollutants from residential facilities to the MS4s consistent with the maximum extent practicable standard so as to prevent discharges from the MS4s from causing or contributing to a violation of water quality standards in the receiving waters.
2. The permittees should identify residential areas and activities that are potential sources of pollutants and develop Fact Sheets/BMPs. At a minimum, this should include: residential auto washing and maintenance activities; use and disposal of pesticides, herbicides, fertilizers and household cleaners; and collection and disposal of pet wastes. The permittees shall encourage residents to implement pollution prevention measures. The permittees should work with sub-watershed groups (e.g., the Serrano Creek Conservancy) to disseminate latest research information, such as the UC Master Gardeners Program[46] and USDA's Backyard Conservation Program[47].
3. The permittees, collectively or individually, shall facilitate the proper collection and management of used oil, toxic and hazardous materials, and other household wastes. Such facilitation should include educational activities, public information activities, and establishment of curbside or special collection sites managed by the permittees or private entities, such as solid waste haulers.
4. Within 18 months of adoption of this order, the permittees shall develop a pilot program to control pollutant discharges from common interest areas and areas managed by homeowner associations or management companies. The permittees should evaluate the applicability of programs such as the Landscape

[45] An appropriate framework for inspection coordination will be developed by Regional Board staff and the permittees.

[46] The UC Master Gardener volunteer program provides gardening and horticulture information to the residents of Orange County through trained volunteers who disseminate University research based scientific information.

[47] Backyard Conservation, Bringing Conservation from the Countryside to Your Backyard, USDA Natural Resources Conservation Service, National Association of Conservation Districts, Wildlife Habitat Council and National Audubon Society.

Performance Certification Program[48] to encourage efficient water use and to minimize runoff[49].

5. The permittees shall enforce their Water Quality Ordinance for all residential areas and activities. The permittees should encourage new developments to use weather-based evapotranspiration (ET) irrigation controllers[50].
6. Each permittee shall include an evaluation of its Residential Program in the annual report starting with the first annual report after adoption of this order.

XII. NEW DEVELOPMENT (INCLUDING SIGNIFICANT RE-DEVELOPMENT)

A. GENERAL REQUIREMENTS:

1. The permittees shall continue to maintain a computerized database to ensure (prior to issuance of any local permits or other approvals) that all construction sites that are required to obtain coverage under the State's General Construction Permit have filed with the State Board a Notice of Intent for coverage under the General Permit.
2. Within 12 months of adoption of this order, the principal permittee, in collaboration with the co-permittees, shall develop a guidance document for the preparation of conceptual or preliminary WQMPs to more effectively ensure that water quality protection, including LID principles, is considered in the earliest phases of a project. Within 18 months of adoption of this order, each permittee shall revise its LIP to be consistent with the guidance. The permittees are encouraged to require submission of a conceptual WQMP as early in the planning process as possible.
3. Each permittee shall minimize the short and long-term impacts on receiving water quality from new developments and significant re-developments, as required in Section XII.B.2., below, by requiring the submittal of a WQMP, emphasizing implementation of LID principles and addressing hydrologic conditions of concern, prior to issuance of any grading or building permits and/or prior to recordation of any subdivision maps.
4. In the first annual report following adoption of this permit, the permittees shall include a summary of their review of the watershed protection principles and policies in their General Plan and related documents (such as Development Standards, Zoning Codes, Conditions of Approval, Development Project Guidance, Local Coastal Plan, etc.) to ensure that these principles and policies,

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[48] For example, see the Metropolitan Water District of Orange County's Evaluation of the Landscape Performance Certification Program, January 2004.

[49] The Residential Runoff Reduction Study, Municipal Water District of Orange County, Irvine Ranch Water District and Metropolitan Water District of Southern California, July 2004.

[50] Westpark Study, Municipal Water District of Orange County, Irvine Ranch Water District and Metropolitan Water District of Southern California, 2001.

including LID principles, are properly considered and are incorporated into these documents. These principles and policies should include, but not be limited to, LID principles discussed in Section XII. C and hydrologic conditions of concern discussed in Section XII. D. Within 6 months of adoption of this order, the principal permittee shall facilitate the formation of a technical advisory committee (TAC) consisting of the Community Development/Planning Department directors of the co-permittees to effectively incorporate watershed protection principles (including LID) and policies during the early stages of a project. The TAC shall meet at least on an annual basis to develop common development standards, zoning codes, conditions of approval and other principles and policies necessary for water quality protection. Each annual report shall include a brief summary of the TAC meetings including its recommendations.

5. 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.

6. The permittees shall review their planning procedures and CEQA document preparation processes at the time of DAMP finalization and no later than 24 months after adoption of this order, to ensure that urban runoff-related issues are properly considered and addressed. If necessary, these processes shall be revised to consider and mitigate impacts to storm water quality. Should findings of the review result in changes to the above processes, the permittee shall include these changes in the LIP and submit a revised copy of the LIP to the Regional Board with the next annual report. The permittees shall ensure that the following potential impacts are considered during CEQA reviews:

   a) Potential impact of project construction on storm water runoff;

   b) Potential impact of project's post-construction activity on storm water runoff;

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

   d) Potential for discharge of storm water to affect the beneficial uses of the receiving waters;

   e) Potential for significant changes in the flow velocity or volume of storm water runoff to cause environmental harm; and,

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

   g) Potential decreases in quality and quantity of recharge to groundwater.

   h) Potential impact of pollutants in storm water runoff from the project site on any 303(d) listed waterbodies.

7. The permittees shall modify the project approval process in conjunction with preparation of the DAMP finalization, consistent with the guidance for conceptual

or preliminary WQMP, to ensure that proper conditions of approval, design specifications and tracking mechanisms are included.

8. The permittees shall train their employees involved with the preparation and/or review of CEQA documents as specified in Section XVI.

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

1. The permittees shall annually review the existing structural treatment control and other BMPs for New Developments and submit any changes for review and approval by the Executive Officer. Within 12 months of adoption of this order, the principal permittee shall revise the appropriate tables in the Water Quality Management Plan with the latest information on BMPs and provide additional clarification regarding their effectiveness and applicability.
2. Each permittee shall ensure that an appropriate WQMP is prepared for the following categories of new development/significant redevelopment projects (priority development projects). The WQMP shall be developed in accordance with the approved Model WQMP and shall incorporate LID principles in the WQMP.
   a. All significant redevelopment projects, where significant redevelopment is defined as projects that include the addition or replacement of 5,000 square feet or more of impervious surface on a developed site. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of the facility, or emergency redevelopment activity required to protect public health and safety. Where redevelopment results in the addition or replacement of less than fifty percent of the impervious surfaces of a previously existing developed site, and the existing development was not subject to WQMP requirements, the numeric sizing criteria discussed below applies only to the addition or replacement, and not to the entire developed site. Where redevelopment results in the addition or replacement of more than fifty percent of the impervious surfaces of a previously existing developed site, the numeric sizing criteria applies to the entire development.
   b. New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single family home subdivisions, multi-family attached subdivisions (town homes), condominiums, apartments, etc.), mixed-use, and public projects. This category includes development projects on public or private land, which fall under the planning and building authority of the permittees.
   c. Automotive repair shops (with SIC codes 5013, 5014, 5541, 7532-7534, 7536-7539).
   d. Restaurants where the land area of development is 5,000 square feet or more.

e. All hillside developments on 5,000 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.

f. Developments of 2,500 square feet of impervious surface or more, adjacent to (within 200 feet) or discharging directly[51] 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.

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

h. Streets, roads, highways and freeways of 5,000 square feet or more of paved surface shall incorporate USEPA guidance, "Managing Wet Weather with Green Infrastructure: Green Streets" in a manner consistent with the maximum extent practicable standard. This category includes any paved surface used for the transportation of automobiles, trucks, motorcycles and other vehicles and excludes any routine road maintenance activities where the footprint is not changed.

i. Retail gasoline outlets of 5,000 or more square feet with a projected average daily traffic of 100 or more vehicles per day.

j. Emergency and public safety projects in any of the above-listed categories may be excluded if the delay caused due the requirement for a WQMP compromises public safety, public health and/or environmental protection.

3. WQMPs shall include BMPs for source control, pollution prevention, site design, LID implementation (see Section C., below) and structural treatment control BMPs. For all structural treatment controls, WQMPs shall identify the responsible party for maintenance of the treatment system, vector minimization and control measures, and a funding source or sources for its operation and maintenance. WQMPs shall include control measures for any listed pollutant[52] to an impaired waterbody on the 303(d) list such that the discharge shall not cause or contribute to an exceedance of receiving water quality objectives. The permittees shall require the following source control BMPs for each priority development project, unless formally substantiated as unwarranted in a written submittal to the permittee:

a) Minimize contaminated runoff, including irrigation runoff, from entering the MS4s;

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[51] Discharging directly means a drainage or conveyance which carries flows entirely from the subject development and not commingled with any other flows.

[52] For a waterbody listed under Section 303(d) of the Clean Water Act, the pollutant that is causing the impairment is the "listed pollutant".

b) Provide appropriate secondary containment and/or proper covers or lids for materials storage, trash bins, and outdoor processing and work areas;

c) Minimize storm water contact with pollutant sources;

d) Provide community car wash and equipment wash areas that discharge to sanitary sewers;

e) Minimize trash and debris in storm water runoff through regular street sweeping and through litter control ordinances.

f) The pollutants in post-development runoff shall be reduced using controls that utilize best management practices, as described in the California Stormwater Quality Handbooks, Caltrans Storm Water Quality Handbook or other reliable sources.

4. At a minimum, structural BMPs shall be designed and built in accordance with the approved model WQMP and must be sized to comply with one of the following numeric sizing criteria:

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 County of Orange's 85th Percentile Precipitation Isopluvial Map[53]; 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; 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, for each hour of a storm event; or,

[53] The isopluvial map is available from: http://www.ocwatersheds.com/StormWater/PDFs/2003 DAMP Section 7 New Development Significant Redevelopment.pdf.

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,

3) The maximum flow rate of runoff, as determined from the local historical rainfall record, which 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.

5. To protect ground water resources any structural infiltration BMPs shall meet the following minimum requirements:

   a) Use of structural infiltration treatment BMPs shall not cause or contribute to an exceedance of groundwater water quality objectives.

   b) Source control and pollution prevention control BMPs shall be implemented in conjunction with structural infiltration BMPs to protect groundwater quality. The need for sedimentation or filtration should be evaluated prior to infiltration.

   c) Structural infiltration treatment BMPs shall not cause a nuisance or pollution, as defined in Water Code Section 13050.

   d) The vertical distance from the bottom of the infiltration system to the seasonal high groundwater must be at least 10 feet. Where the groundwater basins do not support beneficial uses, this vertical distance criteria may be reduced, provided groundwater quality is maintained.

   e) The infiltration systems must be located at least 100 feet horizontally from any water supply wells.

   f) Infiltration systems must not be used for areas of industrial or light industrial activity; areas subject to high vehicular traffic (25,000 or more daily traffic) automotive repair shops; car washes; fleet storage areas; nurseries; or any other high threat to water quality land uses or activities[54].

   g) Within 18 months of adoption of this order, the principal permittee shall develop a pilot program to monitor the impact of groundwater infiltration systems on the quality of groundwater. This monitoring program may be conducted by: (1) analyzing the quality of the runoff prior to infiltration; (2) by monitoring the quality of the infiltrate through the vadose zone; or (3) by monitoring groundwater quality upstream and downstream of the infiltration systems. The results of the pilot study shall be submitted with the next annual report.

6. Within 12 months from the date of adoption of this order, the principal permittee shall develop recommendations for streamlining regulatory agency approval of

[54] This restriction applies only to sites that are known to have soil and/or groundwater water contamination. Recent studies by the Los Angeles and San Gabriel Watershed Council of Storm Water Recharge has shown that there is no statistically significant degradation of groundwater quality from the infiltration of storm water-borne constituents.

regional treatment control BMPs. The recommendations should include information needed to be submitted to the Regional Board for consideration of regional treatment control BMPs. At a minimum, it should include: BMP location; type and effectiveness in removing pollutants of concern; projects tributary to the regional treatment system; engineering design details; funding sources for construction, operation and maintenance; and parties responsible for monitoring effectiveness, operation and maintenance.

7. The permittees shall require non-priority development projects to document, via a WQMP or similar mechanism, site design, source control and any other BMPS which may or may not include treatment control BMPs.

C. LOW IMPACT DEVELOPMENT TO CONTROL POLLUTANTS IN URBAN RUNOFF FROM NEW DEVELOPMENT/SIGNIFICANT REDEVELOPMENT:

1. Within 12 months of adoption of this order, the permittees shall update the model WQMP to incorporate LID principles (as per Section XII.C) and to address the impact of urbanization on downstream hydrology (as per Section XII.D) and a copy of the updated model WQMP shall be submitted for review and approval by the Executive Officer[55]. As provided in Section XII.J, 90 days after approval of the revised model WQMP, priority development projects shall implement LID principles described in this section, Section XII.C. To the extent that the Executive Officer has not approved the feasibility criteria within 18 months of adoption of this order as provided in Section XII.E.1, the infeasibility of implementing LID BMPs shall be determined through project specific analyses, each of which shall be submitted to the Executive Officer, 30 days prior to permittee approval.
2. The permittees shall reflect in the WQMP and otherwise require that each priority development project infiltrate, harvest and re-use, evapotranspire, or bio-treat[56] the 85th percentile storm event ("design capture volume"), as specified in Section XII.B.4.A.1, above. Any portion of the design capture volume that is not infiltrated, harvested and re-used, evapotranspired or bio-treated[57] onsite by LID BMPs shall be treated and discharged in accordance with the requirements set forth in Section XII.C.7 and/or Section XII.E, below.

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[55] The Executive Officer shall provide members of the public with notice and at least a 30-day comment opportunity for all documents submitted in accordance with this order. If the Executive Officer, after considering timely submitted comments, concludes that the document is adequate or adequate with specified changes, the Executive Officer may approve the document or present it to the Board for its consideration at a regularly scheduled and noticed meeting. If there are significant issues that cannot be resolved by the Executive Officer, the document will be presented to the Board for its consideration at a regularly scheduled meeting.

[56] A properly engineered and maintained bio-treatment system may be considered only if infiltration, harvesting and reuse and evapotranspiration cannot be feasibly implemented at a project site (feasibility criteria will be established in the model WQMP [Section XII.C.1] and the technically-based feasibility criteria [Section XII.E.1]). Specific design, operation and maintenance criteria for bio-treatment systems shall be part of the model WQMP that will be produced by the permittees.

[57] For all references to bio-treat/bio-treatment, see footnote 56.

3. The permittees shall incorporate LID site design principles to reduce runoff to a level consistent with the maximum extent practicable standard during each phase of priority development projects. The permittees shall require that each priority development project include site design BMPs during development of the preliminary and final WQMPs. The design goal shall be to maintain or replicate the pre-development hydrologic regime through the use of design techniques that create a functionally equivalent post-development hydrologic regime through site preservation techniques and the use of integrated and distributed micro-scale storm water infiltration, retention, detention, evapotranspiration, filtration and treatment systems as close as feasible to the source of runoff. Site design considerations shall include, but not be limited to:

   a) Limit disturbance of natural water bodies and drainage systems; conserve natural areas; preserve trees; minimize compaction of highly permeable soils; protect slopes and channels; and 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 durations and volumes from a site have no significant adverse impact on downstream erosion and stream habitat; minimize the quantity of storm water directed to impermeable surfaces and the MS4s; minimize paving, minimize runoff by disconnecting roof leader and other impervious areas and directing the runoff to pervious and/or landscaped areas, minimize directly connected impervious areas; design impervious areas to drain to pervious areas; consider construction of parking lots, walkways, etc., with permeable materials; minimize pipes, culverts and engineered systems for storm water conveyance thereby minimizing changes to time of concentration on site; utilize rain barrels and cisterns to collect and re-use rainwater; maximize the use of rain gardens and sidewalk storage; and maximize the percentage of permeable surfaces distributed throughout the site's landscape to allow more percolation of storm water into the ground;

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

   d) Use properly designed and well maintained water quality wetlands, bio-retention areas, filter strips and bio-filtration swales; consider replacing curbs gutters and conventional storm water conveyance systems with bio-treatment systems, where such measures are likely to be effective and technically and economically feasible;

   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;

g) Implement effective education programs to educate property owners to use pollution prevention measures and to maintain on-site hydrologically functional landscape controls; and

h) During the early planning stages of a project, the LID principles shall be considered to address pollutants of concern identified in the Watershed Action Plans and TMDL Implementation Plans, and the LID BMPs shall be incorporated into the sites conceptual WQMP.

4. The selection of LID principles shall be prioritized in the following manner (from highest to the lowest priority): (1) Preventative measures (these are mostly non-structural measures, e.g., preservation of natural features to a level consistent with the maximum extent practicable standard; minimization of runoff through clustering, reducing impervious areas, etc.) and (2) Mitigation (these are structural measures, such as, infiltration, harvesting and reuse, bio-treatment, etc. The mitigation or structural site design BMPs shall also be prioritized (from highest to lowest priority): (1) Infiltration (examples include permeable pavement with infiltration beds, dry wells, infiltration trenches, surface and sub-surface infiltration basins. All infiltration activities should be coordinated with the groundwater management agencies, such as the Orange County Water District); (2) Harvesting and Re-use (e.g., cisterns and rain barrels); and (3) Bio-treatment such as bio-filtration/bio-retention.

5. Even though the LID principles are universally applicable, there could be constraining factors, such as: soil conditions, including soil compaction, saturation (e.g., hydric soils) and permeability, groundwater levels, soil and/or groundwater contaminants (Brownfield developments), space restrictions (in-fill projects, redevelopment projects, high density development, transit-oriented developments), naturally occurring contaminants (e.g., selenium in the soil and the groundwater in the Newport Bay Watershed), etc. In such cases, the LID principles could be integrated into other programs, such as: Smart Growth[58], New Urbanism[59] or regional or sub-watershed management approaches. Also see Section E, below, for alternatives and in-lieu programs.

6. The LID BMPs shall be designed to mimic pre-development site hydrology through technically and economically feasible preventive and mitigative site design techniques. LID combines hydrologically functional site design with pollution prevention methods to compensate for land development impact on hydrology and water quality.

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[58] Smart Growth refers to the use of creative strategies to develop ways that preserve natural lands and critical environmental areas, protect water and air quality, and reuse already-developed land.

[59] New Urbanism is somewhat similar to Smart Growth and is based on principles of planning and architecture that work together to create human-scale, walkable communities that preserve natural resources.

7. If site conditions do not permit infiltration, harvesting and re-use, and/or evapotranspiration, and/or bio-treatment of the design capture volume at the project site as close to the source as possible, the alternatives discussed below should be considered and the credits and in-lieu programs discussed under Section E, below, may be considered:

   a. Implement LID principles at the project site. This is the preferred approach. For example, in a single family residential development: connect roof drains to a landscaped area, divert driveway runoff to a vegetated strip and minimize any excess runoff generated from the development. The pervious areas to which the runoff from the impervious areas are connected should have the capacity to infiltrate, harvest, evapotranspire and/or bio-treat and re-use at least the design capture volume.

   b. Implement as many LID principles as possible at the project site close to the point of storm water generation and infiltrate and/or harvest and re-use at least the design capture volume through designated infiltration/treatment areas elsewhere within the project site. For example, at a condominium development: connect the roof drains to landscaped areas, construct common parking areas with pervious asphalt with a sub-base of rocks or other materials to facilitate percolation of storm water, direct road runoff to curbless, vegetated sidewalks. The pervious areas which receive runoff from impervious areas should have the capacity to infiltrate, harvest and re-use, evapotranspire and/or bio-treat at least the design capture volume.

   c. Implement LID on a sub-regional basis. For example, at a 100 unit high density housing unit with a small strip mall and a school: connect all roof drains to vegetated areas (if there are any vegetated areas, otherwise storm water storage and reuse may be considered or else divert to the local storm water conveyance system, to be conveyed to the local treatment system), construct a storm water infiltration gallery below the school playground to infiltrate and/or harvest and re-use the design capture volume. The pervious areas to which the runoff from the impervious areas are connected should have the capacity to infiltrate, harvest and re-use, evapotranspire and/or bio-treat at least the design capture volume. (Also see discussion on hydrologic conditions of concern, below.)

   d. Implement LID on a regional basis. For example, several developments could propose a regional system to address storm water runoff from all the participating developments. The pervious areas to which the runoff from the impervious areas are connected should have the capacity to infiltrate, harvest and re-use, evapotranspire and/or bio-treat at least the design capture volume from the entire tributary area. (Also see discussion on hydrologic conditions of concern, below.)

D. HYDROLOGIC CONDITIONS OF CONCERN (HYDROMODIFICATION[60])

1. Each priority development project shall be required to ascertain the impact of the development on the site's hydrologic regime and include the findings in the WQMP, including the following for a two-year frequency storm event:

   a) Increases in runoff volume;

   b) Decreases in infiltration;

   c) Changes in time of concentration;

   d) Potential for increases in post development downstream erosion; and,

   e) Potential for adverse downstream impacts on physical structure, aquatic and riparian habitat.

2. The project does not have a hydrologic condition of concern if any one of the following conditions is met:

   a) The volumes and the time of concentration of storm water runoff for the post-development condition do not significantly exceed those of the pre-development condition for a two-year frequency storm event (a difference of 5% or less is considered insignificant). This may be achieved through site design and source control BMPs.

   b) All downstream conveyance channels that will receive runoff from the project are engineered, hardened and regularly maintained to ensure design flow capacity, and no sensitive stream habitat areas will be affected.

   c) The site infiltrates at least the runoff from a two-year storm event. The permittees may request for a variance from these criteria, based on studies conducted by the Storm Water Monitoring Coalition, Southern California Coastal Water Research Project, or other regional studies. Requests for consideration of any variances should be submitted to the Executive Officer.

3. If a hydrologic condition of concern exists, then the WQMP shall include an evaluation of whether the project will adversely impact downstream erosion, sedimentation or stream habitat. This evaluation should include a hydrograph with pre- and post-development time of concentration for a 2-year frequency storm event. If the evaluation determines adverse impacts are likely to occur, the project proponent shall implement additional site design controls, on-site management controls, structural treatment controls and/or in-stream controls to mitigate the impacts. The project proponent should first consider site design controls and on-site controls prior to proposing in-stream controls; in-stream controls must not adversely impact beneficial uses or result in sustained degradation of water quality of the receiving waters.

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[60] Hydromodification is the alteration of natural flow characteristics.

4. The project proponent may also address hydrologic conditions of concern by mimicking the pre-development hydrograph with the post-development hydrograph, for a two year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

5. The permittees shall address the hydrologic conditions of concern on a watershed basis by preparing a Watershed Master Plan as described below:

   The Watershed Master Plans shall integrate water quality, hydromodification, water supply, and habitat for the following watersheds: Coyote Creek-San Gabriel River; Anaheim Bay-Huntington Harbour; Santa Ana River; and Newport Bay-Newport Coast. Components of the Plan shall include: (1) maps to identify areas susceptible to hydromodification including downstream erosion, impacts on physical structure, impacts on riparian and aquatic habitats and areas where storm water and urban runoff infiltration is possible and appropriate; and, (2) a hydromodification model to make available as a tool to enable proponents of land development projects to readily select storm water preventive and mitigative site BMP measures.

   The maps shall be prepared within 12 months of the adoption of this order and a model Plan for one watershed shall be prepared within 24 months of adoption of this order. The model Plan should specify hydromodification management standards for each sub-watershed and provide assessment tools. In the preparation of the model Plan, the permittees are encouraged to use currently available information from other sources such as: (1) Orange County Flood Control Master Plan; (2) Irvine Ranch Water District's Natural Treatment System Master Plan; (3) Orange County Watershed Plans; (4) Nutrient and Selenium Management Program; (5) TMDL and 303(d) Listing information from the U.S. EPA and/or the Regional Board, and (6) and water districts.

   The model Watershed Master Plan shall be submitted to the Executive Officer for approval. Watershed Master Plans shall be completed for all watersheds 24 months after approval of the model Watershed Master Plan.

   The Watershed Master Plans shall be designed to meet applicable water quality standards and the Federal Clean Water Act.

E. ALTERNATIVES AND IN-LIEU PROGRAMS

1. Within 12 months of adoption of this order, the principal permittee, in collaboration with the co-permittees, shall develop technically-based feasibility criteria for project evaluation to determine the feasibility of implementing LID BMPs (feasibility to be based in part, on the issues identified in Section XII.C). This plan shall be submitted to the Executive Officer for approval. Only those projects that have completed a vigorous feasibility analysis as per the criteria developed by the permittees and approved by the Executive Officer should be considered for alternatives and in-lieu programs. If a particular BMP is not technically feasible, other BMPs should be implemented to achieve the same

level of compliance, or if the cost of BMP implementation greatly outweighs the pollution control benefits, a waiver of the BMPs may be granted. All requests for waivers, along with feasibility analysis including waiver justification documentation, must be submitted to the Executive Officer in writing, 30 days prior to permittee approval.

2. The permittees may collectively or individually 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. The contributions should be at least equivalent to the cost savings for waived projects and the urban runoff fund shall be expended for water quality improvement or other related projects approved by the Executive Officer within two years of receipt of the funds. If a waiver is granted and an urban runoff fund is established, the annual report for the year should include the following information with respect to the urban runoff fund:

   a) Total amount deposited into the funds and the party responsible for managing the urban runoff fund;

   b) Projects funded or proposed to be funded with monies from the urban runoff fund;

   c) Party or parties responsible for design, construction, operation and maintenance of urban runoff funded projects; and

   d) Current status and a schedule for project completion.

3. The obligation to install structural treatment control BMPs at a new development is met if, for a common plan of development, BMPs are constructed with the requisite capacity to serve the entire common project, even if certain phases of the common project may not have BMP capacity located on that phase in accordance with the requirements specified above. The goal of the WQMP is to develop and implement practicable programs and policies to minimize the effects of urbanization on site hydrology, urban runoff flow rates, velocities and pollutant loads. This goal may be achieved through watershed-based structural treatment controls, in combination with site-specific BMPs. All treatment control BMPs should be located as close as possible to the pollutant sources, should not be located within waters of the US, and pollutant removal should be accomplished prior to discharge to waters of the US. Regional treatment control BMPs shall be operational prior to occupation of any of the priority project sites tributary to the regional treatment BMP.

4. The permittees may establish a water quality credit system for alternatives to infiltration, harvesting and reuse, evapotranspiration, and other LID BMPs and hydromodification requirements specified above. A summary of any waivers of LID, hydromodification and treatment control BMPs should be included in the annual report for each year. Any credit system that the permittees establish

should be submitted to the Executive Officer for review and approval. The following types of projects may be considered for the credit system:

a) Redevelopment projects that reduce the overall impervious footprint

b) Brownfield redevelopment

c) High density developments (>7 units per acre)

d) Mixed use and transit-oriented development (within ½ mile of transit)

e) Dedication of undeveloped portions of the project to parks, preservation areas and other pervious uses

f) Regional treatment systems with a capacity to treat flows from all upstream developments

g) Contribution to an urban runoff fund (see 1, above)

h) Offsite mitigation or dedications within the same watershed

i) City Center area

j) Historic Districts and Historic Preservation areas

k) Live-work developments

l) In-fill projects

F. APPROVAL OF WQMPs

1. The permittees shall utilize a mechanism for review and approval of WQMPs, including a checklist that incorporates the minimum requirements from the model WQMP.
2. The permittees shall maintain a database to track all structural treatment control BMPs, including the location of BMPs, parties responsible for construction, operation and maintenance (also see I.3, below).
3. The permittees shall train those involved with WQMP reviews in accordance with Section XVI, Training Requirements.

G. FIELD VERIFICATION OF BMPS

1. The permittees shall establish and implement a mechanism (a checklist or other tools) to verify that treatment control BMPs are designed and constructed in accordance with the approved WQMP.
2. Prior to occupancy of each priority development project, the permittees shall field verify that the site design, source control and treatment control BMPs have been implemented in accordance with the approved WQMP.
3. Prior to occupancy, the permittees shall verify through visual observation, that the BMPs are operating and functional.
4. The permittees may accept self-certification or third-party certification of BMPs from State licensed professional engineers.

H. CHANGE OF OWNERSHIP AND RECORDATION

1. The permittees shall establish a mechanism not only to track treatment control BMPs, but also to ensure that appropriate easements and ownerships are properly recorded in public records at the County and/or the city and the information is conveyed to all appropriate parties when there is a change in project or site ownership.

I. OPERATION AND MAINTENANCE OF POST-CONSTRUCTION BMPS

1. The permittees shall ensure that all structural treatment control BMPs are designed and implemented with control measures necessary to effectively minimize the creation of nuisance or pollution associated with vectors, such as mosquitoes, rodents, flies, etc. The permittees should consult the Orange County Vector Control District to ensure that structural treatment control systems are designed to minimize the potential for vector breeding. The operation and maintenance plans for all post-construction structural treatment controls should include specific vector control mitigation measures to avoid and/or minimize vector breeding.
2. The permittees shall specify conditions of approval that require proper maintenance and operation of all structural treatment control BMPs installed in new developments, including requirements for vector control. The parties responsible for the long-term maintenance and operation of the structural treatment control BMPs for the life of the project and a funding mechanism for operation and maintenance, shall be identified prior to approval of the WQMP.
3. The permittees shall develop a database with information regarding each structural treatment control BMP installed after adoption of this order. At a minimum, it should include: type of BMP, watershed where it is located, date of construction, party responsible for maintenance, source of funding for operation and maintenance, maintenance verification, and any problems identified during inspections including any vector or nuisance problems. If vector or nuisance problems are identified, the site should be referred to the Orange County Vector Control District. The permittees should work with the Vector Control District to remedy the problems associated with vectors.
4. The annual report shall include a list of all structural treatment control BMPs approved, constructed and/or operating within each permittee's jurisdiction.
5. Within 12 months of adoption of this order and annually thereafter, all public agency structural treatment control BMPs, and at least 25% of priority development project structural treatment control BMPs, shall be inspected prior to the rainy season. All structural treatment control BMPs shall be inspected within every four year period. The permittees shall ensure that the BMPs are operating and are maintained properly and all control measures are working effectively to remove pollutants in runoff from the site. All inspections shall be documented and kept as permittee record. The permittees may accept inspections conducted and certified by state licensed professional engineers in lieu of permittee inspections.

J. PRE-APPROVED PROJECTS

1. The above provisions for LID and hydrologic conditions of concern are not applicable to projects that have an approved Water Quality Management Plan. The above provisions shall be implemented in a manner consistent with the maximum extent practicable standard for all other projects 90 days from the date of approval of the revised model WQMP (per Section XII.C.1). The Regional Board recognizes that full implementation may not be feasible for certain projects which have received tentative tract or parcel map or other discretionary approvals.

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, 2012, the permittees shall complete a public awareness survey to determine the effectiveness of the current public and business education strategy and any need for changes to the current multimedia public education efforts. The findings of the survey and any proposed changes to the current program shall be included in the annual report for 2011-2012.
2. 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. The permittees shall continue to participate in the Public Education Committee to review and update existing 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 continue to make recommendations for any changes to the public and business education program including: how to make the multimedia efforts more effective; a reevaluation of audiences and key messages for targeted behaviors; and opportunities for participation in regional and statewide public education efforts. 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 and that those impressions measurably increase the knowledge and measurably change the behavior of the targeted groups.
4. The permittees shall continue their outreach and other public education activities. Each permittee should try to reach the following sectors: manufacturing facilities; mobile service industry; commercial, distribution and retail sales industry; residential/commercial landscape construction and services industry; residential and commercial construction industry; and residential and community activities. Individual workshops (or regional workshops) for each of the aforementioned elements shall be administered by each permittee (or on a countywide basis) by July 1, 2010 and on an annual basis thereafter. Commercial and industrial facility inspectors shall distribute developed educational information (Fact Sheets) to these facilities during inspections.

Further, for restaurant, automotive service centers and gasoline service station corporate chains, new information or that which has been previously developed shall be provided to corporate environmental managers during outreach visits that should take place twice during the permit term. Some of these outreach activities could be conducted through the chamber of commerce or other similar establishments. The outcomes from all outreach requirements contained herein shall be reported in the applicable annual reports.

5. The permittees shall further develop and maintain public education materials to encourage the public to report illegal dumping and unauthorized, non-storm water discharges from residential, industrial, construction and commercial sites into public streets, storm drains and to surface waterbodies and their tributaries; clogged storm drains; faded or missing catch basin stencils and general storm water and BMP information. Hotline and web site information shall be included in the public and business education program and shall be listed in the governmental pages of all regional phone books and on the permittees' website.

6. Within 12 months from the date of adoption of this order, the permittees shall further develop and maintain BMP guidance for the control of those potentially polluting activities identified during the previous permit cycle, which are not otherwise regulated by any agency, including guidelines for the household use of fertilizers, pesticides, herbicides and other chemicals, and 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 by mail.

7. The principal permittee, in collaboration with the co-permittees, shall develop and implement a mechanism for public participation in the updating and implementation of the Drainage Area Management Plans, monitoring plans, Water Quality Management Plan guidance and Fact Sheets for various activities. The public shall be informed of the availability of these documents through public notices in local newspapers, County and/or city websites, local libraries/city halls and/or courthouses.

XIV. MUNICIPAL FACILITIES/ACTIVITIES

1. The permittees shall continue to implement the Model Municipal Activities Program developed by the permittees for fixed facilities, field operations and drainage facilities 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 facility inventories, prioritization, and maintenance programs. 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 reduce the discharge of pollutants into waters of the US to the maximum extent practicable.

2. The permittees shall continue to implement BMPs as per the Fact Sheets developed by the permittees for fixed facilities, field programs and drainage facilities for public

agency and contract field operations and maintenance staff. A reporting of these activities shall be included in each annual report.

3. The permittees shall conduct inspections of open channel systems at least on an annual basis and record the findings in the inspection forms developed by the permittees. At a minimum the following municipal areas should be inspected:

   a) Parking facilities;

   b) Flood management and storm water conveyance systems (open channels);

   c) Areas or facilities discharging directly to lagoons, the ocean, or environmentally sensitive areas such as 303(d) listed waterbodies and Areas of Special Biological Significance; and

   d) Municipal landfills, solid waste transfer facilities, land application sites, corporate yards, sewage collection and treatment facilities, parks and recreation facilities including golf courses, and airfields.

4. All applicable public agency staff shall be trained as specified under Section XVI.

5. In collaboration with the University of California Cooperative Extension and consistent with the Model Integrated Pest Management, Pesticide and Fertilizer Management Guidelines, the permittees shall:

   a) Conduct annual integrated pest management self-audits;

   b) Implement the Model Integrated Pest Management, Pesticide and Fertilizer Guidelines;

   c) Provide proper training to municipal and contract staff involved in the above activities;

   d) Within one year of adoption of this order, revise the LIP to include an integrated pest management program.

6. The permittees shall evaluate the need for any revisions to the Integrated Pest Management, Pesticide and Fertilizer Management Guidelines and determine the need for developing pesticide use indicators.

7. Within one year of adoption of this order, the principal permittee shall evaluate the effectiveness of debris booms and determine if additional debris booms are needed to address floatables in inland streams. This evaluation should also include an evaluation of other control measures such as more effective street sweeping program, litter control measures, and drain inlet screens and /or other inlet controls.

8. Within twelve months of adoption of this order, the principal permittee shall develop an intragency agreement with the County Integrated Waste Management Department to ensure that household solid and hazardous waste collection, transfer and disposal practices do not cause or contribute to a water quality problem.

9. The permittees shall ensure that their flood management processes and projects do not contribute pollutants to receiving waters to the MEP.

10. Each permittee shall examine opportunities to retrofit existing storm water conveyance systems and parks and other recreational areas with water quality protection measures, where feasible. The 2005 RBF Retrofit Study may be used by the principal permittee for a system-wide evaluation in lieu of each permittee conducting its own evaluation. Within 12 months of adoption of this order, the principal permittee shall

submit a proposal for additional retrofit studies that incorporates opportunities for addressing any applicable TMDL implementation plans.

11. The permittees shall continue to implement the established model maintenance procedure for drainage facilities (catch basins, storm drains inlets, open channels, etc.). Each permittee shall clean 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 permittees. Each permittee shall keep a record of its inspections, maintenance and cleaning activities, and overall quantity of waste removed. This record shall be included in the annual report.
12. The permittees shall determine whether a more aggressive maintenance frequency is necessary for the cleaning of drainage facilities, including catch basins, based on the data generated by the historic and ongoing inspections of these facilities. This program shall be based on a list of drainage facilities and prioritized on such factors as: proximity to receiving waters, receiving water beneficial uses and impairments of beneficial uses, historical pollutant types and loads from past inspections/cleanings and the presence of downstream regional facilities that would remove the types of pollutants found in the drainage facility. Using this list, the permittees shall revise clean out schedules and frequency and provide justification for any proposed clean out frequency that is less than once a year. This information shall be included in the annual report.
13. Within six months of adoption of this order, the permittees shall evaluate the applicability of the Model Municipal Activities Program to municipal maintenance contracts, contracts for field maintenance operations, and leases. The findings from the evaluation shall be included in the next annual report.
14. Each permittee shall implement control measures necessary to minimize infiltration of seepage from sanitary sewers to the storm drain systems through routine preventive maintenance of the storm drain system. The permittees who are also owners and/or operators of sewage collection systems shall also implement a routine maintenance program for the sewage collection systems in accordance with the State Board's Water Quality Order No. 2006-0003. Each permittee shall cooperate and coordinate with the sewage collection/treatment agencies (Orange County Sanitation District and/or Irvine Ranch Water District) to swiftly respond to and contain any sewage spills.

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 one (1) acre or more (or less than one acre, if it is part of a larger common plan of development or sale which is one acre 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 Sections 7 and 8.
2. All construction activities shall be in compliance with the latest version of State's General Permit for Storm Water Discharges Associated with Construction Activities except that an NOI need not be filed with the State Board.
3. Prior to commencement of construction activities, the permittees shall notify the Executive Officer of the Regional Board concerning the proposed construction project. Upon completion of the construction project, the Executive Officer shall be notified of the completion of the project.

4. The permittees shall develop and implement a storm water pollution prevention plan (SWPPP) and a monitoring program that is specific for the construction project greater than one acre, prior to the commencement of any of the construction activities, except for routine maintenance activities. The SWPPP shall be kept at the construction site and released to the public and/or Regional Board staff upon request.
5. The SWPPP (and any other plans and programs required under the General Permit) and the monitoring program for the construction projects shall be consistent with the requirements of the latest version of the State's General Construction Permit.
6. The permittees shall give advance notice to the Executive Officer of the Regional Board concerning any planned changes in the construction activity, which may result in non-compliance with the latest version of the State's General Construction Permit.

XVI. TRAINING PROGRAM FOR STORM WATER MANAGERS, PLANNERS, INSPECTORS AND MUNICIPAL CONTRACTORS

1. Within 12 months from the date of adoption of this order, the principal permittee, in coordination with the co-permittees, shall develop a training program including a training schedule, curriculum content, and defined expertise and competencies for storm water managers, inspectors, maintenance crew, those involved in the review and approval of WQMPs, public works employees, community planners and for those preparing and/or reviewing CEQA documentation and for municipal contractors.
2. The curriculum content should include: federal, state and local water quality laws and regulations as they apply to construction and grading activities, industrial and commercial activities; the potential effects of construction, industrial and commercial activities and urbanization on water quality; implementation and maintenance of erosion control and pollution prevention measures and sediment control BMPs; the proper use and maintenance of erosion and sediment controls; the enforcement protocols and methods established in the Drainage Area Management Plan, Local Implementation Plan, the Construction Runoff Guidance Manual, Enforcement Consistency Guide and Illicit Discharge/Illegal Connection Training Program. Each permittee may develop its own training program curriculum consistent with the general principles discussed in this and the next paragraph. The training program should be coordinated with the Orange County Vector Control District to insure that vector control issues related to post-construction BMPs are incorporated into the training curriculum.
3. The training modules for each category of trainees (managers, inspectors, planners, contractors, public works crew, etc.) should define the required competencies, outline the curriculum, a testing or other procedure at the end of the training program to determine that the trainees have acquired the requisite knowledge in the storm water program to carry out their duties and proof of completion of training, such as Certificate of Completion, attendance sheets or other proof that training has been completed. .
4. At least every two years, the principal permittee shall provide and document training to applicable public agency staff on Fixed Facility Model Maintenance Procedure, Field Program Model Training and Drainage Facility Model Maintenance Training. The field program training should include Model Integrated Pest Management, Pesticide and Fertilizer Guidelines. Each permittee shall attend at least three of these training sessions during the term of this permit. The training sessions may be conducted in classrooms or using videos, DVDs, or other multimedia with appropriate documentation

and a final test to verify that the material has been properly reviewed and understood. The permittees have the option to develop and conduct their own training program as indicated in Paragraph 2, above.

5. The principal permittee shall conduct and document public employee training for model environmental review, and on how to conduct public/business education for preparation of environmental documents. The permittees have the option to develop and conduct their own training program as indicated in Paragraph 2, above.
6. The principal permittee shall provide BMP and training information to municipal contractors to assist the contractors in training their staff. In instances where applicable municipal operations are performed by contract staff, the permittees shall require evidence that contract staff have received a level of training equivalent to that listed above. The permittees have the option to develop and conduct their own training program as indicated in Paragraph 2, above.
7. The principal permittee shall notify designated Regional Board staff via e-mail at least 30 days prior to conducting any of these training sessions.
8. Each permittee shall have adequately trained all its staff involved with storm water related projects within 60 days from being assigned these duties and on an annual basis thereafter, prior to the rainy season.
9. Each permittee shall maintain a written record of all training provided to its storm water and related program staff.

XVII. NOTIFICATION REQUIREMENTS

1. Within 24 hours of discovery, each permittee shall provide oral or e-mail notification to Regional Board staff of non-compliant sites within its jurisdiction that are determined to pose imminent threat to human health or the environment (e.g., sewage spills that could impact water contact recreation, an oil spill that could impact wildlife, a hazardous substance spill where residents are evacuated, etc.). Following oral or email notification, a written report must be submitted to the Regional Board office within 5 business 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 databases for construction, industrial and commercial inspections[61].
2. 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. All spill incidents shall be also 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.

[61] The reporting schedule may be revised with the approval of the Executive Officer.

XVIII. WATERSHED ACTION PLANS AND TMDL IMPLEMENTATION

A. IMPAIRED WATERBODIES WITH NO TMDLS

1. The principal permittee, in collaboration with the co-permittees, shall develop Watershed Action Plans for areas where such a Plan has not been developed. Existing Watershed Action Plans and those under development shall be updated as new TMDLs are approved by the Regional Board.
2. Each Watershed Action Plan shall identify impaired waters [CWA § 303(d) listed], pollutants causing impairment, monitoring programs for these pollutants, control measures, including any BMPs that the permittees are currently implementing, and any BMPs that the permittees are proposing to implement. All construction sites that are adjacent to (within 200 feet) or discharging directly to a waterbody listed for sediments or turbidity shall be treated as high priority sites. In selecting control measures, the listed pollutants shall be treated as primary pollutants of concern and these pollutants shall be addressed through source control, site design, pollution prevention and structural treatment control BMPs.

B. WATERBODIES WITH TECHNICAL TMDLS (NO IMPLEMENTATION PLANS)

1. As required under a consent decree, in 2002, the EPA promulgated technical TMDLs for toxic pollutants in San Diego Creek and Newport Bay, including metals, organochlorine compounds, selenium and organophosphate pesticides. EPA and the Los Angeles Regional Water Quality Control Board established technical TMDLs for metals in Coyote Creek. Technical TMDLs do not include implementation plans or compliance schedules.
2. In collaboration with stakeholders, Regional Board staff are developing revised TMDLs that are expected to supplant the toxics TMDLs promulgated by EPA for the Newport watershed. The TMDLs will include implementation plans and compliance schedules. Implementation plans for the Coyote Creek TMDLs are also being developed.
3. In summary, work related to the following established TMDLs is ongoing:
   a) Metals (San Diego Creek and Newport Bay (including Rhine Channel))
   b) Metals (Mercury, Chromium) (Rhine Channel)
   c) Organochlorine compounds (San Diego Creek and Newport Bay; also see Paragraphs 5 and 6, below)
   d) Selenium (San Diego Creek and Newport Bay)
   e) Copper, lead and zinc (Coyote Creek, TMDL developed by the EPA and the Los Angeles Regional Water Quality Control Board for wet weather)
   f) Copper (Coyote Creek, TMDL developed by the EPA and the Los Angeles Regional Water Quality Control Board for dry weather)
4. The permittees in the Newport Watershed shall comply with the wasteload allocations specified in the established TMDLs and shown in Tables 1 A/B/C, 2 A/B/C/D and 3. These wasteload allocations shall remain in effect unless and

until alternative wasteload allocations are established in TMDLs approved by the Regional Board, State Board, Office of Administrative Law and EPA.

Tables 1 A/B/C/D – Urban Runoff Waste Load Allocations for Metals (TMDLs promulgated by U.S. EPA)[62]

A- San Diego Creek and Tributaries – Concentration based TMDL

	Base flows (<20 cfs) Hardness- 400 mg/L		Small flows (21-181 cfs) Hardness- 322 mg/L		Med. flows (182-815 cfs) Hardness- 236 mg/L		Large Flows (>815 cfs) Hardness- 197 mg/L
	Acute	Chronic	Acute	Chronic	Acute	Chronic	Acute
Cd (ug/L)	19.1	6.2	15.1	5.3	10.8	4.2	8.9
Cu (ug/L)	50	29.3	40	24.3	30.2	18.7	25.5
Pb (ug/L)	281	10.9	224	8.8	162	6.3	134
Zn (ug/L)	379	382	316	318	243	244	208

B- Newport Bay

Cd *	Cu	Pb	Zn
9,589 lbs/yr	3,403 lbs/yr	17,638 lbs/yr	174,057 lbs/yr

* (Applies to Upper Bay only, estimated as 40% of Newport Bay volume)

C- Rhine Channel

Mercury (Hg)	Chromium (Cr)
0.0171 kg/yr	5.66 kg/yr

D- Concentration-based Dissolved Metal TMDLs, WLAs and LAs for Newport Bay

	Dissolved saltwater TMDLs and allocations which apply to direct discharges to the bay, including storm drains/channels and metals loading associated with boats	
	Acute	Chronic
Cd* (ug/L)	42	9.3
Cu (ug/L)	4.8	3.1
Pb (ug/L)	210	8.1
Zn (ug/L)	90	81

* (Applies to Upper Bay only, estimated as 40% of Newport Bay volume).

[62] From Total Maximum Daily Loads For Toxic Pollutants San Diego Creek and Newport Bay, California, U.S. EPA – Region 9, established June 14, 2002.

Tables 2 A/B/C/D – Urban Runoff Waste Load Allocations for Organochlorine Compounds (TMDLs promulgated by U.S. EPA)[63]

A- San Diego Creek and Tributaries

Total DDT	Chlordane	Dieldrin	PCBs	Toxaphene
302.8 g/yr	220.3 g/yr	183.4 g/yr	177.7 g/yr	6.2 g/yr

B- Upper Newport Bay

Total DDT	Chlordane	PCBs
207.4 g/yr	120.5 g/yr	609.7 g/yr

C – Lower Newport Bay

Total DDT	Chlordane	Dieldrin	PCBs
76.3 g/yr	12.6 g/yr	4.45 g/yr	303.3 g/yr

D – Rhine Channel

	Total DDT	Chlordane	Dieldrin	PCBs
WLA	0.7 g/yr	0.1 g/yr	0.13 g/yr	4.1 g/yr

Table 3 – Urban Runoff Waste Load Allocation for Selenium – San Diego Creek and Tributaries (TMDL promulgated by U.S. EPA)[64]

Base flows (<20 cfs)	Small flows (21-181 cfs)	Med. flows (182–814 cfs)	Large Flows (>814 cfs)
0.4 lbs/yr	1.0 lbs/yr	1.0 lbs/yr	5.3 lbs/yr

5. The Regional Board adopted TMDLs, including an implementation plan, for organochlorine compounds in September 2007. These TMDLs must be submitted for approval by the State Board, Office of Administrative Law and EPA. These TMDLs have not yet been submitted to the State Board for its approval. However, stakeholders in the watershed are already taking steps to implement the TMDLs through a Toxicity Reduction and Investigation Program (TRIP) that will address the organochlorine compounds and other toxic pollutants, including metals, in the Newport Bay watershed. These TMDLs will become effective upon approval by the State Board and Office of Administrative

[63] From Total Maximum Daily Loads For Toxic Pollutants San Diego Creek and Newport Bay, California, U.S. EPA – Region 9, established June 14, 2002.

[64] From Total Maximum Daily Loads For Toxic Pollutants San Diego Creek and Newport Bay, California, U.S. EPA – Region 9, established June 14, 2002.

Law but will not supplant the EPA organochlorine compounds TMDLs until they are approved by EPA. Accordingly, upon approval of the Regional Board-adopted organochlorine compounds TMDLs by the State Board and the Office of Administrative Law, the permittees shall comply with both the EPA and Regional Board wasteload allocations specified in Tables 2 A/B/C/D and Table 4, respectively. In accordance with the Regional Board TMDLs, compliance with the allocations specified in Table 4 shall be achieved as soon as possible but no later than December 31, 2015. Upon approval of the Regional Board-approved organochlorine compounds TMDLs by EPA, the applicable wasteload allocations shall be those specified in Table 4.

Table 4 – Urban Runoff Waste Load Allocations for Organochlorine Compounds (TMDLs approved by Santa Ana Regional Water Quality Control Board)[65]

	Total DDT	Chlordane	Total PCBs	Toxaphene
San Diego Creek	128.3 g/yr			1.9 g/yr
Upper Newport Bay	51.8 g/yr	30.1 g/yr	29.8 g/yr	
Lower Newport Bay	19.1 g/yr	11.0 g/yr	78.1 g/yr	

6. The organochlorine compounds are carried by fine sediment into the water column. Since the use of organochlorine pesticides has been banned, the levels of these compounds have been steadily decreasing in the watershed. The implementation plan requires monitoring to verify the decreasing trend and strict controls on sediment discharges. The stakeholders in the San Diego Creek/Newport Bay watershed have an established Regional Monitoring Program (RMP), and in early 2008, initiated the Toxicity Reduction and Investigation Program (TRIP) consistent with the Regional Board-approved implementation plan for the organochlorine compounds TMDLs. Recognizing the difficulties inherent in measuring the allocations presented in Table 4, the permittees shall evaluate the monitoring results with the targets shown in Tables 5A/B and determine the need for any additional control measures to achieve the targets. Monitoring shall be conducted at representative locations within San Diego Creek and Newport Bay and include water column, sediment and fish tissue monitoring. The permittees may use current monitoring locations.

[65] From Resolution No. R8-2007-0024, Table NB-OCs-10.

Tables 5 A /B - Water Column Targets for Protection of Aquatic Life, Wildlife & Human Health[66]

A - San Diego Creek and Tributaries

	Total DDT	Toxaphene
Acute Criterion	1.1 µg/l	0.73 µg/l
Chronic Criterion	0.001 µg/l	0.0002 µg/l
Human Health Criterion	0.00059 µg/l	0.00075 µg/l

B - Upper and Lower Newport Bay

	Total DDT	Chlordane	Total PCBs
Acute Criterion	0.13 µg/l	0.09 µg/l	
Chronic Criterion	0.001 µg/l	0.0004 µg/l	0.03 µg/l
Human Health Criterion	0.00059 µg/l	0.00059 µg/l	0.00017 µg/l

7. Regional Board staff, in collaboration with the stakeholders, is developing TMDLs for metals and selenium that will include implementation plans and monitoring programs and that are intended to replace the EPA TMDLs. The permittees within the Newport Bay watershed shall continue to participate in the development and implementation of these TMDLs. This Order will be reopened to incorporate revised allocations based upon TMDLs, including implementation plans, for metals and selenium approved by the Regional Board, State Board and Office of Administrative Law. As for the organochlorine compounds, the EPA promulgated allocations for these constituents will also remain in effect unless and until EPA approves the Regional Board's TMDLs for these constituents.

8. Selenium is a naturally occurring element in the soil but its presence in surface waters in the Newport Bay watershed is largely the result of changes in the hydrologic regime as the result of extensive drainage modifications. Selenium-laden shallow and rising groundwater enters the storm water conveyance systems and flows into San Diego Creek and its tributaries. Groundwater inputs are the major source of selenium in San Diego Creek and Newport Bay. Currently, there are no economically and technically feasible treatment techniques to remove selenium from the water column.

[66] From Resolution No. R8-2007-0024, Table NB-OCs-4.

The stakeholders have initiated pilot studies to determine the most efficient methods for treatment and removal of selenium. Through the Nitrogen and Selenium Management Program, the watershed stakeholders are developing comprehensive selenium (and nitrogen) management plans, which are expected to form the basis, at least in part, for the selenium implementation plan (and a revised nutrient TMDL implementation plan). A collaborative watershed approach to implement the nitrogen and selenium TMDLs for San Diego Creek and Newport Bay is expected. A proposed Cooperative Watershed Program that will fulfill applicable requirements of the selenium TMDL implementation plan must be submitted by the stakeholders covered by this order within 24 months of adoption of this order, or one month after approval of the selenium TMDLs by OAL, whichever is later. The Program must be implemented upon Regional Board approval. As long as the stakeholders are participating in and implementing the approved Cooperative Watershed Program, they will not be in violation of this order with respect to the nitrogen and selenium TMDLs for San Diego Creek and Newport Bay. In the event that any of the stakeholders does not participate, or if the collaborative approach is not approved or fails to achieve the TMDLs, the Regional Board will exercise its option to issue individual waste discharge requirements or waivers of waste discharge requirements.

9. The permittees with discharges tributary to Coyote Creek or the San Gabriel River shall develop and implement a constituent-specific source control plan for copper, lead and zinc until a TMDL implementation plan is developed. The source control plan shall include a monitoring program and shall be completed within 12 months from the date of adoption of this order. The source control plan shall be designed to ensure compliance with the following wasteload allocations:

Table 6 – Municipal Storm Water Wasteload Allocations - Coyote Creek

	Copper	Lead	Zinc
Dry Weather	0.941 kg/day		
Wet Weather	9.41 kg/day	36.9 kg/day	55.0 kg/day

10. Within 12 months of adoption of this order, the principal permittee, in collaboration with the co-permittees with discharges to the San Gabriel River/Coyote Creek and/or their tributaries, shall develop a monitoring program to monitor dry weather (for copper) and wet weather (for copper,

lead and zinc) flows in Coyote Creek. The monitoring results shall be evaluated against the following numeric targets:

Table 7 – Numeric Targets - Coyote Creek
(total recoverable metals)

	Copper	Lead	Zinc
Dry Weather[67]	3.7 µg/l		
Wet Weather	27 µg/l	106 µg/l	158 µg/l

C. WATERBODIES WITH TMDL IMPLEMENTATION PLANS AND COMPLIANCE SCHEDULES BEYOND THE PERMIT TERM

1. The Regional Board adopted a TMDL implementation plan for fecal coliform bacteria in Newport Bay that included a compliance date for water contact recreation standards no later than December 30, 2013 (within the permit term), and with shellfish standards no later than December 30, 2019. The allocations are shown in the tables below.

Table 8A – Fecal Coliform TMDL and Allocations for Newport Bay
To be achieved no later than December 30, 2013

Urban Runoff Waste Load Allocation for Fecal Coliform	As soon as possible, but no later than December 30, 2013	5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30- day period.
Total Maximum Daily Load for Fecal Coliform		5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period.
Load Allocations for Fecal Coliform in Agricultural Runoff, including stormwater, Discharges		5-Sample/30-days Geometric Mean less than 200 organisms/ 100 mL, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period.
Load Allocations for Fecal Coliform from Natural Sources in all Discharges	In effect	5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period.
Allocations for Vessel Waste		0 MPN/100 mL - No discharge.

[67] Based on saltwater CTR criterion in San Gabriel River estuary.

Table 8B – Fecal Coliform TMDL and Allocations for Newport Bay

Before December 30, 2019

Urban Runoff Waste Load Allocation for Fecal Coliform	As soon as possible, but no later than December 30, 2019	Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.
Total Maximum Daily Load for Fecal Coliform		Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.
Load Allocations for Fecal Coliform in Agricultural Runoff, including stormwater, Discharges		Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.
Load Allocations for Fecal Coliform from Natural Sources in all Discharges		Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.
Allocations for Vessel Waste	In effect	0 MPN/100 mL - No discharge.

The permittees shall comply with the wasteload allocations for urban runoff in Tables 8A and 8B in accordance with the deadlines in Tables 8A and 8B. Compliance determination for fecal coliform shall be based on monitoring conducted at representative sampling locations within San Diego Creek and Newport Bay. (The permittees may use the current sampling locations for compliance determination.)

2. The fecal coliform TMDL implementation plan includes a number of studies that are expected to inform possible revision of the TMDL, including the wasteload allocations for urban runoff and the implementation plan. The permittees shall revise the Watershed Action Plans to include implementation measures and schedules for further studies related to the TMDL for fecal coliform in Newport Bay, as set forth in the January 2000, March 2000 and April 2000 Newport Bay Fecal Coliform TMDL Technical Reports submitted by the permittees. The permittees within this watershed shall complete the ongoing source identification and characterization plan for urban runoff by December 31, 2009 and continue their participation in the studies and monitoring programs as specified in the implementation plan. Recommendations for an updated TMDL report and revisions to the fecal coliform TMDL shall be provided within twelve months of completion of the Source Identification and Characterization Investigation and Report submittal, as specified in the implementation plan.

3. The fecal coliform TMDL includes waste load allocations for storm water in urban runoff and load allocations in agricultural runoff. The University of California Cooperative Extension and Orange County Coastkeeper are working with the agricultural operators in the area to reduce runoff from their operations.

D. WATERBODIES WITH TMDL IMPLEMENTATION PLANS AND COMPLIANCE SCHEDULES WITHIN THE PERMIT TERM

1. The Regional Board/EPA developed TMDLs for diazinon and chlorpyrifos in San Diego Creek and for chlorpyrifos in Newport Bay. The following allocations are included in the TMDLs (Tables 9A and 9B are extracted from the Implementation Plan[68]). The permittees in the Newport Bay Watershed shall comply with the allocations in Tables 9 A and B.

Table 9A

Diazinon and Chlorpyrifos Allocations for San Diego Creek*

Category	Diazinon (ng/l)		Chlorpyrifos (ng/l)	
	Acute	Chronic	Acute	Chronic
Wasteload Allocation	72	45	18	12.6

Chronic means 4-consecutive day average

* Pursuant to the TMDLs, compliance with these allocations was achieved no later than December 1, 2007

Table 9B

Chlorpyrifos Allocations for Upper Newport Bay*

Category	Acute (ng/l)	Chronic (ng/)
Wasteload allocation	18	8.1

Chronic means 4-consecutive day average

* Pursuant to the TMDLs, compliance with these allocations was achieved no later than December 1, 2007

The Regional Board adopted an implementation plan for these TMDLs. In accordance with the implementation plan, the Regional Monitoring Program was modified to include analysis for organophosphate pesticides and toxicity. The Regional Board also performed simulation studies to predict contaminant concentrations in the Bay. Based on the results of these studies, the Regional Board will reevaluate the TMDLs every three years. The permittees shall continue to participate in any additional monitoring that is needed to confirm that the permittees are in compliance with the allocations.

Compliance determination for diazinon and chlorpyrifos for San Diego Creek shall be based on monitoring conducted at representative monitoring locations within San Diego Creek (the permittees may use current monitoring locations for this purpose).

Compliance determination for chlorpyrifos for Upper Newport Bay shall be based on monitoring conducted at representative monitoring locations within Upper Newport Bay (the permittees may use current monitoring locations for this purpose).

[68] Attachment to Resolution No. R8-2003-0039.

2. The waste load allocations established in the nutrient TMDLs adopted by the Regional Board in 1998 for Newport Bay included 5, 10 and 15 year allocations. The overall allocations for 2012 have been met.

Table 10 - Seasonal Load Allocations of Total Nitrogen for the Newport Bay Watershed (Urban Runoff)[69]

Nutrient TMDL	1990-1997 Loading	2002 Summer Allocation (Apr-Sept)[70]	2007 Summer Allocation (Apr-Sept)[71]	2012 Winter Allocation (Oct-Mar)[72]
Newport Bay Watershed	lbs/year TN[73,74]	lbs/season TN	lbs/season TN	lbs/season TN
Urban runoff	277,131[75]	20,785	16,628	55,442
		5 year target	10 year target	15 year target

Table 11 - Annual Total Nitrogen Load Allocations for San Diego Creek, Reach 2 During Non-Storm Conditions.[76]

	2012 Allocation lbs/day TN[77]
TMDL	14 lbs/day (TN)
Waste Load Allocation (Urban runoff)	5.5 lbs/day (TN)

3. The permittees shall verify, through monitoring or other mechanisms, that they have met the following load allocations for phosphorous for urban runoff (recent

[69] From Attachment to Resolution No. 98-9 as amended by Resolution No. 98-100, Table 5-9b.Compliance dates are as soon as possible but no later than December 31 of the years specified (Table 5-9a of Resolution No. 98-9, as amended).

[70] 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.

[71] See previous footnote.

[72] 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. 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. Assumes 67 non-storm days.

[73] TIN = (NO3+NH3).

[74] TN = (TIN + Organic N).

[75] Estimated annual average (summer and winter loading).

[76] From Attachment to Resolution No. 98-9 as amended by Resolution No. 98-100, Table 5-9d. 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.

[77] Compliance to be achieved no later than December 31, 2012. The Regional Board may require earlier compliance with these targets when it is feasible and reasonable.

monitoring data indicate that these target load allocations have been already met).

Table 12 - Annual Total Phosphorous Load Allocations For The Newport Bay Watershed[78]

	2002 Allocation lbs/year TP[79]	2007 Allocation lbs/year TP[80]
TMDL	86,912	62,080
Urban areas	4,102	2,960

The permittees shall comply with the waste load allocations for urban runoff in Tables 10, 11 and 12 in accordance with the schedules in Tables 10, 11 and 12. Compliance determination for nutrients in San Diego Creek and Newport Bay shall be based on monitoring conducted at representative monitoring locations within San Diego Creek and Newport Bay.

4. The permittees shall meet the following target load allocations for sediment in urban runoff by implementing the BMPs contained in Sections 7 and 8 of the DAMP and the "March 1999 Technical Report on the Implementation of the TMDL for Sediment in the Newport Bay Watershed, the October 1999 Preliminary Sediment Load Allocation Analysis for San Diego Creek and Newport Bay, and the February 2000 Sediment Yield and Transport Investigation for San Diego Creek and Newport Bay".

   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.

   Compliance determination for sediment in San Diego Creek and Newport Bay shall be based on monitoring conducted at San Diego Creek at Campus, starting from year 2000 and based on a 10-year running average. The data from this monitoring is to be submitted annually on February 27.

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[78] From Attachment to Resolution No. 98-9 as amended by Resolution No. 98-100, Table 5-9c. Compliance dates are as soon as possible but no later than December 31 of the years specified (Table 5-9a of Resolution No. 98-9, as amended).

[79] 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.

[80] See previous footnote.

5. This order may be reopened to include additional requirements based on new or revised TMDLs.

E. COMPLIANCE DETERMINATION WITH TMDLs AND BMP IMPLEMENTATION

1. Except for sediment TMDLs in San Diego Creek and Newport Bay, compliance determinations shall be based on monitoring within the receiving waters. For sediment TMDLs, compliance determination shall be based on monitoring in the Creek.
2. Based on the TMDLs, effluent limits have been specified to ensure consistency with the wasteload allocations. If the monitoring results indicate an exceedance of the wasteload allocations, the permittees shall reevaluate the current control measures and propose additional BMPs/control measures. This reevaluation and proposal for revisions to the current BMPs/control measures (revised plan) shall be submitted to the Executive Officer within 12 months of determining that an exceedance has occurred. Upon approval, the permittees shall immediately start implementation of the revised plan.

XIX. 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. In addition, 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. Upon the effective date of this Order, the permittees shall start implementing the 2007 DAMP. If modifications to the 2007 DAMP are determined to be necessary, the permittees shall prepare and submit DAMP modifications to the Regional Board Executive Officer, for consideration by the Regional Board at a public hearing. Such modifications may include regional and watershed-specific requirements and/or waste load allocations developed and approved pursuant to the TMDL process.
4. The Management 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.

XX. FISCAL ANALYSIS

1. Each permittee shall secure the resources necessary to meet all requirements of this order.

2. The permittees shall prepare and submit a unified fiscal accountability analysis to the Executive Officer of the Regional Board. The fiscal analysis shall be submitted with the annual report 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.

XXI. PROVISIONS

1. All reports submitted by the permittees as per the requirements in this order for the approval of the Executive Officer shall be publicly noticed and made available on the Regional Board's website, or through other means, for public review and comments. The Executive Officer shall consider all comments received prior to approval of the reports. Any unresolved significant issues shall be scheduled for a public hearing at a Regional Board meeting prior to approval by the Executive Officer.
2. Permittees shall demonstrate compliance with all the requirements in this order and specifically with Section III.2 Discharge Limitations and Section IV. Receiving Water Limitations, through timely implementation of their DAMP and any modifications, revisions, or amendments developed pursuant to this order approved by the Executive Officer or determined by the permittee to be necessary to meet the requirements of this order.
3. The permittees shall, at a minimum, 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. In addition to those specific controls and actions required by (1) the terms of this order and (2) the DAMP, each permittee shall implement additional controls, if any are necessary, to reduce the discharge of pollutants in storm water to the maximum extent practicable, as required by this order.
4. The permittees shall comply with Monitoring and Reporting Program NO. R8-2008-0030, and any revisions thereto, which is hereby made a part of this order. The Executive Officer is authorized to revise the Monitoring and Reporting Program 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. R8-2008-0030.
5. Within one year of adoption of this order, the permittees, in coordination with the Orange County Fire Chiefs Association, shall develop a list of appropriate BMPs to be implemented to reduce pollutants from training activities, fire hydrant/sprinkler testing or flushing, non-emergency fire fighting and any BMPs feasible for emergency fire fighting flows.

6. 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.
7. 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. R8-2008-0030)
8. The permit application package 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.

XXII. PERMIT MODIFICATION

1. In accordance with 40 CFR 122.41(f), 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;
   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; or,
   d) To incorporate any requirements imposed upon the permittees through the TMDL process.
2. The filing of a request by the permittees for modification, revocation and re-issuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any conditions of this order.

XXIII. PERMIT EXPIRATION AND RENEWAL

1. This order expires on April 1, 2014 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 (40 CFR

122.41(b)). 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;

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; and,

d) Any new or revised program elements and compliance schedule(s) necessary to comply with Section IV of this order.

2. All permit applications (Report of Waste Discharge), annual reports and other information submitted under this order shall be signed by either a principal executive officer or a ranking elected official (40 CFR 122.22(a)(3)) or a duly authorized representative as per 40 CFR 122.22(b).

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 EPA has no objections. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

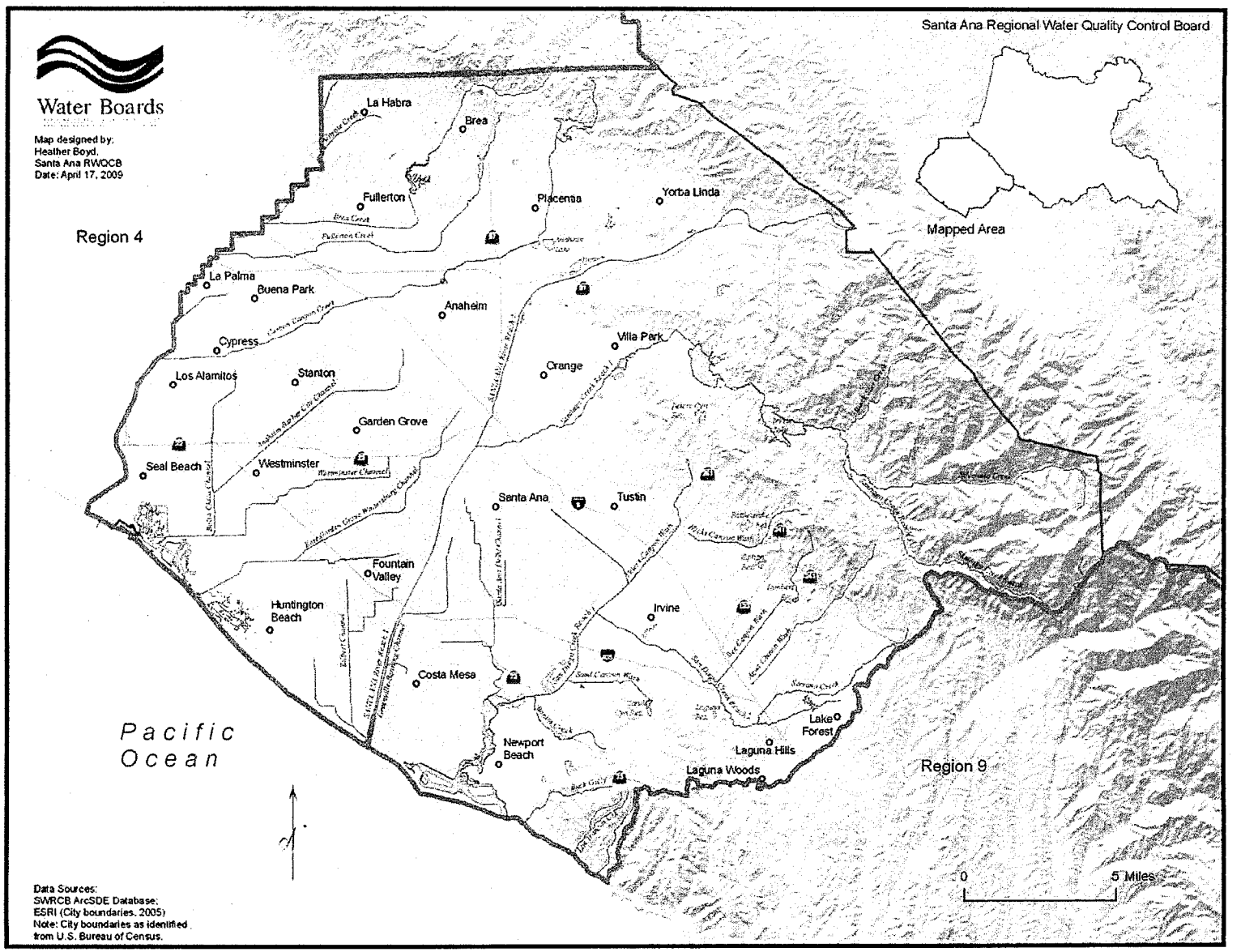
4. Order No. R8-2002-0010 is hereby rescinded.

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 May 22, 2009.

Gerard J. Thibeault
Executive Officer

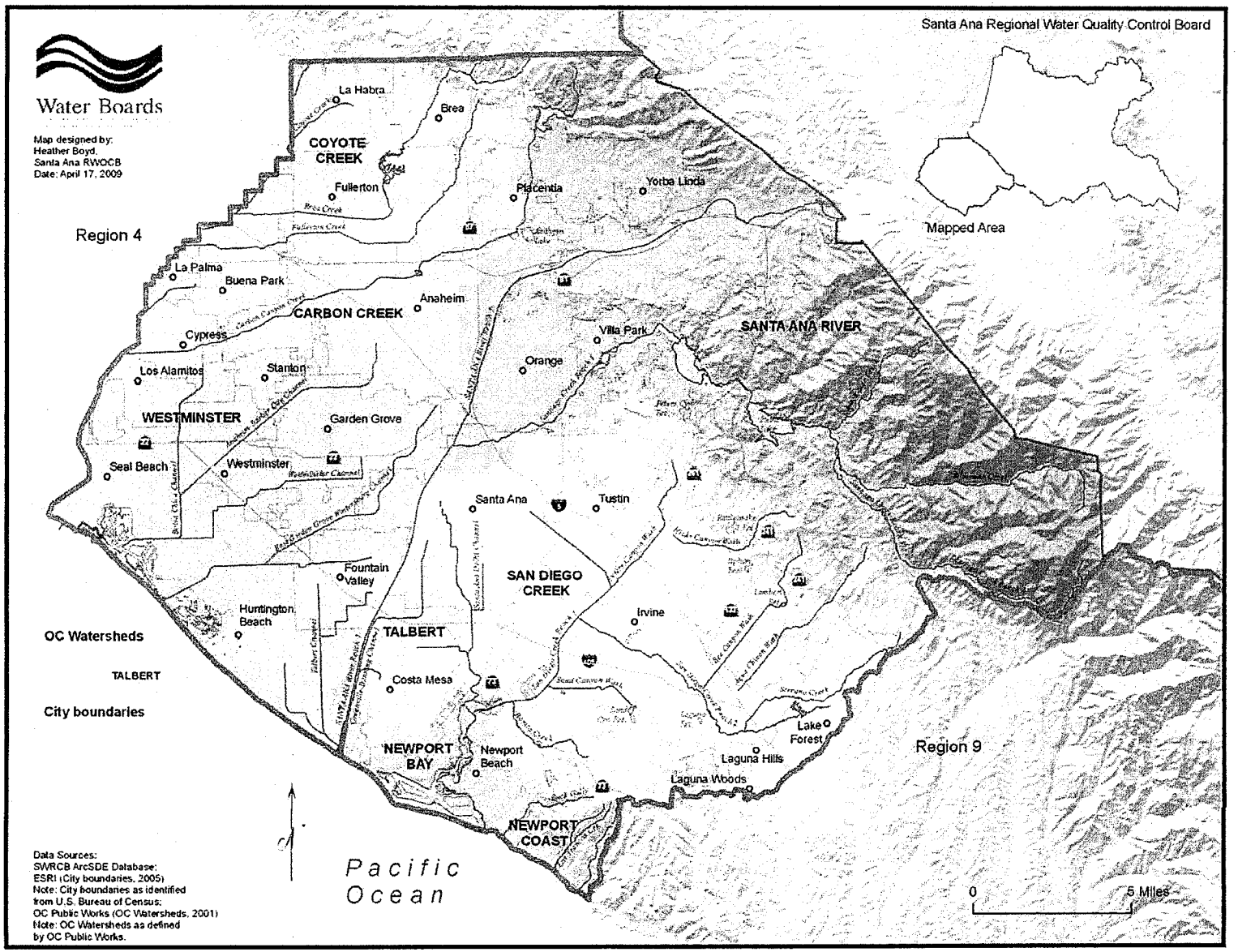
Order No. R8-2009-0030 (NPDES No. CAS618030) – cont'd
The County of Orange, OCFCD, and Incorporated Cities
Area wide Urban Storm Water Runoff

Attachment "A"



Order No. R8-2009-0030 (NPDES No. CAS618030) – cont'd
The County of Orange, OCFCD, and Incorporated Cities
Area wide Urban Storm Water Runoff

Attachment "B"



Order No. R8-2009-0030
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
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
Saddleback 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
Mesa Consolidated 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
Costa Mesa Sanitary District
Orange County Water District
Metropolitan Water District

State of California
California Regional Water Quality Control Board
Santa Ana Region

Monitoring and Reporting Program No. R8-2009-0030
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 or in addition to 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.
5. Any proposals for revisions to the 2003 Monitoring Plan shall be accompanied by a Quality Assurance Project Plan.

II. OBJECTIVES

The Orange County monitoring program was initiated in the mid 1970s with the goal of protecting key environmental resources. Successive iterations of the Orange County MS4 permit required the permittees to develop and implement comprehensive monitoring programs. During the first part of the third term permit, the permittees continued to implement the 1999 Water Quality Monitoring program. In August 2005, the Executive Officer approved the 2003 Monitoring Program that was developed in accordance with the requirements specified in the third term permit. The 2003 Monitoring Program was based on "The Model Monitoring Program for Municipal Separate Strom Sewer Systems in Southern California" developed by the Southern California Monitoring Coalition. The permittees also participate in the Regional Monitoring Program for San Diego Creek Nutrient TMDL, Southern California Bight Regional Monitoring Program, Southern California Stormwater Monitoring/Research Cooperative Program and other regional monitoring programs. The overall goal of these monitoring programs is to develop and

support an effective watershed and key environmental resources management program. The following are the major objectives:

1. To develop and support an effective municipal urban runoff pollutant source control program.
2. To define water quality status, trends, and pollutants of concern associated with urban runoff and their impact on the beneficial uses of the receiving waters.
3. To characterize pollutants associated with urban runoff 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 runoff.
5. To identify other sources of pollutants in urban 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 determine unit loading rates from different urban land use categories.
9. To determine reference loads and concentrations from unimpacted areas of Orange County including sediment loads from open spaces at the foothills.
10. To determine runoff concentrations and loads as close as possible to the source (e.g., golf courses, restaurants, etc.)
11. To evaluate the effectiveness of existing urban runoff water quality management programs, including an estimate of pollutant reductions achieved by the structural and nonstructural BMPs implemented by the permittees. This should also include a determination of concentrations and unit loads that are achievable upon BMP implementation.
12. To evaluate costs and benefits of proposed municipal storm water quality control programs to the stakeholders, including the public.

The Regional Board recognizes that program modifications may be necessary to attain these objectives and authorizes the Executive Officer to evaluate and to determine adequate progress toward meeting each objective and the need for any modifications to the monitoring and reporting program.

III. MONITORING PROGRAM REQUIREMENTS

1. The permittees shall continue to implement the 2003 Monitoring Program. The permittees shall review the 2003 Monitoring Program on an annual basis and

determine the need for any modifications to the program. Each of the following elements of the program shall be evaluated:

a) Mass Emissions Monitoring. Currently the principal permittee monitors 11 mass emissions stations to estimate the total mass emissions from the MS4; assess trends in mass emissions over time; and 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. Samples are collected from the first storm event and two more storm events during the rainy season. A minimum of three dry-weather samples are also collected. Samples from the first rain event each year are analyzed for the entire suite of priority pollutants. All samples are analyzed for metals, pH, TSS, TOC, pesticides/herbicides, and constituents which are known to have contributed to impairment of local receiving waters. An additional 4 mass emissions stations are utilized only for nutrient analysis for TMDL requirements. Dry weather samples are also analyzed for oil and grease. Sediments associated with mass emissions are analyzed for constituents of concern.

b) Estuary/Wetlands Monitoring: Currently the permittees monitor 20 sites in 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. These monitoring locations include representative areas surrounding channel outfalls and areas away from channel outfalls 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.

c) Water Column Toxicity Monitoring: The current monitoring program analyses for toxicity to freshwater and marine species on mass emissions samples to determine the impacts of storm water and non-storm water runoff on toxicity of receiving waters.

d) Sediment: The permittees monitor sediment toxicity at seven stations in Newport Bay and seven stations along Huntington Harbour/Talbert Marsh areas.

e) Bacteriological/Pathogen Monitoring: The permittees currently monitor 9 representative areas along the Orange County coastline and 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. Currently weekly channel monitoring is conducted in San Diego Creek and Santa Ana-Delhi channels by both Orange County Environmental Health and the Orange County monitoring program. The Executive Officer is authorized to allow the permittees to integrate their monitoring efforts with other bacteriological/pathogen monitoring programs.

f) Bioassessment: The permittees currently monitor 12 stations in cooperation 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. The Executive Officer is authorized to allow the permittees to integrate this element of the monitoring program with the regional bioassessment monitoring initiative being coordinated by the Southern California Monitoring Coalition.

g) Reconnaissance: The permittees are currently conducting dry and wet weather reconnaissance surveys to identify and prohibit illicit discharges.

2. TMDL/303(d) Listed Waterbody Monitoring: The Permittees shall continue to participate in the Regional Monitoring Programs for the San Diego Creek Nutrient TMDL and the Toxics TMDL.

3. 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.

IV. PROGRAM EFFECTIVENESS ASSESSMENT AND 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) As assessment of control measures and their effectiveness in addressing pollutants causing or contributing to an exceedance of water quality objectives in receiving waters that are on the 303(d) list of impaired waters.

d) The annual report shall include an overall program assessment. The permittees may use the "Municipal Stormwater Program Effectiveness Assessment Guidance" developed by the California Stormwater Quality Association in May 2007 as guidance for assessing program activities at the various outcome levels. The assessment should include each program element required under this order, the expected outcome and the measures used to assess the outcome. The permittees may propose any other methodology for program assessment using measurable targeted outcomes.

e) Each permittee shall develop and implement a plan and schedule to address program modifications and improvements identified during the program assessment.

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

g) A unified fiscal accountability analysis, as described in Section XX., Provision, 2, of this order;

h) 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;

i) Major changes in any previously submitted plans/policies; and

j) An assessment of the permittees compliance status with the Receiving Water Limitations, Section IV of the Order, including any proposed modifications to the DAMP if the Receiving Water Limitations are not fully achieved.

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.

4. The data transmittals to the Regional Board shall be in the form developed by the Stormwater Monitoring Coalition (SMC) and approved by the State Water Resources Control Board in the document entitled "Standardized Data Exchange Formats." This document was developed in order to provide a standard format for all data transfer so that data can universally be shared and evaluated from various programs.

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 24 months of adoption	Annual Report
Public Education Committee Meetings	Twice/year	Annual Report
Review DAMP	Annually	Annual Report
Public education workshops	Annually	Annual Report
Update inventory of construction sites and prioritize for inspections	Twice/year	Annual Report
Inspect municipal facilities	Annually	Annual Report
Maintain drainage facilities	80% annually/100% in every two years	Annual Report
Review/revise Implementation Agreement	Within 6 months of adoption	Annual Report
Review/revise Illegal Discharge/Illicit Connection Training Program	Within 6 months of adoption	Annual Report
Evaluate the need for additional debris control measures	Within 12 months of adoption	Annual Report
Complete Public Awareness Survey	July 1, 2012	Annual Report
Review Monitoring Program	Annually	Annual Report
Update industrial site database, including prioritization for inspection	Annually	Annual Report
Update the commercial site database, including prioritization for inspection	Quarterly	Annual Report
Develop a mobile business pilot program	Within 12 months of adoption	Annual Report
Residential common interest area/HOA pilot program	Within 18 months of adoption	Annual Report

Develop a guidance document for preparing conceptual WQMP	Within twelve months of adoption	Annual Report
Review planning documents to ensure water quality protection	Within 24 months of adoption	Annual Report
Report of Waste Discharge	180 days before permit expires	Six months prior to expiration
Annual Report/Fiscal Analysis	November 15th of each year	November 15
Provide training to public agency staff and to contract field operations staff	Once in two years/3 per permit term	November 15
Re-evaluate monitoring program priorities based on previous year's data	Annually	November 15
Evaluate the DAMP	Annually	November 15
Permittee Committee meetings to discuss permit implementation and regional and state-wide issues	Held at least 6 times each year	November 15

Ordered by _____
Gerard J. Thibeault
Executive Officer

TAB "2"

State of California
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

FACT SHEET

April 24, 2009

ITEM: 12

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, Areawide Urban Storm Water Runoff Management Program, Orange County, Order No. R8-2009-0030 (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 (US). 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 (US 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 prescribes 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 July 21, 2006, 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 Hills, 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 re-issuance of their areawide storm water NPDES permit. The permit application was submitted in accordance with the requirements of the previous NPDES permit (Order No. R8-2002-0010, NPDES No. CAS618030) which

expired on January 19, 2007. 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 (US EPA).

On February 20, 2007, Order No. R8-2002-0010, 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. R8-2009-0030 regulates discharges of urban storm water from the lower Santa Ana watershed to waters of the US, which ultimately drain into the Pacific Ocean.

II. REGULATORY BACKGROUND/CLEAN WATER ACT REQUIREMENTS

Urban runoff includes dry and wet weather flows and storm water runoff (collectively referred to as urban runoff) 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 and low impact developments, 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 goal of low impact development is to produce post-construction runoff quality and quantity, to mimic that of pre-construction runoff quality and quantity.

The US EPA recognizes urban runoff as the number one source of estuarine pollution in coastal communities[1]. Studies[2] conducted in the Southern California area and other studies have reported a definite link between storm water runoff from urban areas and pollution in

[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.

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 US. Table 1 includes a list of pollutants, their sources, and some of the adverse environmental consequences mostly resulting from urbanization.

Table 1[3]. Pollutants/Impacts of Urbanization on Waters of the US (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 US 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, etc.) 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.
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.
Radioactive isotopes	Atmospheric fallout, industrial and military activities	Few known effects on marine life; bioaccumulation may pose human health risks where contamination is heavy.

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

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.
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.
Alien species	Ships and ballast water, fishery stocking, aquarists	Displace native species, introduce new diseases; growing worldwide problem.

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, including the Ocean Plan.

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 regulations, 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).

During the previous permit (R8-2002-0010) 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. In response to this request, Regional Board staff in collaboration with the permittees in the region has organized a Storm Water Quality Standards Task Force. 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, 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 water quality standards 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 3.006[4] million, occupying an area of approximately 789 square miles (including unincorporated areas and the limits of 34 cities, 26 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

[4] SCAG County Population Forecasts for 2005 (this is for the entire County) ((http://www.eltoroairport.org/issues/population.html)

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. These excluded areas and activities include:

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

Discharges from the permitted area drain into the Pacific Ocean. The watersheds regulated under this order generally referred to as the San Diego Creek/Newport Bay watershed and 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, US 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 the San Gabriel River or systems controlled by other entities, such as the Los Angeles County Flood Control District, which are under the Los Angeles Regional Board's jurisdiction.

Some of these facilities, such as 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 is 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 (2008-2012) 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, proper site design considerations, 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. On July 13, 2006, the Los Angeles Regional Board adopted TMDLs for metals in the San Gabriel River watershed. However, because of the state's inability to meet the March 2007 deadline for an approved TMDL prescribed in a consent decree (Heal the Bay Inc., et al. v. Browner C98-4825 SBA), on March 26, 2007, the EPA promulgated TMDLs for metals and selenium for the San Gabriel River. The upper portions of Coyote Creek flow through Orange County to join the San Gabriel River above the tidal prism. Other unnamed tributaries located in northwestern Orange County also discharge into the San Gabriel River estuary. The EPA promulgated TMDLs include wet weather wasteload allocations for Coyote Creek for copper, lead and zinc and dry weather wasteload allocations for copper for Coyote Creek. The permittees are expected to implement programs and policies consistent with the metals and selenium TMDLs for the San Gabriel River

watershed. This includes constituent-specific source control programs or other equally effective programs to control the discharge of copper, lead and zinc into Coyote Creek and other tributaries in Orange County that discharge into the San Gabriel River.

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 through a collaborative effort of a number of state, federal, and local agencies and other entities the Bolsa Chica wetlands have been restored.

   Anaheim Bay and Huntington Harbour are listed as impaired waterbodies (see Table 2), 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. Several studies were conducted to trace the source(s) of the microbial contamination. These studies could not conclusively determine the sources of microbial contamination in the Huntington Beach area. However, urban runoff was identified as one of the sources. The permittees have diverted most of the dry-weather flows to the sanitary sewer system and significant improvements have been noted in the beach water quality.

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, and 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 and some of the pesticides (diazinon and chlorpyrifos). These TMDLs are being implemented. The current and future (year 2012) targets for the nutrient TMDLs are already being met. However, Board staff is currently reevaluating the nutrient TMDLs in light of evidence that there remains impairment of these waters due to eutrophication. In addition, toxics TMDLs were promulgated by USEPA on June 14, 2002, including TMDLs for metals and selenium, and a TMDL specific to the Rhine Channel located in Lower Newport Bay. The Regional Board is in the process of developing TMDL implementation plans for these TMDLs.

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. The IRWD constructed a number of water quality treatment wetlands for treating urban storm water runoff. These treatment wetlands are strategically located to capture and treat flows from different portions of the watershed. The IRWD also sponsored legislation that authorizes the District to collect storm water fees for maintenance of these treatment wetlands. These treatment wetlands are designed 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 site design, source control and 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. The State Board has developed conditions for special protection of ASBSs. All waste discharges to the ASBS are governed by the prohibition in the Ocean Plan are subject to the special protections prescribed by the State Board.

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

The 2006 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 303(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.

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	80111000	Nickel[5]	Source Unknown	Medium	402	Acres	2019
		Dieldrin[6]	Source Unknown	Medium	402	Acres	2019
		PCBs[7]	Source Unknown	Medium	402	Acres	2019
		Sediment Toxicity	Source Unknown	Medium	402	Acres	2019
Balboa Beach	80114000	Pesticides[8]	Source Unknown	Medium	1.8	Miles	2019
		PCBs	Source Unknown	Medium	1.8	Miles	2019
Bolsa Chica State Beach	80111000	Metals (copper and nickel)	Source Unknown	Medium	2.6	Miles	2019
Buck Gully Creek	80111000	Pathogens	Source Unknown	Medium	0.3	Miles	2019

[5] EPA listing
[6] EPA listing
[7] EPA listing
[8] DDT and Dieldrin

Huntington Beach State Park	80111000	Pathogens (Entrococcus and indicator bacteria)	Source Unknown	Medium	5.8	Miles	2019
		PCBs	Source Unknown	Medium	5.8	Miles	2019
Huntington Harbour	80111000	Metals (copper, lead, nickel)	Source Unknown	Medium	221	Acres	2019
		Pathogens	Urban Runoff/Storm Sewers	Medium	221	Acres	2019
		Chlordane	Source Unknown	Medium	221	Acres	2019
		PCBs	Source Unknown	Medium	221	Acres	2019
		Sediment Toxicity	Source Unknown	Medium	221	Acres	2019
Los Trancos Creek (Crystal Cove Creek)	80111000	Pathogens (fecal coliform, total coliform)	Source Unknown	Medium	0.19	Miles	2019
Newport Bay, Lower	80111000	Nutrients	Source Unknown	High	767	Acres	1999
		Chlordane	Source Unknown	Medium	767	Acres	2019
		DDT	Source Unknown	Medium	767	Acres	2019
		Copper	Source Unknown	High	767	Acres	2007
		PCBs	Source Unknown	Medium	767	Acres	2019
		Sediment Toxicity	Source Unknown	Medium	767	Acres	2019

Newport Bay, Upper Ecological Reserve	80111000	Nutrients	Source Unknown	High	653	Acres	1999
		Copper	Source Unknown	High	653	Acres	2007
		Chlordane	Source Unknown	Medium	653	Acres	2019
		Metals	Urban Runoff Storm Sewers	Medium	653	Acres	2019
		DDT	Source Unknown	Medium	653	Acres	2019
		PCBs	Source Unknown	Medium	653	Acres	2019
		Sediment Toxicity	Source Unknown	Medium	653	Acres	2019
Peters Canyon Channel	80111000	Pesticides (DDT, Toxaphene)	Source Unknown	Medium	3	Miles	2019
Rhine Channel	80114000	Metals (copper, lead, mercury, zinc)	Source Unknown	Medium	20	Acres	2019
		PCBs	Source Unknown	Medium	20	Acres	2019
		Sediment Toxicity	Source Unknown	Medium	20	Acres	2019

San Diego Creek, Reach 1	80111000	Nutrients	Source Unknown	High	7.8	Miles	1999
		Selenium	Source Unknown	High	7.8	Miles	2007
		Fecal Coliform	Urban Runoff/Storm Sewers Other Urban Runoff	Medium	7.8	Miles	2019
		Toxaphene	Source Unknown	Medium	7.8	Miles	2019
San Diego Creek Reach 2	80111000	Nutrients	Agriculture, Urban Runoff/Storm Sewer, Groundwater Loadings	High	6.3	Miles	1999
		Metals	Urban Runoff/Storm Sewers	High	6.3	Miles	2007
Santiago Creek R4	80112000	Salinity/ TDS/ Chlorides	Source Unknown	Low	9.8	Miles	2019
Seal Beach	80111000	Enterococcus	Source Unknown	Low	0.53	Miles	2019
		PCBs	Source Unknown	Low	0.53	Miles	2019
Silverado Creek	80112000	Pathogens	Unknown Nonpoint Source	Low	11	Miles	2019
		Salinity/ TDS/ Chlorides	Unknown Nonpoint Source	Low	11	Miles	2019

The proposed order includes numeric effluent limits based on the wasteload/load allocations developed and approved by the Regional Board, State Board, Office of Administrative Law and the EPA.

VI. FIRST, SECOND AND THIRD 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). On March 8, 1996, the Board adopted Order No. 96-31 (second term permit). On January 18, 2002, the Board adopted Order No. R8-2002-0010 (third term permit). These permits included the following requirements as outlined in the storm water regulations:

a. Prohibited non-storm water discharges to the MS4s, with certain exceptions.

b. 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[9]).

c. Required the discharges from the MS4s to meet water quality standards in receiving waters.

d. Required the municipalities to identify and eliminate illicit connections and illicit discharges to the MS4s.

e. Required the municipalities to establish and maintain legal authority to enforce storm water regulations.

f. Required monitoring of dry weather flows, storm flows, and receiving water quality, and required program assessment.

g. Required the permittees to identify and inspect construction sites and industrial and commercial facilities.

h. Required the permittees to develop and implement a Water Quality Management Plan to address post-development runoff.

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 1993 DAMP was updated a number of times and a draft 2007 version of the DAMP was submitted with the permit renewal application. 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) were used to identify problem areas and to re-evaluate the monitoring program and the effectiveness of the BMPs. The direction of these program elements were depended 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 illicit discharges and illicit connections 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 illicit discharges/illicit connections and have adopted appropriate ordinances to establish legal authority. Some of the more specific achievements during the previous 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.

[9] Maximum Extent Practicable (MEP) means to the maximum extent feasible, taking into account equitable 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.

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-Force, and others to further study and understand urban runoff problems and control measures. Supported regional studies to improve storm water management programs and monitoring programs through the Southern California Water Research Project.

i. *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, Model Water Quality Management Plan; and established a Technical Advisory Committee for overall program development and implementation.

j. *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, illicit discharges and illicit connections to the MS4 systems, and existing monitoring programs.

k. *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 (Fact Sheet) was developed (mobile detailing, automotive service centers, restaurants, pool maintenance). Finally, a countywide hotline was established for reporting any suspected water quality problems. The addition of the Residential Program to the fourth term permit includes requirements for permittees to identify residential areas and activities therein that are potential sources of pollutants and to develop Fact Sheets/BMPs for each and encourage residents to implement the pollution prevention measures.

l. *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, construction sites and public work projects. The municipal planners were trained to recognize water quality related problems in proposed developments. The fourth term permit includes additional training program requirements for storm water program managers and inspection staff. This was added following information collected during Regional Board staff audits of permittee's storm water management programs, which found that many of the permittee's storm water staff were inadequately trained to properly implement the required program elements contained within the third term permit.

m. *Related Activities:* Flood control channels were stabilized, sediment basins were constructed, and debris booms were installed; illicit connections were eliminated and illicit connections to the MS4s were documented , eradicated or permitted. During the third term permit, litter/trash control ordinances were reviewed and revised, and trash characterization programs were encouraged. Within the fourth term permit, a trash control element has been added as a requirement.

VII. PRIOR 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 prior permit terms did not indicate any discernible trends or significant changes. However, the most recent monitoring data indicate that there are reductions in the mass loading rates for some of the metals like copper and zinc and improvements in beach water quality after diversion of dry weather flows to the sanitary sewers. The non-conventional monitoring data also indicate that other programs and policies have been very effective in keeping a significant quantity of wastes from being discharged into waters of the US.

During the second and third term permits, 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, including low impact developments, the goals and objectives of the storm water regulations will be met, including protection of water quality standards for all receiving waters.

VIII. FUTURE DIRECTION/2007 DRAFT DAMP

The NPDES permit renewal application included a revised draft of the DAMP (2007 DAMP) that includes programs and policies the permittees are proposing to implement during the fourth term permit. The 2007 draft 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.

    n. Continues to provide the legal authority to control discharges to the MS4s.

    o. Improves current BMPs to achieve further reduction in pollutant loading to the MS4s.

    p. Continues to include programs and policies for public education processes and to seek public support for urban storm water pollution prevention BMPs.

    q. Increases requirements for controls on new developments and significant redevelopments.

    r. Continues to ensure that construction sites implement appropriate pollution control measures during construction and effective post-construction water quality management plan (WQMP) implementation.

    s. Continues to ensure that industrial sites are adequately identified, categorized and inspected for compliance with storm water regulations.

    t. Continues to include programs and policies to eliminate illicit discharges and illicit connections to the MS4s.

    u. Continues to include monitoring of urban runoff.

    v. 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), US 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 US 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 authority. 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 (fourth term permit). The proposed 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, second and third 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 somewhat less prescriptive when compared to some of the MS4 NPDES permits for urban runoff issued by other Regional Boards. However, in many other respects, it incorporates an integrated watershed approach in solving urban runoff related water quality and quantity issues. The proposed permit also includes numeric effluent limits based on wasteload/load allocations. With these requirements, 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 illicit discharges; (4) Public and business education; (5) Adequate legal authority; (6) Programs and policies for municipal facilities and activities; (7) Inspection Activities by the municipalities; (8) New development/re-development requirements including a requirement to fully implement low impact development principles and to minimize any hydrologic conditions of concern; (9) Waste load allocations for nutrients, sediment, and fecal coliform bacteria; metals, and pesticides, including numeric effluent limits; and (10) 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 Minimis 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 US 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. ILLICIT 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 illicit 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 proposed order includes additional requirements to address runoff from residential developments. The permittees have developed a number of educational materials, 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 illicit discharges. Several coastline municipalities have regularly issue Citations. 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. The third term permit required the permittees 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 permittees now have this authority for civil or criminal penalties. Within the fourth term permit, permittees are required to exercise this authority by developing an enforcement program to be administered within the industrial, commercial and construction elements of their storm water management programs. The enforcement program has been required to be included as an update to each permittee's respective Local Implementation Plan.

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 and third term permits 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. The proposed order requires the permittees to continue to re-evaluate their facilities and activities on an annual basis to see if additional BMPs are needed to ensure water quality protection.

7. MUNICIPAL INSPECTION PROGRAM

The third term permit included requirements for inspection of construction, industrial, and commercial facilities within the permittees' jurisdiction in order to control the loading of pollutants entering the MS4 system. The permittees were required to inventory construction, industrial and commercial facilities; prioritize those facilities with respect to their potential for discharge of pollutants in runoff and their proximity to sensitive receiving waters; and perform regular inspections to insure compliance with local ordinances. Within the fourth term permit, permittees are also to develop a pilot program targeted at mobile businesses (mobile detailers, pool & carpet cleaning, etc.) that have been identified as potential pollutant sources. While initial observations of non-compliance may result in 'educational' type enforcement, repeated non-compliance will result in more severe forms of enforcement, such as monetary penalties, stop work orders or permit revocation. Regional Board staff audits of permittees' storm water programs during the third term permit found that a large percentage of the permittees had characterized inventories of construction, industrial and commercial facilities within each permittee's respective jurisdiction. However, upon review of each permittees inventory and inspection data, Regional Board staff noted that criteria outlined within the third term permit regarding program element criteria yielded a wide range of interpretation between permittees. Therefore, more prescriptive requirements within this element of the permit are included in the fourth term permit. The fourth term permit has also added a residential program element to be implemented by the permittees. This element improves upon the existing requirements within the third term permit, by adding specific criteria associated with developing a more successful means of reducing the discharge of pollutants from residential areas into the MS4 to the maximum extent practicable.

8. NEW DEVELOPMENT

During the third term permit, the permittees developed and revised existing new development guidelines. The permittees were required to implement these guidelines, with program implementation of post construction Water Quality Management Plan (WQMP) criteria standards. 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 are required to implement low impact development principles through appropriate site design and source control BMPs. Recent studies have indicated that low impact development[10] (LID) is one of the most effective ways to minimize any adverse impacts on storm water runoff quality and quantity resulting from urban developments. The Southern California Monitoring Coalition (SMC), including project lead agency, the San Bernardino County Flood Control District, in collaboration with SMC member, Southern California Coastal Water Research Project (SCCWRP) and the California Storm Water Quality Association (CASQA), is developing a Low Impact Development Manual for Southern California with funding from the State Water Resources Control Board. This manual will be

[10] Low impact development is an approach to land development (or re-development) that works with nature to manage storm water as close to its source as possible by using structural and non-structural best management practices to reduce environmental impacts.

incorporated into the CASQA BMP Handbooks. The permittees are encouraged to utilize the manual as a resource for proper LID design and implementation techniques. In order to avoid becoming a source of nuisance, a source of mobilization for existing subterranean contaminants and/or a source of habitat for vectors, LID infiltration BMPs must be properly designed and subsequently maintained.

The proposed order also includes a requirement to infiltrate, harvest and re-use, evapotranpirate or capture the volume of runoff produced from a 24-hour, 85th percentile storm event (design capture volume) for new and re-development projects. It also recognizes that certain soil and groundwater conditions, as well as other site conditions might preclude a particular site from achieving onsite retention and/or treatment of the design capture volume and includes alternatives and in-lieu programs.

Post construction activities conducted at properties that have been developed for commercial or industrial use may substantially increase the risk of post construction pollutants being generated from the developed site. Therefore, the WQMP threshold criteria priority development projects in the proposed order have been redefined from those of third term permit. Third term permit thresholds currently require the development and implementation of post construction WQMP for non-residential commercial/industrial construction projects, where the combined impervious surface area of the project is equal to or greater than 100,000 square feet. WQMP requirement thresholds for residential projects require a WQMP to be prepared when subdivision projects include 10 lots and units or more. Proposed fourth term permit threshold requirements for WQMP development and implementation have become standardized for commercial/industrial, as well as residential construction projects, where the combined impervious surface area of the project is equal to or greater than 10,000 square feet. The aforementioned criteria were redefined in order to adequately address potential pollutant sources, which may exist at properties which undergo development for commercial and industrial uses. Other criteria, which constitute a priority development project have carried over from third term permit to the proposed order.

9. SANITARY SEWER OVERFLOWS, SEPTIC SYSTEM FAILURES AND PORTABLE TOILET DISCHARGES

The third term permit required the permittees to investigate adverse impacts on urban runoff quality from leaking septic systems and portable toilets. The information provided by the permittees indicates that leaking or failing septic systems are not significant problems in Orange County as most areas of the County are sewered. A number of beach closures in Orange County have been due to spills, overflows, and leaks from the sanitary sewer lines. To address these concerns, waste discharge requirements (SSO order) for local sanitary sewer agencies were adopted by the Regional Board. Subsequently, the State Board adopted an SSO order, Water Quality Order No. 2006-0003, to address this problem on a statewide basis. The Regional Board SSO order has since been rescinded. The permittees are required to comply with the statewide SSO order.

10. 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 were:

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 focused on three areas:

a. Areas where constituent concentrations are substantially above system-wide averages. These areas were 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.

Based on the results of this monitoring program and the requirements specified in the third term permit and based on guidance provided in "The Model Monitoring Program for Southern California"[11] , a revised monitoring program was submitted (2003 Monitoring Program).

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 July 1, 2003, the permittees were required to re-evaluate their Water Quality Monitoring Program and submit a revised plan for approval. In February 2003, a revised plan was developed and final approval was given by the Executive Officer in July 2005. The revised plan includes the following monitoring elements: Mass Emissions, Estuary/Wetlands, Water Column Toxicity, Bacteriological/Pathogen, Bioassessment, Reconnaissance, Land Use Correlation, and TMDL/303(d) Listed Waterbodies.

[11] The Model Monitoring Program for Municipal

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 US waters were swimmable and fishable. In 2001, 2/3 of the US waters meets these criteria. In the 2008, *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. According to the Orange County 2006 Community Indicators Project, it is estimated that on average, an out-of –county visitor spent an average of $107.00 per day in 2004. Huntington Beach's 8.5-mile shoreline attracts 10 million visitors a year[12]. 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 by implementing regional BMPs 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):

[12] Los Angeles Times, May 9, 2001

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; coordination of consultant studies, co-permittee meetings; and training seminars, water quality monitoring, and Countywide pubic education and outreach. Shared costs have increased from $0.81M at the inception of the Orange County Stormwater Program to $4.8M in 2006-7.

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. In 2006/07, the Permittees determined their total Individual Costs to be $82.2M.

In addition to these expenditures, volunteer efforts (such as the annual "Beach and Innercoastal Watershed Cleanup Day", etc.) also contributed to the urban runoff pollution control efforts.

The permittees identified the following funding sources (2006/07):

FUNDING SOURCE	*PERCENTAGE*
General Funds	11.8%
Gas Taxes	1.3%
Grants	30%
Sanitation Fees	31.3%
Time & Materials Ordinance & Permit Fees	0.6%
Special District Funds	24.3%
Other Sources	0.2%

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 opened a public hearing regarding the proposed waste discharge requirements on Friday, November 21, 2008 at 9:30 a.m. at the City Council Chambers, City of Yorba Linda. The public hearing was continued on Friday, January 18, 2002 at 9:00 a.m. at the City Council Chambers, City of Santa Ana, at which time Order No. R8-2002-0010 was adopted.

XIV. INFORMATION AND COPYING

Persons wishing further information may write to the above address or call Marc Brown at (951) 321-4584. 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.

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

U. S. Environmental Protection Agency – Eugene Bromley (W-5-1)
US Army District, Los Angeles, Corps of Engineers - Permits Section
NOAA, National Marine Fisheries Service
US Fish and Wildlife Service - Carlsbad
State Water Resources Control Board – David Rice, Office of the Chief Counsel
State Water Resources Control Board – Bruce Fujimoto, Division of Water Quality
State Department of Water Resources - Glendale
California Regional Water Quality Control Board, North Coast Region (1) – Executive Officer
California Regional Water Quality Control Board, San Francisco Bay Region (2) – Executive Officer
California Regional Water Quality Control Board, Central Coast Region (3) –Executive Officer
California Regional Water Quality Control Board, Los Angeles Region (4) – Tracy Egoscue
California Regional Water Quality Control Board, Central Valley Region (5S) – Executive Officer
California Regional Water Quality Control Board, Central Valley Region (5R), Redding - AEO
California Regional Water Quality Control Board, Central Valley Region (5F), Fresno – AEO
California Regional Water Quality Control Board, Lahontan Region (6SLT), South Lake Tahoe – Executive Officer
California Regional Water Quality Control Board, Lahontan Region (6V), Victorville – AEO
California Regional Water Quality Control Board, Colorado River Basin Region (7) – Robert Purdue
California Regional Water Quality Control Board, San Diego Region (9) – John Robertus
State Department of Fish and Game - Long Beach
State Department of Health Services - Santa Ana
State Department of Parks and Recreation –
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 – Mark Grey
Latham & Watkins – Paul Singarella
Best, Best, and Krieger –

Southern California Association of Governments, Los Angeles - General Manager

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 – Daniel Cooper
Orange County Coastkeeper – Garry Brown
Defend the Bay – Bob Caustin
Sierra Club, Orange County Chapter
Sierra Club, Los Angeles Chapter - General Manager
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

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

Major Water/Wastewater Agencies
Santa Ana Watershed Project Authority – Celeste Cantu
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 - Robert Ghirelli
Orange County Water District – General Manager
Metropolitan Water District - Ed Mean

TAB "3"

California Regional Water Quality Control Board
Santa Ana Region

ORDER NO. R8-2002-0010
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 outfalls from the MS4 systems in Orange County enter, or 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, the 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:

   Inland Surface Streams

   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.

   Bays, Estuaries, and Tidal Prisms

   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. Anaheim Lakes,

b. Irvine Lake (Santiago Reservoir),

c. 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 they observe conditions that pose a threat or potential threat to water quality, or when an industrial facility or

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

construction activity that has failed to obtain required coverage under the appropriate general storm water permit.

12. The permittees have the authority to approve plans for residential, commercial, and industrial developments. If not properly controlled and managed, urbanization could result in the discharge of pollutants in storm water 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, 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 illicit[2] disposal practices and illegal 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. Water quality assessments conducted by Regional Board staff have identified a number of 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, one of the listed causes of impairment is 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,

[2] Illicit Disposal means any disposal, either intentionally or unintentionally, of material or waste that can pollute storm water or create a nuisance.

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. This order specifies the WLAs and includes requirements for the implementation of these WLAs.

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. 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 a separate NPDES permit, or are exempt, as indicated in Discharge Prohibitions, Section III.3 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[3] and illicit discharges[4] 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)[5]. 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. R8-2002-0010, 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 which the permittees conduct, approve, regulate and/or authorize by issuing a license or permit.

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

    a. A summary of status of current Storm Water Management Program;

    b. A 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;

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[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.

[4] Illicit Discharge means any discharge to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term illicit discharge includes all non storm-water discharges except discharges pursuant to an NPDES permit, discharges that are identified in Section III, Discharge Limitations/Prohibitions, of this order, and discharges authorized by the Regional Board Exectutive Officer.

[5] Maximum Extent Practicable (MEP) means to the maximum extent feasible, 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.

c. A Performance Commitment that includes new and existing 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;

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

g. A fiscal analysis.

24. The permittees own and/or 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, 3 & 5 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.

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; update or modify the DAMP, when appropriate, consistent with the MEP and other applicable standards; 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. The 1998 monitoring program was approved and the data collection under this program will be completed by July 1, 2003. By January 1, 2003, the State Board is required by SB 72 (Water Code Section 13383.5) to develop a statewide municipal strom water monitoring program. By July 1, 2003, the permittees are required to develop a revised monitoring program as specified in the monitoring and reporting program and consistent with any new requirements developed by the State Board.

31. In accordance with the Strategic Plan and Initiatives for the State and Regional Boards (June 22, 1995), 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 municipal storm water monitoring programs have already been integrated into regional monitoring programs.

32. Illegal discharges to the storm drains can 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 discharges to their storm drains and flood control facilities. Continued surveillance and enforcement of these programs are required to eliminate illicit discharges. The permittees have a number of mechanisms in place to eliminate illicit discharges to the MS4s, including construction, commercial, and 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 illegal connections (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 connections and illicit discharges, 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. 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 require the implementation of best management practices to reduce to the maximum extent practicable, the discharge of pollutants in storm water from the MS4s in order to support attainment of water quality standards. This order, therefore, includes Receiving Water Limitations[6] based upon water quality objectives, prohibits the creation of nuisance and requires 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 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 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 in order to comply with this aspect of the order. The order establishes an iterative process to maintain compliance with the receiving water limitations.

39. The permittees are required to conduct inspections of construction sites, industrial facilities and commercial establishments. To avoid duplicative efforts, the permittees need not inspect facilities that have been inspected by Regional Board staff, if the inspection was conducted during the specified time period. Regional Board staff inspection data will be posted regularly on its internet site. It is anticipated that many of the inspections required under this order 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.

40. 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).

41. The requirements contained in this order are necessary to implement the plans and policies described in Finding 40, 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

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[6] Receiving Water Limitations are requirements included in the Orders issued by the Board to assure that the regulated discharge does not violate water quality standards established in the Basin Plan at the point of discharge to waters of the State.

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.

42. 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.

43. 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.

44. 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.

45. 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.

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

47. 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.

48. 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. TMDLs are being developed for some of these pesticides for the Newport Bay watershed.

49. 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.

50. 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.

51. 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 approve, after proper public notification and consideration of all comments received, the watershed management initiatives and regional planning and coordination programs and regional monitoring programs. The permittees are required to submit all documents, where appropriate, in an electronic format. All such documents will be posted at the Regional Board's website and all interested parties will be notified. In addition, the website will include the administrative and civil procedures for appealing any decision made by the Executive Officer.

52. 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.

53. 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.

54. 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 combination of programs and policies required to be implemented under this order for new and existing developmens are designed to improve urban storm water quality.

55. 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.

56. 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 required 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, illicit discharges and illegal 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 illicit 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 shall 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 area-wide 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 DAMP, and take such other actions as may be necessary to meet the MEP standard.
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, and take any other actions as may be necessary to meet the MEP standard.
2. Coordinate among their 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 illicit discharges to the MS4 system owned or controlled by the co-permittee.

The co-permittees' activities shall 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 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, illicit discharges and illegal 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 required reports to the principal permittee in a timely manner.

III. DISCHARGE LIMITATIONS/PROHIBITIONS

1. In accordance with the requirements of 40 CFR 122.26(d)(2)(i)(B) and 40 CFR 122.26(d)(2)(i)(F), the permittees shall prohibit illicit/illegal discharges (non-storm water) from entering into the municipal separate storm sewer systems.
2. The discharge of storm water from the MS4s to waters of the United States containing pollutants that have not been reduced to the maximum extent practicable is prohibited.
3. 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 as otherwise specified in this provision. Certain discharges identified below need not be prohibited by the permittees. If, however, any of these discharges are identified by the permittees or the Executive Officer as a significant source of pollutants, coverage under the Regional Board's De Minimus permit may be required.
    a. Discharges composed entirely of storm water,
    b. Potable water line flushing and other potable water sources,
    c. Air conditioning condensate,
    d. Landscape irrigation, lawn garden watering and other irrigation waters,
    e. Passive foundation drains,
    f. Passive footing drains,
    g. Water from crawl space pumps,
    h. Dechlorinated swimming pool discharges,
    i. Non-commercial vehicle washing,
    j. Diverted stream flows,
    k. Rising ground waters and natural springs,
    l. Ground water infiltration as defined in 40 CFR 35.2005 (20) and uncontaminated pumped groundwater,
    m. Flows from riparian habitats and wetlands,
    n. Emergency fire fighting flows (i.e., flows necessary for the protection of life and property) do not require BMPs and need not be prohibited. However, where possible, when not interferring with health and safety issues, BMPs should be considered (also see Section XIX, Provision 4),
    o. Waters not otherwise containing wastes as defined in California Water Code Section 13050 (d), and

p. Other types of discharges identified and recommended by the permittees and approved by the Regional Board.

The Regional Board 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 significant source of pollutants.

4. For purposes of this order, a discharge may include storm water or other types of discharges, identified in Section III.3.

5. 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 Section III.3. 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.

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

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

8. Discharges from the MS4s of storm water or non-storm water, for which a Permittee is responsible, shall not cause or contribute to a condition of nuisance, as that term is defined in Section 13050 of the Water Code.

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. The DAMP and its components shall be designed to achieve compliance with receiving water limitations. It is expected that compliance with receiving water limitations will be achieved through an iterative process and the application of increasingly more effective BMPs. The permittees shall comply with Sections III.2 and IV 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.

3. If permittees continue to cause or contribute to an exceedance of water quality standards, notwithstanding implementation of the DAMP and other requirements of this order, the permittees shall assure compliance with Sections III.2 and IV 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; and,

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 the Executive Officer determines it is necessary to develop additional BMPs.

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 adequate legal authority to control the contribution of pollutants to the MS4 by storm water discharges and enforce those authorities.
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 November 15, 2003.

4. By November 15, 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 November 15, 2003, the permittees shall review their water quality ordinances and provide a report on the effectiveness of these ordinances and associated enforcement programs, 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 a co-permittee operates the sewage collection system;
    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, and commercial sites, 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 that contain chemicals, fuels, grease, oil, or other hazardous materials[7];
    g. Discharges of runoff from the washing of toxic materials[8] from paved or unpaved areas;
    h. Discharges of 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.; and,
    j. Restaurant or food processing facility wastes such as grease, floor mat and trash bin wash water, food waste, etc.

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[7] Hazardous Material is defined as any substrate that poses a threat to human health or the environment due to its toxicity, corrosiveness, ignitability, explosive nature or chemical reactivity. These also include materials named by EPA to be reported if a designed quantity of the material is spilled into the waters of the United States or emitted into the environment.

[8] Toxic Material is a chemical or a mixture that may present an unreasonable risk of injury to health or the environment.

7. The Principal Permittee shall, on or before July 1, 2002, develop a restaurant inspection program which shall, at a minimum, address:
   a. Oil and grease disposal to verify that these wastes are not poured onto a parking lot, street or adjacent catch basin;
   b. Trash bin areas to verify that these areas are clean, the bin lids are closed, the bins are not filled with liquid and the bins have 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 areas to verify that they are cleaned by sweeping, not by hosing down and that the facility operator uses dry methods for spill cleanup; and,
   e. Inspection of existing devices designed to separate grease from wastewater (e.g., grease traps or interceptors) to ensure adequate capacity and proper maintenance.

VII. ILLEGAL CONNECTIONS; LITTER, DEBRIS AND TRASH CONTROL

1. The permittees shall continue to prohibit all illegal connections to the MS4s through their ordinances, inspections, and monitoring programs. If routine inspections or dry weather monitoring indicate any 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 pose an immediate threat to human health or the environment, e.g., sewage spills that could impact water contact recreation, an oil spill that could impact wild life, a hazardous substance spill where residents are evacuated, etc.) 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 October 15, 2002, an inventory of all construction sites within its jurisdiction for which building or grading permits are issued and activities at the site include: soil movement; uncovered storage of materials or wastes, such as dirt, sand or fertilizer; or exterior mixing of cementaceous products, such as concrete, mortar or stucco. Sites will be included 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 shall be updated prior to each rainy season thereafter. This inventory shall be maintained in a computer-based database system and shall 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. At a minimum, high priority construction sites shall include: sites over 50 acres; sites over 5 acres that are tributary to Clean Water Act section 303(d) waters listed for sediment or turbidity impairments; and sites that are tributary to and within 500 feet of an area defined by the Ocean Plan as an Area of Special Biological Significance (ASBS) .

3. Each permittee shall conduct construction site inspections for compliance with its ordinances (grading, Water Quality Management Plans, etc.) and local permits (construction, grading, etc.). 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 priority sites are to be inspected at least twice during the wet season. All low priority sites are to be inspected at least once 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 a 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 properly controlled and that unauthorized, non-storm water discharges are prevented; and,

   c. Information including, at a minimum, inspection dates, inspectors present and the results of the inspection, must be maintained in the database identified in Section VIII.1 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.
5. Within 24 hours of discovery, each permittee shall provide oral or e-mail 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 health or the environment (e.g., sewage spills that could impact water contact recreation, an oil spill that could impact wildlife, a hazardous substance spill where residents are evacuated, etc.). Following oral notification, a written report must be submitted to the Santa Ana Regional Water Quality Control Board within 10 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 Sections VIII.1 and 3.c or must be linked to these databases.
6. The inspectors responsible for ensuring compliance at construction sites shall 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 shall have adequately trained its inspection staff by October 15, 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 shall be provided to 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.
7. The permittees need not inspect facilities already inspected by Regional Board staff if the inspection was conducted within the specified time period.

IX. MUNICIPAL INSPECTIONS OF INDUSTRIAL FACILTIES

1. Each permittee shall develop by July 1, 2003, an inventory of industrial facilities within its jurisdiction with business permits or other authorization by permittees, that have the potential to discharge pollutants to the MS4. Facilities will be listed, 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 facilities within their jurisdiction as a high, medium or low threat to water quality. 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. 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); facilities requiring coverage under the General Industrial Permit; facilities with a high potential for, or history of, unauthorized, non-storm water discharges; and facilities that are tributary to, and within 500 feet of, an area defined by the Ocean Plan as an Area of Special Biological Significance (ASBS).

3. Each permittee shall conduct industrial facility inspections for compliance with its ordinances and permits. 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. All high priority facilities identified in IX.2 shall be inspected and a report on these inspections shall be submitted by November 15, 2003 and a report of inspections during subsequent years shall be included in the annual report for that year.

4. After July 1, 2003, all high priority sites are to be inspected at least once a year; 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, 2005, each permittee shall identify the remaining industrial facilities that do not have business permits or other authorization by the permittees. These facilities shall be added to the database identified in Section IX.1 and shall be prioritized in accordance with the specifications identified in Section IX.2.

6. Information including, at a minimum, inspection dates, inspectors present and the results of the inspection must be maintained in the database identified in Section IX.1 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 facilities as necessary to maintain compliance with this Order. Sanctions for non-compliance must include: monetary penalties, bonding requirements and/or permit denial or revocation.

8. Within 24 hours, each permittee shall provide oral or e-mail 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 health or the environment (e.g., sewage spills that could impact water contact recreation, an oil spill that could impact wildlife, a hazardous substance spill where residents are evacuated, etc.). Following oral notification, a written report must be submitted to the Santa Ana Regional Water Quality Control Board within 10 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 Section IX.1.

9. The inspectors responsible for ensuring compliance at industrial facilities shall be trained in and have an understanding of: federal, state and local water quality laws and regulations as they apply to industrial activities; the potential effects of industrial discharges and urbanization on water quality; and implementation and maintenance of pollutant control BMPs. Each permittee shall have adequately trained their inspection staff by July 1, 2003, 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 shall be provided to Regional Board staff. New hires or transfers that will be performing industrial inspections for the permittees must be trained within one month of starting inspection duties.
10. The permittees need not inspect facilities already inspected by Regional Board staff, if the inspection was conducted within the specified time period.

X. MUNICIPAL INSPECTIONS OF COMMERCIAL FACILITIES

1. Each permittee shall develop by July 1, 2003, an inventory of the following commercial facilities/companies listed below within its jurisdiction. 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, size, location, etc. Inclusion of a Geographical Information System (GIS) is recommended but not required.

    a. Automobile mechanical repair, maintenance, fueling or cleaning;

    b. Automobile and other vehicle body repair or painting;

    c. Mobile automobile or other vehicle washing;

    d. Mobile carpet, drape or furniture cleaning;

    e. Mobile high pressure or steam cleaning;

    f. Painting and coating;

    g. Nurseries and greenhouses;

    h. Landscape and hardscape installation;

    i. Pool, lake and fountain cleaning;

j. Other commercial sites/sources that the Permittee determines may contribute a significant pollutant load to the MS4; and,

k. Any commercial sites or sources that are tributary to and within 500 feet of an area defined by the Ocean Plan as an Area of Special Biological Significance (ASBS).

2. To establish priorities for inspection requirements under this Order, the permittees shall prioritize commercial facilities/companies within their jurisdiction as a high, medium or low threat to water quality based on such factors as the type, magnitude and location of the commercial activity, potential for discharge of pollutants to the MS4 and any history of unauthorized, non-storm water discharges.

3. Each permittee shall conduct commercial facility inspections for compliance with its ordinances and permits. 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, each permittee shall establish inspection frequencies and priorities as determined by the threat to water quality prioritization described in X.2. 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.

5. By July 1, 2004, all high priority sites shall be 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 Section X.1 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 commercial facilities. Sanctions for non-compliance must include: monetary penalties, bonding requirements and/or permit denial or revocation.

8. Within 24 hours, each permittee shall provide oral or e-mail 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 health or the environment (e.g., sewage spills that could impact water contact recreation, an oil spill that could impact wildlife, a hazardous substance spill where residents are evacuated, etc.). Following oral notification, a written report must be submitted to the Santa Ana Regional Water Quality Control Board within 5 days. For incidents that do not pose a threat to human or environmental health, the permittees shall submit a written report within 30 days of the incident. All written reports shall detail the nature of the non-compliance, identify any corrective action taken by the site owner, note 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 Section X.1.

9. The inspectors responsible for ensuring compliance at commercial facilities shall 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 shall have adequately trained their inspection staff by July 1, 2003 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 shall be provided to Regional Board staff. New hires or transfers that will be performing commercial inspections for the permittees must be trained within one month of starting inspection duties.

10. The permittees need not inspect facilities already inspected by Regional Board staff if the inspection was conducted within the specified time period.

XI. SEPTIC SYSTEM FAILURES AND PORTABLE TOILET DISCHARGES

1. By July 1, 2003, the permittees, whose jurisdictions have 50 or more septic tank or 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.
2. 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 sites 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.
2. Each permittee shall minimize the short and long-term impacts on receiving water quality from new developments and re-developments, as required in Section XII.B.1., below. In order to reduce pollutants and runoff flows from new developments and re-developments to the maximum extent practicable, permittees should, at a minimum:
   a. Review General Plan/CEQA Processes
   b. Modify the Project Approval Process
   c. Conduct Public/Business Education

3. By December 19, 2002, the permittees shall review their planning procedures and CEQA document preparation processes to ensure that urban runoff-related issues are properly considered and addressed. If necessary, these processes should be revised by that date to consider and mitigate impacts to storm water quality. These changes 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 findings of this review and the actions taken by the permittees shall be reported to the Regional Board by January 2, 2003. The following potential impacts shall be considered during CEQA review:

   a. Potential impact of project construction on storm water runoff;

   b. Potential impact of project's post-construction activity on storm water runoff;

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

   d. Potential for discharge of storm water to affect the beneficial uses of the receiving waters;

   e. Potential for significant changes in the flow velocity or volume of storm water runoff to cause environmental harm; and,

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

4. By July 1, 2004, the permittees shall review their watershed protection principles and policies in their General Plan or related documents (such as Development Standards, Zoning Codes, Conditions of Approval, Development Project Guidance) to ensure that these principals and policies are properly considered and are incorporated into these documents. The findings of this review and the actions taken by the permittees shall be reported to the Regional Board by November 15, 2004. These principles and policies should 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; and 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 have no significant adverse impact on downstream erosion and stream habitat; minimize the quantity of storm water directed to impermeable surfaces and the MS4s; and maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;

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

d. Encourage the use of water quality wetlands, biofiltration swales, watershed-scale retrofits, etc., where such measures are likely to be effective and technically and economically feasible;

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

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

5. 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.

6. By July 1, 2003, the permittees shall review and, as necessary, revise their current grading/erosion control ordinances in order to reduce erosion caused by new development or significant re-development projects.

7. 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.

8. By November 15, 2003, the principal permittee shall submit a proposal for a study to evaluate the effectiveness of a group of selected BMPs for controlling erosion during new development. Based on the results of this study, one or more BMPs will be identified as (a) County-preferred BMP(s) for erosion control during new development. This proposal shall include details of the new development project site, the BMPs selected for the study, and a proposed schedule. The proposed and final BMP selection shall be approved by the Regional Board Executive Officer and the study shall be completed by the end of this permit term.

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

10. 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.

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

1. By March 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 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 residences, condominiums, apartments, etc.

c. Commercial and industrial developments of 100,000 square feet or more. This includes non-residential developments such as hospitals, educational institutions (to the extent the permittees have authority to regulate these developments), recreational facilities, mini-malls, hotels, office buildings, warehouses, and light & heavy 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 on 10,000 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 a land area or facility for the temporary storage of motor vehicles.

2. The permittees are encouraged to include in the WQMP the development and implementation of regional and/or watershed management programs that address runoff from new development and significant re-development. The WQMP shall include BMPs for source control, pollution prevention, and/or structural treatment BMPs. For all structural treatment controls, the WQMP shall identify the responsible party for maintenance of the treatment system, and a funding source or sources for its operation and maintenance. The goal of the WQMP is to develop and implement practicable programs and policies to minimize the effects of urbanization on site hydrology, urban runoff flow rates or velocities and pollutant loads. This goal may be achieved through watershed-based structural treatment controls, in combination with site-specific BMPs. The 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 using controls that utilize best available technology (BAT) and best conventional tecnology (BCT).

   b. The discharge of any listed pollutant to an impaired waterbody on the 303(d) list shall not cause an exceedence of receiving water quality objectives.

3. During the time that the WQMP is being revised, the permittees shall implement their existing requirements for new development (Appendix G of the DAMP). If the Executive Officer does not approve the revised WQMP by October 1, 2003, as meeting

the goals proposed in XII.B.2, above and providing an equivalent or superior degree of treatment as the sized criteria outlined in XII.B.3.A, B and C, below, structural BMPs shall be required for all new development and significant redevelopment[2]. 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, either on a site basis or a watershed basis:

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,
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

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[2] Where new development is defined as projects for which tentative tract or parcel map approval was not received by July 1, 2003 and new re-development is defined as projects for which all necessary permits were not issued by July 1, 2003. New development does not include projects receiving map approvals after July 1, 2003 that are proceeding under a common scheme of development that was the subject of a tentative tract or parcel map approval that occurred prior to July 1, 2003.

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 or pollution, as defined in Water Code Section 13050 .

4. 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 approved equivalent sizing criteria, the permittees shall implement the above stated sizing criteria.

5. If a particular BMP is not technically feasible, other BMPs should be implemented to achieve the same level of compliance, or if the cost of BMP implementation greatly outweighs the pollution control benefits, the permittees may grant a waiver of the numeric sizing criteria. All waivers, along with waiver justification documentation, must be reported to the Regional Board in writing within 30 days. 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 waivers are being inappropriately granted, this Order may be reopened to modify these waiver conditions.

6. The obligation to install minimum structural BMPs at new development is met if, for a common scheme of development, BMPs are constructed with the requisite capacity to serve the entire common scheme, even if cerain phases of the common scheme may not have BMP capacity located on that phase in accordance with the requirements specified above.

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, regiona, 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 March 1, 2002, 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 and that those impressions measurably increase the knowledge and measurably change the behavior of the targeted groups. By November 15, 2002, the Public Education Committee shall propose a study for measuring changes in knowledge and behavior as a result of the education program. Upon approval by the Regional Board Executive Officer, the study shall be completed by the end of the permit cycle. 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. By July 1, 2002, the permittees shall develop public education materials to encourage the public to report (including a hotline 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 shall be included in the public and business education program and shall 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, and 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 to 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 reduce the discharge of pollutants into the waters of the U.S. to the maximum extent practicable.

2. By July 1, 2003, 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. This shall be reported in the 2002-2003 annual report.

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 inspection, cleaning and 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 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, clean 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, 2004, the permittees shall develop and submit for approval by the Executive Officer, a more aggressive program for cleaning out drainage facilities, including catch basins. This program should be based on a list of drainage facilities, prioritized on such factors as distance to receiving water, receiving water beneficial uses and impairments of beneficial uses, historical pollutant types and loads from past inspections/cleanings and the presence of downstream regional facilities that would remove the types of pollutants found in the drainage facility. Using this list, the permittees shall propose clean out schedules for all drainage facilities with a minimum frequency of once a year and a maximum frequency of monthly, during the storm season. The permittees should be prepared to implement the approved clean out program beginning with the 2004-2005 storm season.

8. 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 meet the following target load allocations for nutrients in urban runoff by implementing the BMPs contained in Appendix N (DAMP, Section 12) and in accordance with the approved TMDL implementation plan incorporated in the Basin Plan.

(This section intentionally left blank.)

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

Nutrient TMDL	1990-1997 Loading	2002 Summer Allocation (Apr-Sept)[5]	2007 Summer Allocation (Apr-Sept)[5]	2012 Winter Allocation (Oct-Mar)[4, 5, 6]
Newport Bay Watershed	lbs/year TN[1,2]	lbs/season TN	lbs/season TN	lbs/season TN
Wasteload Allocation				
Urban runoff	277,131[3]	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 Estimated annual average (summer and winter loading).
4 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.
5 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.
6 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 meet the following target load allocations for sediment in urban runoff by implementing the BMPs contained in Appendix N of the DAMP and the "March 1999 Technical Report on the Implementation of the TMDL for Sediment in the Newport Bay Watershed, the October 1999 Preliminary Sediment Load Allocation Analysis for San Diego Creek and Newport Bay, and the February 2000 Sediment Yield and Transport Investigation for San Diego Creek and Newport Bay".

    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 January 2000, March 2000 and April 2000 Newport Bay Fecal Coliform TMDL Technical Reports submitted by the permittees.

4. This order may be reopened to include additional requirements based on new or revised TMDLs.

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. In addition, 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. All reports submitted by the permittees as per the requirements in this Order for the approval of the Executive Officer shall be publicly noticed and made available on the Regional Board's website, or through other means, for public review and comments. The Executive Officer shall consider all comments received prior to approval of the reports. Any unresolved significant issues shall be scheduled for a public hearing at a Regional Board meeting prior to approval by the Executive Officer.
2. The purpose of this Order is to require the implementation of best management practices to reduce, to the maximum extent practicable, the discharge of pollutants from the MS4 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.2 Discharge Limitations and Section IV. Receiving Water Limitations, through timely implementation of their DAMP and any modifications, revisions, or amendments developed pursuant to this order approved by the Executive Officer or determined by the permittee to be necessary to meet the requirements of 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.
3. The permittees shall, at a minimum, 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. In addition to those specific controls and actions required by (1) the terms of this Order and (2) the DAMP, each permittee shall implement additional controls, if any are necessary, to reduce the discharge of pollutants in storm water to the maximum extent practicable as required by this Order.

4. The permittees shall comply with Monitoring and Reporting Program No. R8-2002-0010, and any revisions thereto, which is hereby made a part of this order. The Executive Officer is authorized to revise the Monitoring and Reporting Program 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. R8-2002-0010.

5. By November 15, 2002, the permittees, in coordination with the Orange County Fire Chiefs Association, shall develop a list of appropriate BMPs to be implemented to reduce pollutants from training activities, fire hydrant/sprinkler testing or flushing, non-emergency fire fighting and any BMPs feasible for emergency fire fighting flows.

6. The permittees should consult the Orange County Vector Control District to ensure that structural treament systems are designed to minimize the potential for vector breeding.

7. 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.

8. 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. R8-2002-0010)

9. The 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 January 18, 2007 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;

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; and,

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;

   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; or,

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

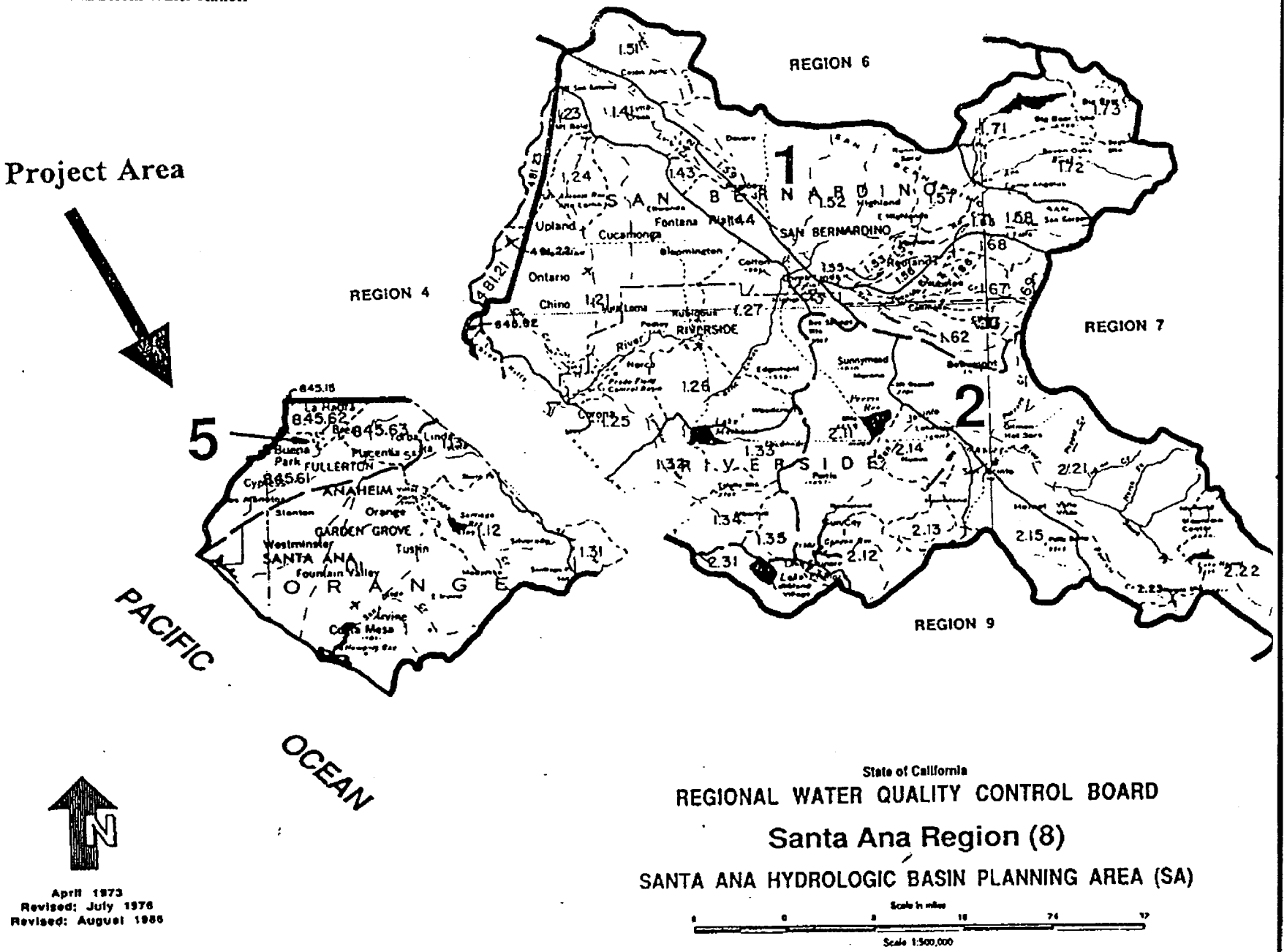
3. This order shall serve as a National Pollutant Discharge Elimination System (NPDES) Permit pursuant to Section 402 (p) of the Clean Water Act, or amendments thereto, and shall become effective ten days after the date of its adoption, provided the Regional Administrator of the U. S. EPA has no objections. 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.

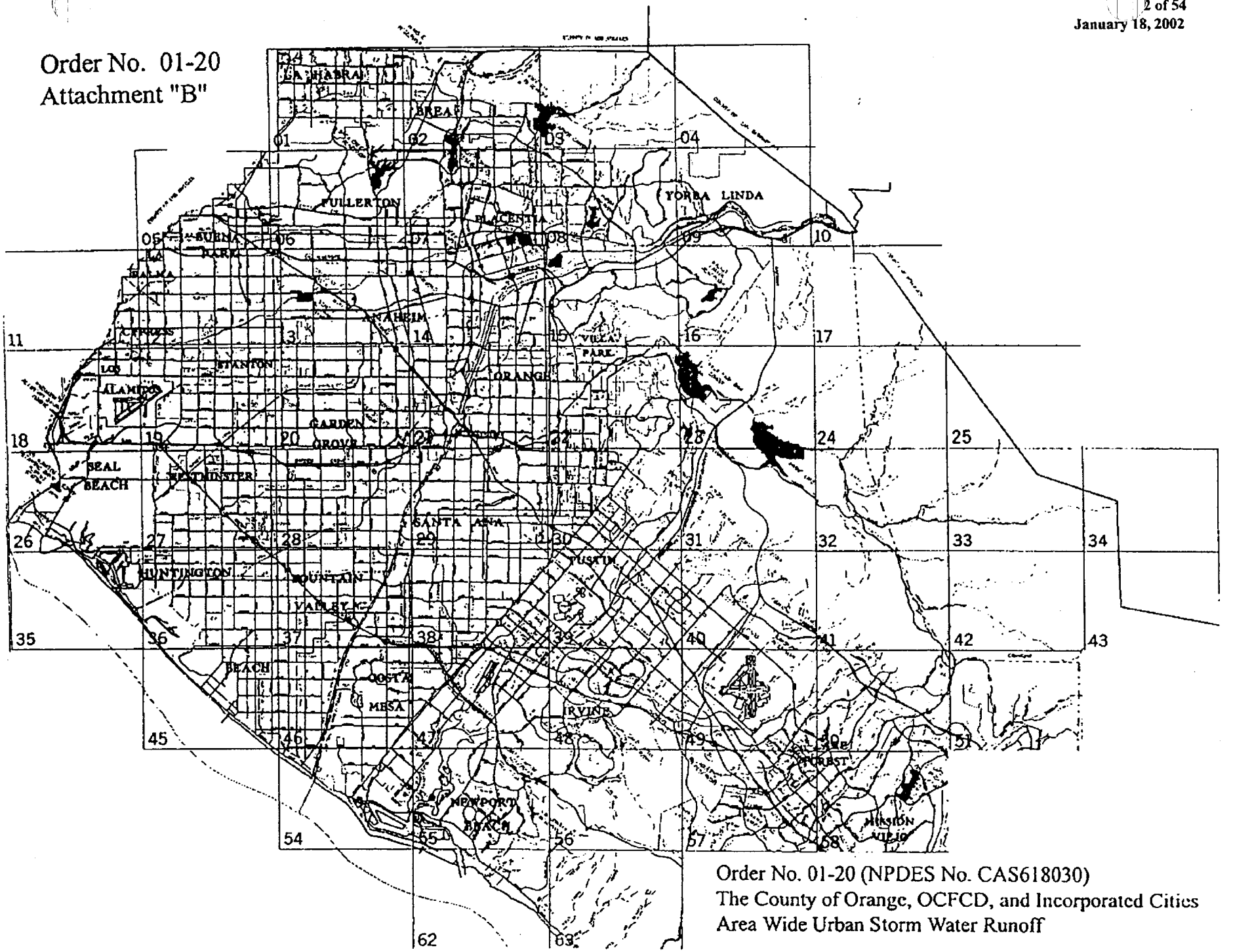
I, Gerard Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on January 18, 2002.

_____

Gerard J. Thibeault
Executive Officer


Project Area
REGION 6
REGION 4
REGION 7
REGION 9
1
2
5
SAN BERNARDINO
RIVERSIDE
ORANGE
SAN BERNARDINO
RIVERSIDE
Upland
Cucamonga
Fontana
Ontario
Chino
Corona
Sunnymead
Fullerton
Anaheim
Garden Grove
Santa Ana
Orange
Tustin
Westminster
Fountain Valley
Costa Mesa
PACIFIC
OCEAN
N
State of California
REGIONAL WATER QUALITY CONTROL BOARD
Santa Ana Region (8)
SANTA ANA HYDROLOGIC BASIN PLANNING AREA (SA)
Scale in miles
Scale 1:500,000
April 1973
Revised: July 1976
Revised: August 1986

Order No. 01-20
Attachment "B"



Order No. 01-20 (NPDES No. CAS618030)
The County of Orange, OCFCD, and Incorporated Cities
Area Wide Urban Storm Water Runoff

Order No. R8-2002-0010
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. R8-2002-0010
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 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 the 1999 monitoring program will be completed by July 1, 2003. The permittees also participate in the Regional Monitoring Program for San Diego Creek Nutrient TMDL and other regional monitoring programs, such as those conducted by 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 complete the 1999 Water Quality Monitoring Program.

2. The permittees shall revise, by July 1, 2003, their Water Quality Monitoring Program to include, at a minimum, the following monitoring components or their equivalence:

   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 2003.

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 exist 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 the 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 July 1, 2003, 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 and any requirements developed by the State Board in accordance with Water Code Section 13383.5:

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;

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

H. An assessment of the permittees compliance status with the Receiving Water Limitations, Section IV of the Order, including any proposed modifications to the DAMP if the Receiving Water Limitations are not fully achieved.

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.

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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	December 19, 2002	January 2, 2003
Establish Public Education Committee	March 1, 2002	Nov 15, 2002
Review DAMP	July 1, 2003	Nov 15, 2003
Develop public education materials including reporting hot-line and web site	July 1, 2002	Nov 15, 2002
Develop and update construction site, including site information, priority, and inspection information	October 1, 2002	Nov 15, 2003
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, 2003	Nov 15, 2003

Implementation Agreement Revision	July 1, 2002	Nov 15, 2002
Litter/Trash Control Ordinance review	July 1, 2003	Nov 15, 2003
Additional Debris Control Measures Determination	July 1, 2003	Nov 15, 2003
Complete Public Awareness Survey	July 1, 2002	Nov 15, 2002
Proposed Monitoring Program	July 1, 2003	July 1, 2003
Develop restaurant inspections program, which includes runoff, grease blockage 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
Develop and update a commercial site database, including facility information, priority, and inspection information	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
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
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
January 18, 2002

California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

FACT SHEET

January 18, 2002

ITEM: 2

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. R8-2002-0010 (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. R8-2002-0010 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 U.S. 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

[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.

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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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, etc.) 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.
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.
Radioactive isotopes	Atmospheric fallout, industrial and military activities	Few known effects on marine life; bioaccumulation may pose human health risks where contamination is heavy.

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

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.
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.
Alien species	Ships and ballast water, fishery stocking, aquarists	Displace native species, introduce new diseases; growing worldwide problem.

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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).

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 Table 2), 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 also 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, and 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

(This section intentionally left blank.)

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:

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[4] Maximum Extent Practicable (MEP) means to the maximum extent feasible, taking into account equitable 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.

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-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) Inspection Activities by the municipalities; (8) New development/re-development requirements; (9) Waste load allocations for nutrients, sediment, and fecal coliform bacteria; and, (10) 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 Minimis 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, 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 November 15, 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. MUNICIPAL INSPECTION PROGRAM

Inspections by the municipalities, of construction, industrial, and commercial activities within their jurisdiction will be conducted, in order to control the loading of pollutants entering the MS4 system. The municipalities will inventory companies and sites in the above categories; prioritize those companies and sites with respect to their potential for discharge of pollutants in runoff and their proximity to sensitive receiving waters; and perform regular inspections to insure compliance with local ordinances. While initial observations of non-compliance may result in 'educational' type enforcement, repeated non-compliance will result in more disciplinary forms of enforcement, such as, monetary penalties, stop work orders or permit revocation.

8. 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 combination 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 October 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).

9. SEPTIC SYSTEM FAILURES AND PORTABLE TOILET DISCHARGES

A number of beach closures in Orange County have been due to spills, overflows, and leaks from sanitary sewer lines. To address these concerns, a set of separate waste discharge requirements for local sanitary sewer agencies is being prepared by the Regional Board. Failing septic systems and improper use of portable toilets have also been linked to microbial contamination of urban runoff. The permittees shall identify, with the appropriate local agency, a mechanism to determine if failure of these septic systems are causing or contributing to urban storm water pollution problems in their jurisdictions. The permittees shall also review their local oversight program for the placement and maintenance of portable toilets to determine the need for any revision.

10. 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 (1999-2003).

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 July 1, 2003, the permittees are required to re-evaluate their Water Quality Monitoring Program and submit a revised plan for approval. The revised plan shall include the following monitoring elements: Mass Emissions, Estuary/Wetlands, Water Column Toxicity, Bacteriological/Pathogen, Bioassessment, Reconnaissance, Land Use Correlation, and TMDL/303(d) Listed Waterbodies.

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 were 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

[5] Los Angeles Times, May 9, 2001

reports required under the NPDES permits and Water Code Section 13267, budget and other program documentation; 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 opened a public hearing regarding the proposed waste discharge requirements on Wednesday, December 19, 2001 at 9:00 a.m. at the City Council Chambers, City of Santa Ana. The public hearing was continued on Friday, January 18, 2002 at 9:00 a.m. at the City Council Chambers, City of Santa Ana, at which time Order No. R8-2002-0010 was adopted.

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.

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 Mean