California Regional Water Quality Control Board
Santa Ana Region

June 13, 2014
Staff Report

ITEM: **9**

SUBJECT: Public Workshop, Renewal of Waste Discharge Requirements, Orange County Flood Control District, County of Orange and Incorporated Cities of Orange County, Area-wide Urban Storm Water Runoff Management Program, Order No. R8-2014-0002, NPDES Permit No. CAS618030

DISCUSSION:

This Public Workshop is to discuss and solicit comments on the draft Permit. See the attached Technical Report (Fact Sheet) and the draft Permit.

RECOMMENDATION:

This is an information item. The draft Permit may be revised based on comments received and the Board will be requested to adopt the draft permit at a later Board meeting.

COMMENT SOLICITATION:

Comments were solicited from persons shown in Table A below and other individuals and entities identified in the Regional Board's Basin Plan mailing list.

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Table A: List of Persons Solicited for Comments

AA Ready Mix LLC	Coastkeeper	Nolte Engineering
Abtech Industries	Coastline Metal Finishing	North Coast Water Quality Control Board
AEI-CASC	Conestoga-Rovers & Associates	Nossaman LLP
AES Corporation	Contech Engineering Solutions	Office of Senator Feinstein
Albert A. Webb Associates	Costa Mesa Sanitary District	Orange County Public Works
Alcoa	Daniel B. Stephens & Associates	Orange County Sanitation District
Allard Engineering	Dean Foods	Orange County Transportation Authority
Alta Environmental	Department of Fish and Wildlife	Orange County Vector Control District
Aluminum Precision Products	Department of the Navy	Orange County Water District
AMEC	Department of Transportation	Parsons Brinkerhoff
Anacal Engineering Co.	DigiMap Data Services Inc.	Pfeiler & Associates
Angelus Block Co. Inc.	Ecorp Consutling	PHB & Associates
Aquatic Bioassay & Consulting Laboratories Inc.	Edward S. Babcock & Sons	Physis Environmental Lab
ARCADIS US	Egoscue Law Group	Pillsbury Winthrop LLP
Ashwill Associates	El Toro Water District	Proactive Consulting Group
Associated Environmental Management	Elan Limited	Pure Effect
Beckman Coulter Inc.	Environ Corp.	RBF Consulting
Best, Best & Kreiger	Environ Inernational Corporation	Recupero Consulting Group LLC
Bettancourt & Associates	Environ Strategy Consultants Inc.	Revel Environmental Manufacturing Inc.
BlueScape Inc.	Environmental Engineering & Contracting Inc.	Richards Watson & Gershon
Boeing Corp.	Environmental Resources Management	Rick Engineering
Bois & Macdonald Law Firm	EORM	Risk Sciences Group Inc.
Bonterra Consulting	FPL and Associates Inc.	Riverside County Executive Office
Briscoe Ivester & Bazel LLP	Fuscoe Engineering, Inc.	Riverside County Resource Conservation District

Brookfield Homes	Garden Grove Unified School District	Riverside County Transportation & Land Management Agency
Building Industry Association of Southern California	Geo-Logic Associates	RMC Water and Environment
Burke, Williams & Sorensen, LLP	Geosnytec	RRM Design Group
C&S Companies	GHD	San Bernardino County
C&V Consulting Inc.	Golden State Water Company	San Bernardino Municipal Water District
California Association of Winegrape Grower	Haimann	San Diego Regional Water Quality Control Board
California Coastal Commission	HDR Inc.	Santa Ana Watershed Project Authority
California Department of Corrections and Rehabilitation	Huitt-Zollars Inc.	Santa Margarita Water District
California Steel Industries	Humphreys & Partners	SC Fuels
California Watershed Engineering Corp.	Hunsaker & Associates	Schick Moving & Storage
Canyon Consulting Inc.	HydroScience Engineers Inc.	Sempra Utilities
CDM Smith Inc.	IDS Group	Shannon & Wilson Inc.
Center for Biological Diversity	IMPCO Technologies	Shea Homes
Ceradyne Inc.	INET Airport Systems	Shepard Bros. Inc.
Charles Abbott Associates Inc.	Integrated Planning and Management Inc.	Smith Power
Chevron Corp.	Iris Environmental	Southern California Coastal Water Research Project
Chino Basin Watermaster	Irvine Ranch Water District	Southern California Edison
City of Aliso Viejo	iStar Financial	Southern California Erosion Control
City of Anaheim	ITT Cannon	Stantec Consutling Services
City of Brea	Jemal Public Affairs	State Water Resources Control Board
City of Buena Park	John Wayne Airport	Storm Water Resource
City of Corona	JR Filanc Construction Co. Inc.	Synagro
City of Cypress	JR Miller & Associates	Synchronous Aerospace Group
City of Fountain Valley	K. Hovnanian Homes	Tenera Environmental
City of Fullerton	KB Homes	TetraTech
City of Garden Grove	KCM Group Construction Management	The Irvine Company
City of Huntington Beach	Kiewit Corporation	The Shaw Group Inc.
City of Irvine	Kimberly-Clark Corp.	The Walt Disney Company
City of La Habra	Kimley-Horn and Assoc. Inc.	Thienes Engineering

City of La Palma	Kraft Foods	Thomas Graham Civil Design Group
City of Laguna Hills	Kreuzer Consulting Group	Timken Company
City of Laguna Woods	Laer Pearce & Associates	Townsend Public Affairs
City of Lake Forest	LaRoc Environmental	TRC Solutions
City of Montclair	Larry Walker Associates	Tri Alpha Energy
City of Moreno Valley	Latham & Watkins LLP	Triumph group
City of Newport Beach	Lennar Homes	University of California, Irvine
City of Orange	Los Angeles Times	Urban Furtures Inc.
City of Placentia	LSA Associates	URS Corp.
City of Pomona	Mam SoCal Inc.	US Army Corps of Engineers
City of Riverside	MDS Consulting	US Environmental Protection Agency
City of San Bernardino	Metropolitan Water District	US Fish and Wildlife Service
City of San Gabriel	Michael Brandman Associates	Vandermost Consulting Services Inc.
City of Santa Ana	MLM Engineering	Wayne Perry Inc.
City of Tustin	National Oilwell Varco	Western Strategies LLC
City of Villa Park	National Water Research Institute	Weston Solutions Inc.
City of Westminster	Natural Resources Defense Council	Wildermuth Environmental Inc.
City of Yorba Linda	NMG Geotechnical Inc.	Willdan Group Inc.
Civiltec Engineering	PACE	Woodruff, Spradlin & Smart
Cla-Val USA	Pacific Water Quality Association	Yorke Engineering
Coastal Watch	Pardee Homes	

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ORDER NO. R8-2014-0002
NPDES PERMIT NO. CAS 618030

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM ("NPDES") PERMIT AND WASTE DISCHARGE REQUIREMENTS

Orange County Flood Control District, the County of Orange
And
The Incorporated Cities therein within the Santa Ana Region

Area-wide Urban Runoff, Santa Ana Region

The following Co-permittees, listed in Table 1, are subject to waste discharge requirements as set forth in this Order (or Permit):

Table 1: List of Entities Subject to the Requirements of this Order

County of Orange	City of La Habra
Orange County Flood Control District	City of La Palma
City of Anaheim	City of Lake Forest
City of Brea	City of Los Alamitos
City of Buena Park	City of Newport Beach
City of Costa Mesa	City of Orange
City of Cypress	City of Placentia
City of Fountain Valley	City of Santa Ana
City of Fullerton	City of Seal Beach
City of Garden Grove	City of Stanton
City of Huntington Beach	City of Tustin
City of Irvine	City of Villa Park
City of Laguna Hills	City of Westminster
City of Laguna Woods	City of Yorba Linda

ADMINISTRATIVE INFORMATION

This Order was adopted by the Santa Ana Regional Water Quality Control Board ("Regional Board") on:	Month day, 2014
This Order shall become effective on:	Month day, 2014
This Order shall expire on:	Month day, 2019
The U.S. Environmental Protection Agency ("USEPA") and the Regional Board have classified this discharge as a "large municipal separate storm sewer system" ("MS4") pursuant to 40 CFR 122.26(b)(4).	

IT IS HEREBY ORDERED that the Co-permittees[1] subject to this Permit, in order to meet the provisions contained in division 7 of the California Water Code (commencing with section 13000) and the provisions of the federal Clean Water Act ("CWA") and regulations and guidelines adopted thereunder, shall comply with the requirements of this Permit.

I, Kurt V. Berchtold, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on MONTH DAY, 2014.

Kurt V. Berchtold
Executive Officer

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[1] This Order refers to all of the Co-permittees collectively as "Co-Permittees", including the Principal Permittee.

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Appendix A: Applicability of TMDL requirements to Co-permittees

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FINDINGS

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

A. JURISDICTION

1. **MS4 Ownership or Operation**. Each of the Co-permittees owns or operates a municipal separate storm sewer system ("MS4), through which it discharges storm water and non-storm water (collectively "urban runoff") into waters of the U.S. within the Santa Ana Region. These MS4s fall into one or more of the following categories: (1) a medium or large MS4 that services a population of greater than 100,000 or 250,000 respectively; or (2) a small MS4 that is "interrelated" to a medium or large MS4; or (3) an MS4 which contributes to a violation of a water quality standard; or (4) an MS4 which is a significant contributor of pollutants to waters of the U.S.

2. **Regulated Sources and Activities**. This Order regulates the discharge of pollutants from anthropogenic sources in urban runoff from MS4s or activities within the jurisdiction and control of the Co-permittees. Except as noted in Finding 8 below, this Order authorizes discharges of urban runoff from MS4s subject to the conditions and provisions herein. This Order is not intended to obligate the Co-permittees to address background or naturally-occurring pollutants or flows in receiving waters.

3. **Legal and Regulatory Authority**. This Order is issued pursuant to section 402 of the federal Clean Water Act ("CWA") and implementing regulations (Code of Federal Regulations [CFR] Title 40, Part 122 [40 CFR 122]) adopted by the United States Environmental Protection Agency ("USEPA"), and chapter 5.5, division 7 of the California Water Code ("CWC") (commencing with section13370). This Order serves as a National Pollutant Discharge Elimination System ("NPDES") permit for discharges of urban runoff from MS4s to waters of the U.S. This Order also serves as waste discharge requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260). The Regional Board has the legal authority to issue a system-wide MS4 permit pursuant to its authority under CWA section 402(p)(3)(B) and 40 CFR122.26(a)(1)(v). The USEPA has established that the permitting authority, in this case the Regional Board, has the flexibility to establish system- or region-wide permits affecting multiple Co-permittees (40 CFR122.26(a)(3)(ii)). The system-wide nature of this Order will ensure consistency of regulation within watersheds and is expected to result in overall cost savings for the Co-permittees and Regional Board. The federal regulations make it clear that the Co-permittees need only comply with permit conditions relating to discharges from the MS4s for which they are operators (40 CFR 122.26(a)(3)(vi)). This Order does not require the Co-permittees to manage storm water outside of their jurisdictional boundaries, but rather to work

collectively to improve storm water management within watersheds.

4. **CWA NPDES Permit Conditions**. Pursuant to CWA section 402(p)(3)(B), NPDES permits for storm water discharges from MS4s must include requirements to effectively prohibit non-storm water discharges into MS4s; require controls to reduce the discharge of pollutants to the maximum extent practicable ("MEP"); and to require other provisions as the Regional Board determines are appropriate to control such pollutants. This Order prescribes conditions to comply with the CWA requirements for owners and operators of MS4s to effectively prohibit non-storm water discharges into the MS4s. This Order requires controls to reduce the discharge of pollutants in urban runoff from the MS4s to the MEP. This Order also includes other provisions that the Regional Board has determined are appropriate to control pollutants.

5. **CWA and CWC Monitoring Requirements**. CWA section 308(a) and 40 CFR122.41(h),(j)-(l) and 122.48 require that NPDES permits specify monitoring and reporting requirements. Federal regulations applicable to large and medium MS4s also specify additional monitoring and reporting requirements in 40 CFR122.26(d)(1)(iv)(D), 122.26(d)(1)(v)(B), 122.26(d)(2)(i)(F), 122.26(d)(2)(iii)(D),122.26(d)(2)(iv)(B)(2) and 122.42(c). CWC section 13383 authorizes the Regional Board to establish monitoring, inspection, entry, reporting and recordkeeping requirements. This Order establishes monitoring and reporting requirements to implement federal and State requirements.

6. **Total Maximum Daily Loads**. CWA section 303(d)(1)(A) requires that each state "shall identify those waters within its boundaries for which the effluent limitations…are not stringent enough to implement any water quality standard applicable to such waters." The CWA also requires states to establish a priority ranking of impaired water bodies known as Water Quality Limited Segments and to establish Total Maximum Daily Loads ("TMDLs") for such waters. This priority list of impaired water bodies is called the Clean Water Act Section 303(d) List of Water Quality Limited Segments, commonly referred to as the "303(d) List". The CWA requires the 303(d) List to be updated every two years.

   TMDLs are numerical calculations of the maximum amount of a pollutant that a water body can assimilate and still meet water quality standards. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point sources (waste load allocations or "WLAs") and non-point sources (load allocations or "LAs"), background contribution, plus a margin of safety. Discharges from MS4s are point source discharges.

   The federal regulations (40 CFR 22.44(d)(1)(vii)(B)) require that NPDES permits incorporate water quality based effluent limitations ("WQBELs") developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, consistent with the assumptions and requirements of any available WLA forthe discharge. This Order implements TMDLs that have been adopted by the Regional Board and approved by USEPA as of the time this Order is issued. This

Order also implements TMDLs that have been promulgated by the USEPA. This Order establishes WQBELs consistent with the assumptions and requirements of TMDL implementation requirements and WLAs assigned to discharges from the Permittees' MS4s.

7. **Permit Modification.** In accordance with 40 CFR122.41(f), this Order may be modified, revoked or reissued prior to its expiration date for cause. This includes 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 state-wide 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;
    d. Or to incorporate any requirements imposed upon the Co-permittees through the TMDL process.

8. **Non-Storm Water and Storm Water Discharges**. The discharge of pollutants from the MS4 is subject to the MEP standard and other provisions necessary to reduce pollutants whether the pollutants are transported by storm water or non-storm water. This Order requires each Co- Permittee to effectively prohibit discharges of non-storm water into its MS4 unless such discharges are authorized by an NPDES permit. Certain non-storm water discharges may be permitted under various NPDES permits adopted by the Regional Board and the State Water Resources Control Board. These permits include NPDES Permit No. CAG998001 (commonly known as the "*De Minimus*" Permit); NPDES Permit No. CAG990002, Discharges from Utility Vaults and Underground Structures to Surface Waters; and NPDES Permit No. CAG918002, for discharges to surface waters of certain groundwater at sites within the San Diego Creek/Newport Bay watersheds. Non-storm water discharges permitted under these and other NPDES permits do not need to be prohibited by the Co- Permittees.

   This Order authorizes the discharge of urban runoff from the Co-permittees' MS4s. This authorization includes authorization for certain non-storm water discharges. Authorized non-storm water discharges are subject to both the requirements herein and the requirements of the *"De Minimus"* Permit. This Order does not authorize the Co-permittees' non-storm water discharges that are subject to NPDES Permit No. CAG918002. Authorization for such discharges must be obtained through the process described in NPDES Permit No. CAG918002.

   Monitoring conducted by the Permittees, as well as the 303(d) List, have identified dry weather, non-storm water discharges from the MS4s as a source of pollutants

causing or contributing to receiving water quality impairments in the Santa Ana Region. The federal regulations (40 CFR 122.26(d)(2)(iv)(B)(1)) require Co-permittees to have a program to prevent illicit discharges to the MS4. The federal regulations, however, allow specific categories of unpermitted non-storm water discharges or flows to be regarded as illicit discharges only where such discharges are identified as sources of pollutants to waters of the U.S. Such un-permitted non-storm water discharges are listed in this Order in Section III. However, this list of discharges is subject to modification during the term of this Order.

9. **Limits of Co-permittees' Jurisdiction over Urban Runoff.** The Co-permittees may lack jurisdiction, or that jurisdiction may be limited, over urban runoff into their MS4s from some state and federal facilities, Native American tribal lands, utilities, special districts, and other entities. The Regional Board recognizes that the Co-permittees can only be held responsible for discharges of pollutants from such entities to the extent that the Co-permittees have the authority to eliminate or control the pollutants. Recognizing these limitations, the Co-permittees are expected to control pollutants in discharges into their MS4s from such entities to the MEP.

10. **In-Stream Treatment Control Systems**. Pursuant to federal regulations (40CFR 131.10(a)), in no case shall a state adopt waste transport or waste assimilation as a designated use for any waters of the U.S. Authorizing the construction of a structural treatment control BMP within a water of the U.S., or using the water body itself as a structural treatment control BMP or for conveyance to such a facility, would be tantamount to accepting waste assimilation as an appropriate use for that water body. Waters of the U.S. must not be converted into structural treatment control best management practices ("BMPs", a.k.a. storm water control measures or "SMCs"). Construction, operation, and maintenance of a structural treatment control facility in a water body can negatively impact the physical, chemical, and biological integrity, as well as the beneficial uses, of the water body.

B. DISCHARGE CHARACTERISTICS AND RUNOFF MANAGEMENT

11. **Potential Beneficial Use Impairment**. The discharge of pollutants from MS4s may cause or threaten to cause the concentration of pollutants in receiving waters to exceed applicable water quality objectives. Discharges from MS4s may result in alterations to the hydrology of receiving waters that negatively impact their physical integrity. These conditions may impair or threaten to impair designated beneficial uses resulting in a condition of pollution, contamination, or nuisance.

12. **Pollutants Generated by Land Development**. Land development has created, and continues to create, new sources of non-storm water discharges and pollutants in storm water discharges as human population density increases. This brings higher levels of car emissions, car maintenance wastes, municipal sewage,

pesticides, household hazardous wastes, pet wastes, and trash. Development typically converts natural ground cover to impervious surfaces such as paved highways, streets, rooftops, and parking lots. Pollutants deposited on these surfaces are dumped or washed off the by non-storm water or storm water flows into and from the MS4s. As a result of the increased imperviousness in urban areas, less rain water can infiltrate through and flow over vegetated soil where physical, chemical, and biological processes can remove pollutants. Therefore, runoff leaving a developed area can contain greater pollutant loads and have significantly greater runoff volume, velocity, and peak flow rate than pre-development runoff conditions from the same area. Certain best management practices can minimize these impacts to water quality.

13. **Runoff Discharges to Receiving Waters**. The MS4s discharge runoff into lakes, reservoirs, rivers, streams, creeks, bays, estuaries, coastal lagoons, the Pacific Ocean, and tributaries thereto within the Santa Ana Region. Development generally makes use of natural drainage patterns and features to convey runoff. Rivers, streams and creeks in developed areas used in this manner and under the ownership and control of the Permittees are part of MS4s regardless of whether they are natural, anthropogenic, or partially-modified features. In these cases, the rivers, streams and creeks in the developed areas of the Permittees' jurisdictions are both an MS4 and receiving water.

14. **Pollutants in Urban Runoff**. The most common pollutants in urban runoff include total suspended solids, sediment, pathogens (e.g., bacteria, viruses, protozoa), heavy metals (e.g., cadmium, copper, lead, and zinc), petroleum products and polynuclear aromatic hydrocarbons, synthetic organics (e.g., pesticides, herbicides, and PCBs), nutrients (e.g., nitrogen and phosphorus), oxygen-demanding substances (e.g., decaying vegetation, animal waste), detergents, and trash. Pollutants in urban runoff are typically generated by persons or activities over which the Co-permittees have the authority to enact measures to control those pollutants. The Regional Board recognizes that the Co-permittees' authority is not equal for all persons or activities in their jurisdictions. The limits of the Co-permittees' authority over some persons, such as school districts, are not clear. Nonetheless, the Co-permittees are required to exercise their authority consistent with the requirements of the Clean Water Act and this Order.

15. **Human Health and Aquatic Life Impairment**. Pollutants in runoff discharged from the MS4s risk adversely affecting human health and aquatic organisms. Adverse human health effects include gastrointestinal diseases and infections. Adverse physiological responses to pollutants in runoff include impaired reproduction, growth anomalies and mortality in aquatic organisms. These responses may be the result of different mechanisms, including bioaccumulation of toxicants. During bioaccumulation, toxicants carry up the food chain and may affect both aquatic and non-aquatic organisms, including human health. Increased volume, velocity, rate, and duration of storm water runoff greatly accelerate the erosion of downstream natural channels. This alters stream channels and habitats and can adversely affect aquatic and terrestrial organisms.

16. **Best Management Practices**. Wastes which are deposited and accumulate in MS4 drainage structures will be discharged from these structures to waters of the U.S. unless they are removed. These discharges may cause or contribute to, or threaten to cause or contribute to, a condition of pollution in receiving waters. For this reason, pollutants in storm water discharges from the MS4s can be and must be effectively reduced in runoff by the application of a combination of pollution prevention, source control, and treatment control BMPs. Pollution prevention BMPs are practices that prevent or reduce the generation of potential pollutants, typically at their source. Pollution prevention is the "first line of defense". Source control BMPs (both structural and non-structural) eliminate or minimize the contact between potential pollutants and urban runoff, therefore preventing the transport of pollutants to receiving waters. Treatment control BMPs remove pollutants that have entered into urban runoff.

    Certain structural treatment control BMPs, such as constructed wetlands, are orwill be waters of the state, and may support beneficial uses. The operation and maintenance of these BMPs may impact the beneficial uses of those waters. Section III of this Order contains Provisions to minimize impacts to those beneficial uses as the result of operating and maintaining structural treatment control BMPs. However, it is not the intent of the Regional Board to regulate discharges *within* structural treatment control BMPs in a way that is counterproductive to their purpose of satisfying the MEP standard or to interfere with efforts to comply with the requirements of this Order.

17. **BMP Implementation**. To reduce the discharge of storm water pollutants, to effectively prohibit non-storm water discharges, and to protect receiving waters, the water quality impacts of development need to be addressed during the three major phases of planning, construction, and use. Development which is not guided by water quality planning policies and principles can result in increased pollutant load discharges, flow rates, and flow durations which can negatively affect receiving water beneficial uses. Construction sites without adequate BMP implementation may result in sediment or runoff rates which greatly exceed natural erosion rates of undisturbed lands, causing siltation and potentially impairing the beneficial uses receiving waters. In addition, existing development can generate substantial pollutant loads which are discharged in runoff to receiving waters. Retrofitting areas of existing development with storm water pollutant control and hydro-modification management BMPs is necessary to address discharges of urban runoff that may cause or contribute to a condition of pollution or a violation of water quality standards.

18. **Water Quality Improvements**. Since 1990, the Permittees have been developing and implementing programs and BMPs intended to effectively prohibit non-storm water discharges to the MS4s and control pollutants in storm water discharges from the MS4s. As a result, beach closures have been significantly reduced, public awareness of water quality issues has increased, and several water body / pollutant combinations are being considered for removal from the CWA Section

303(d) List. The Permittees have been able to achieve improvements in water quality in some respects, but significant improvements to the quality of receiving waters and discharges from the MS4s are still necessary to meet the requirements and objectives of the CWA.

19. **Long Term Planning and Implementation**. Federal regulations require municipal storm water permits to expire 5 years from adoption, after which the permit must be renewed and reissued. The Regional Board recognizes that water quality degradation and impacts to beneficial uses in the Santa Ana Region occurred over several decades and will not be undone easily. The Regional Board subsequently recognizes that a decade or more may pass before water quality objectives are consistently achieved in the Santa Ana Region.

20. "**Iterative Process"**. This Order is based on an iterative approach that, in summary, is comprised of planning, implementing, evaluating, and improving BMPs carried out as part of the Co- Permittees' storm water programs. Multiple iterations will occur during this permit term, and are likely to occur over multiple permit terms, to achieve water quality objectives. To fully affect the "iterative process", this Order includes prescriptive requirements for conducting program effectiveness assessments ("PEAs"). PEAs are a necessary component of the "iterative process". As part of the performance of PEAs, Co-permittees must compare the outcomes of program activities to the objective requirements of this Order and to objective performance standards developed by the Permittees. The purposes of conducting PEAs include:

    a. assessing compliance with the requirements of this Order;
    b. tracking progress towards meeting water quality objectives;
    c. justifying the Permittees' commitment of resources, including the cessation of ineffective management practices;
    d. providing feedback to Permittees' program managers, in part, to identify the "best" or most effective management practices undertaken; and
    e. assessing reductions in pollutant loads to receiving waters and any relationship to management practices.

    It is not the intent of the Regional Board that objective performance standards that are developed exclusively by the Permittees as part of PEAs, be used as the basis for enforcement action against any of the Permittees for failure to satisfy those standards. The intent of the Regional Board is that the Permittees constructively use those standards, and the related monitoring, to iteratively improve the performance of their storm water programs in a timely way to remove pollutants in urban runoff to the maximum extent practicable. Permittees are also required to periodically evaluate the validity of their performance standards and methods of measurement and make modifications accordingly.

C. WATER QUALITY STANDARDS

21. **Basin Plan**. The Regional Board adopted the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) on January 24, 1995 that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for receiving waters addressed through the plan. Subsequent revisions to the Basin Plan have also been adopted by the Regional Board and approved by the State Water Board, the Office of Administrative Law, and where appropriate, the USEPA. The requirements of this Order implement the Basin Plan.

    The Basin Plan identifies the following existing and potential beneficial uses for surface waters in the Santa Ana Region: Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Process Supply (PROC); Industrial Service Supply (IND); Ground Water Recharge (GWR); Navigation (NAV); Hydropower Generation (POW); Water Contact Recreation (REC1); Non-contact Recreation (REC2); Commercial and Sport Fishing (COMM); Warm Freshwater Habitat (WARM); Limited Warm Freshwater Habitats (LWRM); Cold Freshwater Habitat (COLD); Preservation of Biological Habitats of Special Significance (BIOL); Wildlife Habitat (WILD); Rare, Threatened, or Endangered Species (RARE); Spawning, Reproduction, and Development (SPWN); Marine Habitat (MAR); Shellfish Harvesting (SHELL); and Estuarine Habitat (EST).

22. **Ocean Plan**. The State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, 2005, and 2009. The State Water Board adopted the latest amendment on October 16, 2012 and it became effective on August 19, 2013. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The requirements of this Order implement the Ocean Plan. The Ocean Plan identifies the following beneficial uses of ocean waters of the state to be protected: Industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance; rare and endangered species; marine habitat; fish spawning and shellfish harvesting.

23. **Sediment Quality Control Plan**. On September 16, 2008, the State Water Board adopted the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality (Sediment Quality Control Plan). The Sediment Quality Control Plan became effective on August 25, 2009. The Sediment Quality Control Plan establishes: 1) narrative sediment quality objectives for benthic community protection from exposure to contaminants in sediment and to protect human health, and 2) a program of implementation using a multiple lines of evidence approach to interpret the narrative sediment quality objectives. Requirements of this Order implement the Sediment Quality Control Plan.

24. **National Toxics Rule and California Toxics Rule**. USEPA adopted the National

Toxics Rule (NTR) on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the California Toxics Rule (CTR). The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. The CTR and NTR contain water quality criteria for priority pollutants in discharges to surface water. However, the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* states that the Policy does not apply to regulation of storm water discharges. The Regional Board believes that compliance with Water Quality Standards through implementation of BMPs is appropriate for regulating urban runoff. The USEPA articulated this position on the use of BMPs in storm water permits in the policy memorandum entitled, ''Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits'' (61 FR 43761, August 9, 1996). The USEPA also has articulated this position with respect to implementing TMDLs in their policy memorandum entitled "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on those WLAs", November 22, 2002.

25. **Anti-degradation Policy**. Federal anti-degradation policy is applicable to all NPDES permits. 40 CFR 131.12 requires that State water quality standards include an anti-degradation policy consistent with the federal policy. The State Water Resources Control Board established California's anti-degradation policy in State Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal anti-degradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Santa Ana Water Board's Basin Plan implements, and incorporates by reference, both the State and federal anti-degradation policies. This Order requires the Co-permittees to implement programs and policies necessary to improve water quality; the Order does not allow any degradation of water quality. Therefore, this Order is consistent with the anti-degradation provisions of 40 CFR 131.12 and State Board Resolution No. 68-16.

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

D. CONSIDERATIONS UNDER FEDERAL AND STATE LAW

27. **Coastal Zone Act Reauthorization Amendments**. Section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) 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 source pollution: agriculture, silviculture, urban, marinas, and hydro-modification. This Order addresses the management measures required by CZARA for the urban category, with the exception of septic systems. The programs developed pursuant to this Order fulfill the need for coastal cities to develop a runoff non-point source plan identified in the Non-Point Source Program Strategy and Implementation Plan. The Regional Board addresses septic systems through the administration of other programs.

28. **Endangered Species Act**. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 USC sections 1531 to 1544). This Order requires compliance with receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Permittees are responsible for meeting all requirements of the applicable Endangered Species Act.

29. **Report of Waste Discharge Process**. The waste discharge requirements set forth in this Order are based upon the Report of Waste Discharge submitted by the Orange County Permittees prior to the expiration of Order No. R8-2009-0030 (NPDES No. CAS618030). The federal regulations (40 CFR 122.21(d)(2)) and CWC section 13376 impose a duty on the Permittees to reapply for continued coverage through submittal of a Report of Waste Discharge no later than 180 days prior to expiration of a currently effective permit. This requirement is set forth in Provision XXIII.1. of Order No. R8-2009-0030. Order No. R8-2009-0030 (NPDES No. CAS618030) expires on May 22, 2014. Once adopted and in effect, this Order supersedes Order No. R8-2009-0030, except for purposes of enforcement, and is subject to any necessary revisions to its requirements made after the Regional Board considers the Report of Waste Discharge through the public process provided in 40 CFR Part 124.

30. **Integrated Report and Clean Water Act Section 303(d) List**. The Santa Ana Regional Water Quality Control Board and the State Water Resources Control Board submit an Integrated Report to USEPA to comply with the reporting requirements of CWA sections 303(d), 305(b) and 314, which lists the attainment status of water quality standards for water bodies in the Santa Ana Region. USEPA issued its Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act on July 29, 2005, which advocates the use of a five-category approach for classifying the attainment status of water quality standards for water bodies in the Integrated Report. Water bodies included in Category 5 in the Integrated Report indicate at least one beneficial use is not being supported or is threatened, and a TMDL is required. Water bodies included in Category 5 in the Integrated Report are placed on the 303(d) List. The most recent 303(d) List was issued in 2010.

Surface water bodies may be included in Category 4 of the Integrated Report if a TMDL has been adopted and approved by the USEPA for all identified pollutants or impairments (Category 4a); if other pollution control requirements required by a local, state or federal authority are stringent enough to implement applicable water quality standards within a reasonable period of time (Category 4b); or, if the failure to meet an applicable water quality standard is not caused by a pollutant, but caused by other types of pollution (Category 4c). According to the 2010 Integrated Report, no water bodies in the Santa Ana Region are identified in Category 4.

Information acquired as part of implementing this Order may be used by the Regional Board to include surface waters impaired by discharges from the Permittees' MS4s in Category 4 in the Integrated Report. The inclusion of those waters will allow for their consideration during the next 303(d) List submittal by the State to USEPA.

31. **Economic Considerations**. The California Supreme Court has ruled that, although CWC section 13263 requires the State and Regional Water Boards (collectively Water Boards) to consider factors set forth in CWC section 13241 when issuing an NPDES permit, the Water Board may not consider the factors to justify imposing pollutant restrictions that are less stringent than the applicable federal regulations require. (City of Burbank v. State Water Resources Control Bd. (2005) 35 Cal.4th 613, 618, 626-627.) However, when pollutant restrictions in an NPDES permit are more stringent than federal law requires, CWC section 13263 requires that the Water Boards consider the factors described in CWC section 13241 as they apply to those specific restrictions.

    As noted in the following finding, the Regional Board finds that the requirements in this Order are not more stringent than the minimum federal requirements. The minimum federal requirements include the effective prohibition on the discharge of non-storm water into the MS4, for controls to reduce the discharge of pollutants in storm water to the MEP, and other provisions that the Regional Board has determined appropriate to control such pollutants. The minimum federal requirements also include requirements for limitations consistent with any applicable waste load allocation. Therefore, considerations pursuant to CWC section 13241 are not required. Notwithstanding the above, the Regional Board has taken into account economic considerations pertaining to the requirements in this Order. The economic consideration is described in the accompanying Technical Report.

32. **Unfunded Mandates**. This Order does not constitute an unfunded local government mandate subject to subvention under Article XIIIB, Section (6) of the California Constitution for several reasons, including, but not limited to, the following:

    a. This Order implements federally mandated requirements under CWA section

402 (33 USC section 1342(p)(3)(B)).

b. The local agency Permittees' obligations under this Order are similar to, and in many respects less stringent than, the obligations of non-governmental and new dischargers who are issued NPDES permits for storm water and non-storm water discharges.
c. The local agency Permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order.
d. The Permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in CWA section 301(a) (33 USC section 1311(a)) and in lieu of numeric restrictions on their MS4 discharges (i.e. effluent limitations).
e. The local agencies' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under State law predates the enactment of Article XIIIB, Section (6) of the California Constitution.
f. The provisions of this Order to implement TMDLs are federal mandates. The CWA requires TMDLs to be developed for water bodies that do not meet federal water quality standards (33 USC section 1313(d)). Once the USEPA or a state develops a TMDL, federal law requires that permits must contain water quality based effluent limitations consistent with the assumptions and requirements of any applicable waste load allocation (40CFR 122.44(d)(1)(vii)(B)).

33. **California Environmental Quality Act**. The issuance of this NPDES permit for the discharge of runoff from MS4s to waters of the U.S. is exempt from the requirement for preparation of environmental documents under the California Environmental Quality Act (CEQA) (Public Resources Code, Division 13, Chapter 3, section 21000 et seq.) in accordance with CWC section 13389.

E. STATE WATER RESOURCES CONTROL BOARD DECISIONS

34. **Compliance with Prohibitions and Limitations**. The receiving water limitation language specified in this Order is consistent with language recommended by the USEPA and established in State Water Board Order WQ 99-05 (amending WQ 98-01), Own Motion Review of the Petition of Environmental Health Coalition to Review Waste Discharge Requirements Order No. 96-03, NPDES Permit No. CAS0108740, adopted by the State Water Board on June 17, 1999. The receiving water limitation language in this Order requires storm water discharges from MS4s to comply with receiving water quality standards, through an "iterative approach". This requires the Co-permittees to implement a process of increasingly effective BMPs over time and that the process include objective performance standards to evaluate effectiveness. The "iterative approach" is necessary to ensure that storm water discharges from the MS4 will not ultimately cause or contribute to violations of water quality standards and will not create conditions of pollution, contamination, or nuisance.

35. **Special Conditions for Areas of Special Biological Significance**. On March20, 2012, the State Water Board approved Resolution No. 2012-0012 approving an exception to the Ocean Plan prohibition against discharges to Areas of Special Biological Significance ("ASBS") for certain nonpoint source discharges and NPDES permitted municipal storm water discharges. State Water Board Resolution No. 2012-0012 requires monitoring and testing of marine aquatic life and water quality in several ASBS to protect California's coastline during storms when rain water overflows into coastal waters. Specific terms, prohibitions, and special conditions were adopted to provide special protections for marine aquatic life and natural water quality in ASBS. The Special Protections contained in Attachment B to Resolution No. 2012-2012, applicable to discharges to ASBS', are hereby incorporated into this Order as if fully set forth herein (See Provision IV.D.).

F. ADMINISTRATIVE FINDINGS

38. **Executive Officer Delegation of Authority**. The Regional Board by prior resolution has delegated all matters that may legally be delegated to its Executive Officer to act on its behalf pursuant to CWC section 13223. Therefore, the Executive Officer is authorized to act on the Regional Board's behalf on any matter within this Order unless such delegation is unlawful under CWC section 13223 or this Order explicitly states otherwise.

39. **Standard Provisions**. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in this Order.

40. **Fact Sheet/Technical Report**. The Technical Report for this Order contains background information, regulatory and legal citations, references and additional explanatory information and data in support of the requirements of this Order. The Technical Report serves as a fact sheet described in Parts 124.8 and 124.56 of the Code of Federal Regulations. The Technical Report is hereby incorporated into this Order and constitutes part of the Findings of this Order.

41. **Public Notice**. In accordance with State and federal laws and regulations, the Regional Board notified the Co-permittees, and interested agencies and persons of its intent to prescribe waste discharge requirements for the control of discharges into and from the MS4s to waters of the U.S. and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Technical Report.

42. **Public Hearing**. The Regional Board held a public hearing on MONTH(S), DATE(S) 2014, and heard and considered all comments pertaining to the terms and conditions of this Order. Details of the public hearing are provided in the Technical Report.

43. **Effective Date**. This Order serves as an NPDES permit pursuant to CWA section 402 or amendments thereto, and becomes effective fifty (50) days after the date of its adoption, provided that the Regional Administrator, USEPA, Region IX, does not object to this Order.

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

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

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PERMIT REQUIREMENTS

IT IS HEREBY ORDERED that the Co-permittees[2], 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, must comply with the following:

I. GENERAL RESPONSIBILITIES OF THE CO-PERMITTEES

A. The Co-permittees (inclusive of the Principal Permittee), shall be responsible for the management of storm drain systems within their jurisdictions and, to carry out the requirements of this Order, must:
   1. Accurately document and effectively implement best management practices, including programs, policies, and procedures, within each of their respective jurisdictions.
   2. Develop and apply objective performance measures to track and assess the effectiveness of individual best management practices or systems of best management practices and execute timely program improvements necessary to improve the effectiveness of those practices.
   3. Annually evaluate the validity of performance measures and the methods used to measure achievement of performance measures.
   4. Participate with one another in the development of necessary programs, plans, procedures, strategies, and reports that are of mutual interest.
   5. Coordinate the relevant plans, policies, procedures, and standards of their internal agencies, departments, and divisions.
   6. Develop and execute necessary interagency agreements.
   7. Establish and maintain adequate legal authority, as required by the Federal Storm Water Regulations.
   8. Maintain records and submit reports that are adequate to determine compliance with the requirements of this Order.
   9. Monitor and report the progress of any plans, projects, and programs implemented to control the discharge of pollutants in urban runoff to their MS4s. Reports must include comparisons of outcomes to objectives, performance measures, or milestones prescribed by this Order or developed by the Co-permittees.

II. GENERAL RESPONSIBILITIES OF THE PRINCIPAL PERMITTEE

A. In addition to the General Responsibilities in Section I above, the Principal Permittee (County of Orange) is responsible for the overall management of the storm water program and, to carry out the requirements of this Order, must:

[2] As described in the Glossary of this Order, the term "Co-permittees" includes the Principal Permittee.

1. Coordinate the planning and execution of necessary common programs, plans, policies, procedures, and strategies among the Co-permittees.
2. Monitor and report the progress of any plans, projects, and programs of mutual interest to the Co-permittees.
3. Conduct chemical and biological water quality monitoring; and conduct any additional monitoring as directed by the Executive Officer and authorized by this Order.
4. Coordinate the preparation of written reports, programs, plans, and procedures, including the Annual Progress Report, and their submittal to the Executive Officer.

III. DISCHARGE PROHIBITIONS AND LIMITATIONS

A. Prohibitions

1. In accordance with the requirements of 40 CFR § 122.26(d)(2)(i)(B) and (F), the Co-permittees must effectively prohibit illicit/illegal discharges from entering into the municipal separate storm sewer system ("MS4") unless such discharges are authorized by an NPDES permit.
2. The non-storm water discharges in Table 2 below do not need to be prohibited by the Co-permittees unless such discharges are identified by the Co-permittee(s) or the Executive Officer as a significant source of pollutants.
3. Except for those discharges described in Table 2 below, non-storm water discharges from Co-permittees' activities into waters of the U.S. are prohibited unless the discharge is authorized under an NPDES Permit.
4. With the recommendation of the Co-permittees or based on Substantial Evidence, the Executive Officer is authorized to add other types of discharges to Table 2 below, by way of written notice to the Co-permittees and after providing a minimum of 30 days for public comment.
5. Discharges of urban runoff from MS4s owned or operated by the Co-Permittees must be in compliance with the discharge prohibitions contained in Chapter 5 of the Basin Plan.
6. Unless otherwise authorized by this Order, discharges of urban runoff into waters of the U.S. from MS4s owned or operated by the Co-permittees which cause or contribute, or which threaten to cause or contribute to a condition of pollution, contamination, or nuisance (see CWC Section 13050) are prohibited.
7. The discharge to waters of the U.S. of any substance(s) in concentrations that are toxic to animal or plant life is prohibited.
8. The discharge to waters of the U.S. of any radiological, chemical, or biological warfare agent, or high-level radiological waste, is prohibited.

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Table 2: Types of non-storm water discharges presumed to not be a significant source of pollutants

Air conditioning condensate
Irrigation water
Passive foundation or footing drains
Water from crawl space pumps
Individual residential car washing and charity car washing events conducted by non-profit 501(c)organizations
De-chlorinated water from swimming pools (except cleaning wastewater and filter backwash)
Diverted stream flow
Rising ground water and natural springs
Ground water infiltration (as defined in 40 CFR § 35.2005(20)
Uncontaminated pumped groundwater
Flow from riparian habitats and wetlands
Temporary non-storm water discharges authorized by USEPA pursuant to Sections 104(a) or 104(b) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA")[3]
Emergency firefighting flows necessary for the protection of life and property
Water not otherwise containing "waste", as defined in CWC Section 13050(d)

B. Limitations

1. The Co-permittees must implement an effective public education and outreach program for the purpose of reducing the volume of the anthropogenic non-storm water discharges included in Table 2 to the MS4s.
2. Each Co-permittee must implement an effective water conservation program to minimize irrigation runoff from facilities that they own or control.
3. Non-storm water discharges occurring outside of the Newport Bay watershed from Co-permittee-owned or operated facilities or Co-permittee activities must be in compliance with the conditions and provisions of the General "*De Minimus*" Permit for Discharges to Surface Waters, Order No. R8-2009-

[3] These discharges must comply with water quality standards as applicable or relevant and appropriate requirements ("ARARs") under Section 121(d)(2) of CERCLA; or must be subject to either a written waiver of ARARs by USEPA pursuant to Section 121(d)(4) of CERCLA, or a written determination by USEPA that compliance with ARARs is not practicable considering the exigencies of the situation pursuant to 40CFR300.415(j).

0003, NPDES Permit No. CAG998001 ("General *De Minimus* Permit") or subsequent reauthorizations or amendments. This includes, but is not limited to, the need to submit a report of waste discharge.

4. Discharges to waters of the U.S. from swimming pools that are owned or operated by the Co-permittees must meet all of the following requirements:
    a. The discharge must not be composed of pool cleaning wastewater or filter backwash.
    b. The discharge must be de-chlorinated to a concentration of 0.1 ppm or less.
    c. The discharge must have a pH between 6.5 and 8.5 for direct discharges to inland surface waters or between 7.0 and 8.6 for direct discharges to enclosed bays and estuaries.
    d. The discharge volume and velocity must be controlled to prevent causing hydrologic conditions of concern.
5. Discharges from facilities owned or controlled by Co-permittees that extract, treat, and discharge water diverted from waters of the U.S. must meet the following requirements:
    a. The discharge to waters of the U.S. must not contain any pollutants added by the treatment process or contain pollutants in greater concentration(s) than the influent.
    b. The discharge must not cause or contribute to a condition of erosion or cause the suspension and discharge of pollutants already in the conveyance.
    c. The extraction and treatment must be in compliance with Section 404 of the Clean Water Act or with the conditions or provisions of any applicable permit, license, or CWA Section 401 Water Quality Standards Certification.

IV. RECEIVING WATER LIMITATIONS

A. Discharges from the Co-permittees' MS4s must not cause or contribute to exceedances of receiving water quality standards (designated beneficial uses and water quality objectives) for surface or ground waters or cause of contribute to a condition of nuisance unless a draft plan, prepared pursuant to Provision IV.D. below, has been submitted or, if final, is being fully implemented.
B. Discharges of urban runoff from the Co-permittees' MS4s must comply with receiving water quality standards through timely implementation of storm water control measures and other actions to reduce pollutants in discharges according to the conditions and provisions of this Order.
C. Determinations that discharges are causing or contributing to exceedances of water quality standards will be based, in part, on assessments of water quality data which are performed according to the schedule specified in attached Monitoring and Reporting Program No. R8-2014-0002 (Attachment A).
D. Upon a determination by the Co-permittees or the Executive Officer that a discharge is causing or contributing to the exceedance of an applicable water quality standard, the responsible Co-permittee(s) must submit a draft plan to the

Executive Officer describing actions that will be taken to achieve compliance. A plan, prepared according to Section XVIII of this Order, to achieve compliance with TMDL waste load allocations related to the exceeded water quality standard also satisfies this Provision.

1. The draft plan must be submitted to the Executive Officer within 6 months of the Co-permittees becoming aware that a discharge is causing or contributing to the exceedance.
2. Where a draft plan is requested in writing by the Executive Officer, the plan must be submitted within 90-days of the date of the request.
3. The plan must:
    a. describe the pollutant(s) that are known or suspected of causing or contributing to the exceedance(s);
    b. describe the persons or activities believed to cause or contribute to the pollutant(s);
    c. describe the BMPs that are being employed to control the pollutant(s);
    d. describe any proposed new BMPs, or modification of currently-employed BMPs, along with a schedule for their implementation to prevent or reduce the pollutant(s); AND
    e. include a monitoring program and periodic review to characterize the exceedance(s) and to objectively assess the effectiveness of BMPs employed to address them[4]; OR
    f. provide objective evidence, acceptable to the Executive Officer, that there is a trend indicating that relevant pollutant loads or concentrations are decreasing and that the applicable water quality standard(s) are expected to be satisfied without further intervention.
4. The draft plan is subject to review by the Executive Officer. The Co-Permittees must make any such modifications to the plan within 60-days of written notification by the Executive Officer.
5. The draft plan becomes a final plan and must be fully implemented by the responsible Co-permittees upon approval by the Executive Officer.
6. The Executive Officer will provide a 30-day public review period prior to approving and finalizing the draft plan.
7. If, despite the implementation of the approved final plan described above in this Section, there are continuing or recurring exceedances of water quality standards caused or contributed to by discharges from the Co-permittees' MS4s, the Co-permittees must reinitiate the procedure in this Section. Successive iterations must include modifications to BMPs, additional BMPs, and changes to the monitoring program as appropriate.
8. The Co-permittees must make the final plan accessible to the public by posting the plan to the responsible Co-permittees' web sites, the Principal Permittee's web site, or another method acceptable to the Executive

[4] Monitoring programs should not be designed to negate the prior monitoring results; such efforts will indicate deficiencies in the overall monitoring program and will require program improvements. Additional monitoring should be designed to characterize the severity and distribution of exceedances and inform the BMP improvement process.

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9. Except for inconsequential grammatical or technical corrections, the final plan may be amended by the Co-permittees only with the approval of the Executive Officer.

E. The Special Protections contained in Attachment B to Resolution No. 2012-2012, as amended or reauthorized by the State Water Resources Control Board, are hereby incorporated into this Order as if fully set forth herein. The Special Protections are specifically applicable to discharges from the City of Newport Beach to Newport Coast and Crystal Cove (ASBS 32 and ASBS 33, respectively) which are authorized by this Order. Where there are conflicts between this Order and the Special Protections, the most protective requirements, as determined by the Executive Officer, shall prevail. The Special Protections are accessible at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0012.pdf

V. IMPLEMENTATION AGREEMENT

The Co-permittees must execute inter-agency and inter-Co-permittee agreements necessary to satisfy the requirements of this Order.

VI. LEGAL AUTHORITY/ENFORCEMENT

A. Each Co-permittee must secure and maintain legal authority adequate to control the discharge of pollutants in urban runoff to their MS4s pursuant to the requirements of this Order.

B. Each Co-permittee must track and evaluate challenges to their authority to control the discharge of pollutants in urban runoff to their MS4s.

1. Where a formal or informal challenge indicates a weakness in the Co-Permittees' authority, the Co-permittee must act in good faith and in a timely manner to make their authority adequate.
2. The Co-permittees must report any discovered weaknesses in their legal authority in their Program Effectiveness Assessment. The report must include a plan, with a schedule of action(s), to make their authority adequate.

C. Each Co-permittee must secure and maintain legal authority, to the extent allowed by State and Federal Law, and subject to limitations on municipal action under the constitutions of the state of California and the United States, that is adequate to enter, inspect, and gather evidence (including pictures, video, samples, statements, and documents) from industrial, construction, and commercial establishments to determine compliance with ordinances, permits, conditions, and other requirements of the Co-permittees related to the control of discharges of pollutants to their MS4s.

D. Each Co-permittee must maintain adequate legal authority to impose a series of effective, progressive sanctions to compel compliance with their regulatory

requirements related to the control of discharges of pollutants to their MS4s.

1. Sanctions must include monetary and non-monetary penalties; bonding requirements; and permit denial, revocation, or stays for non-compliance.
2. Co-permittees must provide for civil and/or criminal penalties for violations and to provide abatement of violations that constitute a nuisance.
3. Where a Co-permittee finds that a sanction has not affected compliance, the Co-permittee must impose the next progressive sanction.
4. Within 90-days of the adoption of this Order, each Co-permittee must develop a formal, written program, which describes supporting policies and procedures that effectively promote the consistent and decisive use of their sanctions, and describes performance measures to track and objectively evaluate the sanctions' effectiveness.

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

A. Each Co-permittee must effectively prohibit illicit discharges and illicit connections to their respective MS4s through their ordinances and other appropriate mechanisms.
B. Each Co-permittee must employ an effective mechanism for the public to report known or suspected illicit discharges, illicit connections, and illegal dumping. The reporting mechanism must be continuously advertised to the public by each Co-Permittee using a minimum of two media outlets (i.e. newsprint, internet, telephone directory, etc.).
C. Each Co-permittee must make available and advertise the availability of legitimate mechanisms to dispose of wastes that have the potential to be illicitly discharged to their MS4s.
D. The Co-permittees must implement an effective program to detect illicit discharges and illicit connections; to abate illegal dumping that has the potential to result in a discharge of pollutants to their MS4s; to trace the source of illicit discharges and connections; and to eliminate or permit such discharges and connections. The Co-permittees' program must be fully described in written processes and procedures. Sanitary Sewer Overflows shall be treated as a sub-class of illicit discharges subject to additional requirements of Subsection VII.F.
    1. Co-permittees must provide mutual assistance to one another in detecting known or suspected illicit discharges, illicit connections, and illegal dumping.
    2. Each Co-permittee must maintain an electronic database that tracks instances of known or suspected illicit discharges, illicit connections, and illegal dumping within their respective jurisdictions.
        a. The database must be designed and used to track compliance with the requirements of this Section (Subsection VII.D.) and Section VI.
        b. The database must be designed and used to guide the Co-Permittees' most effective use of resources towards satisfying the requirements of this Section.
    3. Each Co-permittee must identify the personnel or staff positions that are

responsible for satisfying the requirements of Subsection VII.D. of this Order in their written program.

4. The Co-permittees must maintain maps of their respective MS4s that contain information of sufficient detail and quality to trace the source of suspected illicit discharges in a timely manner.
    a. The maps must be distributed in a format that is readily available to personnel responsible for satisfying the requirements of Subsection VII.D. of this Order.
    b. The maps must be reviewed and updated annually.
5. The Co-permittees must monitor a minimum of 30 monitoring stations during the dry season.
6. For each monitoring station, the Co-permittees must characterize the base line hydrology of the dry-weather discharges, and the parameters of the discharge (e.g. pH, TSS, etc.). Based on this information, the Co-Permittees must employ statistical flow and parameter thresholds that indicate when an illicit discharge may have occurred or when an illicit connection may exist (e.g. control charts or Shewhart charts). The Co-Permittees must also utilize odor, color, clarity, unusual wildlife morbidity or mortality, sheen, staining, corrosion, unnatural deposits, and other subjective indicators to identify suspected illicit discharges or illicit connections.
7. The Co-permittee that is the local jurisdiction must initiate (or cause to be initiated) an investigation to trace the source of the suspected illicit discharge or illicit connection (source investigation) where indicators developed pursuant to Provision VII.D.6. are found.
8. The Co-permittee that is the local jurisdiction must initiate (or cause to be initiated) a source investigation where bacterial monitoring (see Monitoring and Reporting Program No. R8-2014-0002) indicates AB411 receiving water standards are exceeded in ocean outfalls/tributaries and in the nearby surf zone.
9. A source investigation must occur in substantial conformance with a common set of written techniques and procedures developed by the Permittees as part of the written program described in Provision VII.D.
    a. Except as provided for in Section XVII, indications of a potential illicit discharge or connection must be investigated within three (3) business days of the Co-permittee (including the Principal Permittee) becoming aware of it.
    b. A source investigation may only be regarded as concluded after the cause(s) of the illicit discharge has been identified or continued monitoring fails to detect a subsequent exceedance of the same parameter(s) after 180 days. In the interim, the Co-permittee that is the local jurisdiction must put forth a good faith effort to identify the source of an identified illicit discharge or illicit connection.
    c. When the source of an illicit discharge or illicit connection is discovered, the Co-permittee(s) must take immediate action to eliminate the discharge or connection within 120 calendar days of discovery.

E. Each Co-permittees must implement an effective program to reduce and/or eliminate the discharge of trash and debris to waters of the U.S.
    1. Measures employed for the control of trash and debris must be reported and reviewed annually by the Co-permittees to objectively evaluate the measures' effectiveness. The results of the first review must be provided in the Annual Progress Report.
    2. The principle Co-permittee must demonstrate that the Co-permittees have formally evaluated new technologies for the control of trash and debris in the Annual Progress Report.
    3. Co-permittees may discontinue control measures for trash and debris that they deem ineffective provided that the measure is replaced by a more-effective measure.
        a. Any substitution must be approved by the Executive Officer and must be supported by substantial objective evidence.
        b. Co-permittees must satisfy any conditions imposed by the Executive Officer as part of the approval of any substitution.

F. For those Co-permittees that own or operate sanitary sewer systems over one mile in length, the State Board has established minimum requirements to prevent and mitigate sanitary sewer overflows ("SSOs") in Order No. 2006-0003-DWQ, "Statewide General Waste Discharge Requirements for Wastewater Collection Agencies". The Co-permittees that are not subject to the requirements of Order No. 2006-0003-DWQ, or subsequent renewals, must implement an effective program to detect and mitigate SSOs as follows:
    1. The Co-permittees' SSO program(s) must be comprised of the following elements:
        a. Procedures for responding to SSOs.
        b. A hands-on field training program for Co-permittees' staff responsible for responding to SSOs.
        c. An awareness-level training program for Co-permittees' field staff most likely to initially detect SSOs.
        d. If necessary, executed Memorandum/Memoranda of Understanding ("MOU") for delineating jurisdictional and financial responsibilities for the program.
        e. Objective program performance measures comprised, at a minimum, of SSO response time targets, training targets, and spill recovery targets.
    2. Co-permittees must respond to SSOs according to the formal written response procedures and MOU unless there is cause to believe that such a response would not be most effective under the circumstances.
    3. Co-permittees must maintain records adequate to demonstrate that they implemented the SSO program and its elements; records must be maintained for a minimum of five (5) years.
    4. The Principal Permittee is responsible for developing a model SSO program and its elements; and for documenting and reporting the program(s') outcomes in the Annual Progress Report.

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VIII. MUNICIPAL INSPECTIONS OF CONSTRUCTION SITES

A. Each Co-permittee must maintain an inventory of all construction sites within its jurisdiction.
   1. The construction sites inventory must include sites where building or grading permits are applicable and where activities at the site include the following:
      a. Soil movement;
      b. Uncovered storage of materials or wastes, such as dirt, sand, fertilizer, or landscaping materials; OR
      c. Exterior mixing of cementitious products (i.e. concrete, mortar, or stucco).
   2. All construction sites shall be included in the Co-permittees' inventory regardless of whether the site is subject to the Statewide General Construction Permit or an individual NPDES permit.
   3. The inventory of construction sites must be updated once per month, at a minimum.
   4. Each Co-permittees' inventory of construction sites must be maintained in an electronic-format database. The database records must include information on site/project ownership, project area, General Construction Permits WDID (if any), and location (latitude/longitude in decimal-degrees or NAD83/WGS84 format).

B. Each Co-permittee must inspect construction sites in their inventory, subject to limitations on municipal action under the constitutions of the State of California and the United States. Each Co-permittee must have written policies and procedures that describe how inspections and related enforcement actions are carried out. Inspections and related enforcement actions must be carried out in a manner that enforces compliance with applicable ordinance(s), plans, permits, or other requirements related to the control of discharges of pollutants to their MS4s.
   1. Co-permittees must categorize all construction sites in their inventory as either "high-priority", "medium-priority", or "low-priority". Construction sites with an expected or actual duration of more than two weeks must be inspected according to the following schedule:
      a. May 1st through September 30th of each year (dry season): all construction sites must be inspected at a frequency where sediment and other pollutants are properly controlled and that unauthorized, non-storm water discharges are prevented.
      b. October 1st through April 30th of each year (wet season):
         i. High-priority sites must be inspected once per month in their entirety.
         ii. Medium-priority sites must be inspected twice during the wet season.
         iii. Low-priority sites must be inspected once during the wet season.
      c. Where a Co-permittee determines that BMPs or their maintenance are inadequate or out of compliance, the site must be inspected weekly until the deficiency is corrected.

2. A construction site must be considered "high priority" if it meets any of the following minimum criteria:
    a. The site is 20-acres or larger;
    b. The site is over one acre and tributary to a water body listed according to Clean Water Act Section 303(d), as being impaired by sediment or turbidity; OR
    c. The site is tributary to, and within 500-feet of, an area defined by the Ocean Plan as an Area of Special Biological Significance ("ASBS").
3. A construction site must be considered "medium-priority" if it consists of between 5 and 20 acres of disturbed soil and is not otherwise a high-priority site. All other sites may be considered "low-priority".
4. Co-permittees must exercise good judgment and consider other factors or circumstances that could cause a construction site to fall into a higher priority. These factors include, but are not limited to, soil erosion potential, site slope, proximity to a receiving water, and the sensitivity of the receiving water to potential pollutants from the site.
5. Co-permittees must inspect construction sites according to a checklist. The checklist must document, at a minimum, that the inspector:
    a. Verified that the site has been covered by the General Construction Permit, if applicable, during the initial inspection;
    b. Reviewed an Erosion and Sediment Control Plan, to verify that the BMPs on the site are appropriate for the phase of construction;
    c. Identified, through visual observation, any non-storm water discharges and potential pollutant sources;
    d. Assessed the effectiveness of BMPs implemented at the site; and
    e. Identified and communicated to the site representative non-compliance with requirements related to the control of discharges of pollutants to the Permittee's MS4s.
6. Co-permittees must address non-compliance with relevant requirements with a series of effective, progressive sanctions in order to compel compliance.
7. Completed inspections must be recorded in an electronic-format database. The database must be organized in a manner that is adequate to determine compliance with the requirements of this Order. Inspection records must be maintained a minimum of three (3) years from the date of the project's completion.
8. Construction site inspectors must be trained according to Section XVI of this Order; inspectors must undergo training once per year.
9. The Executive Officer must be notified of any known, suspected, or threatened violation of applicable waste discharge requirements (i.e. State-wide General Construction Permit, etc.), discovered during inspections of construction sites according to Section XVII.C. of this Order. Such violations include, but are not limited to:
    a. Failure to obtain coverage under the applicable waste discharge requirements.
    b. Observed or threatened unauthorized discharges.

10. Except as provided for in Section XVII of this Order, Co-permittees must investigate complaints regarding construction sites, received by internal departments or divisions, external agencies, or the public, within three (3) business days of the complaint being brought to their attention.

IX. MUNICIPAL INSPECTIONS OF INDUSTRIAL SITES

A. Each Co-permittee must maintain an inventory of all industrial sites within its jurisdiction.
   1. All industrial sites shall be included in the Co-permittees' inventory regardless of whether the site is subject to the Statewide Industrial General Permit or other individual NPDES permit.
   2. The inventory of industrial sites must be updated once every three months, or more frequently.
   3. Each Co-permittees' inventory of industrial sites must be maintained in an electronic-format database. The database records must include information on site/project ownership, project area, Industrial General Permits WDID (if any), and location (latitude/longitude in decimal-degrees or NAD83/WGS84 format).

B. Each Co-permittee must inspect industrial sites in their inventory, subject to limitations on municipal action under the constitutions of the State of California and the United States. Each Co-permittee must have written policies and procedures that describe how inspections and related enforcement actions are carried out. Inspections and related enforcement actions must be carried in a manner that consistently enforces compliance with applicable ordinance(s), plans, permits, or other requirements related to the control of discharges of pollutants to their MS4s.
   1. Co-permittees must categorize all industrial sites in their inventory as either "high-priority", "medium-priority", or "low-priority". Industrial sites must be inspected according to the following schedule:
      a. High-priority sites must be inspected once per year in their entirety.
      b. Medium-priority sites must be inspected once every two years.
      c. Low-priority sites must be inspected once every five years.
      d. An inspection of an industrial site that is covered by the General Industrial Permit by Regional Board staff may be substituted for any one of the above-required inspections for the same site.
      e. Where a Co-permittee determines that a site is out of compliance with requirements, the industrial site must be inspected, at a minimum, once per month until the site is in compliance.
   2. An industrial site must be prioritized as high priority if the site meets any of the following criteria:
      a. The site is subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 ("SARA");
      b. The site requires coverage under the General Industrial Permit;
      c. The site has a history of unauthorized non-storm water discharges;

   d. The site is tributary to, and within 500-feet of, an area defined by the Ocean Plan as an Area of Special Biological Significance ("ASBS").
3. Co-permittees must exercise good judgment and consider additional site-specific factors that could cause an industrial site to be categorized into a higher priority. These factors include, but are not limited to:
   a. quantity of materials or wastes used or stored outside;
   b. the potential for pollutants to be mobilized by storm water;
   c. facility size;
   d. proximity to a receiving water;
   e. the sensitivity of the receiving water to potential pollutants from the site (e.g. water bodies listed on the 303(d) List); AND
   f. any other relevant factors.
4. Co-permittees must conduct inspections of industrial sites according to a checklist. The checklist must document, at a minimum, that:
   a. During the initial inspection, the inspector verified that the site has been covered by the General Industrial Permit, if applicable;
   b. The inspector identified, through visual observation, any non-storm water discharges and potential pollutant sources;
   c. The inspector assessed the effectiveness of BMPs implemented at the site;
   d. The inspector documents evidence of non-compliance or threatened non-compliance with requirements related to the control of discharges of pollutants to the Co-permittee's MS4s.
5. Industrial site inspections must be recorded in an electronic-format database in a manner that is adequate to determine compliance with the requirements of this Order. Inspection records for a facility operator must be maintained for a minimum of three years following termination of business at the site.
6. Co-permittees must address instances of non-compliance with a series of effective, progressive sanctions to ultimately compel compliance.
7. Industrial site inspectors must be trained according to Provision XVI of this Order; inspectors must undergo training once per year.
8. The Executive Officer must be notified of any known, suspected, or threatened violation of applicable waste discharge requirements (i.e. State-wide General Industrial or Construction Permits, etc.), discovered during inspections of industrial sites according to Provision XVII.C. of this Order. Such violations include, but are not limited to:
   a. Failure to obtain coverage under the applicable waste discharge requirements.
   b. Observed or threatened unauthorized discharges.
9. Except as provided for in Provision XVII of this Order, Co-permittees must investigate complaints regarding industrial sites, received by internal staff, external public agency staff, or the public, within three (3) business days of the complaint being brought to their attention.

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X. MUNICIPAL INSPECTIONS OF COMMERCIAL SITES

A. Each Co-permittee must maintain an inventory of all fixed commercial sites within its jurisdiction.
   1. The inventory of commercial sites must be updated once every three months, at a minimum.
   2. Each Co-permittees' inventory of commercial sites must be maintained in an electronic-format database. The database records must include information on the following attributes:
      a. site/business ownership;
      b. site area;
      c. any related approved Water Quality Management Plans and associated structural treatment control BMPs; AND
      d. location (latitude/longitude in decimal-degrees or NAD83/WGS84 format).
   3. Commercial facilities include, but are not limited to those engaged in the following:
      a. Aircraft maintenance, fueling, or cleaning;
      b. Animal care facilities such as petting zoos and boarding and training facilities;
      c. Automobile and other motor vehicle body repair or painting;
      d. Automobile impound and storage facilities;
      e. Automobile mechanical repair, maintenance, fueling, or cleaning;
      f. Botanical or zoological gardens;
      g. Building material retail and storage facilities;
      h. Cemetaries;
      i. Eating or drinking establishments, including food markets and restaurants;
      j. Golf courses, parks, and other recreational areas or facilities;
      k. Landscape and hardscape installation;
      l. Machinery and equipment repair, maintenance, fueling, or cleaning;
      m. Marina operations;
      n. Nurseries and greenhouses;
      o. Painting and coating;
      p. Pest control service facilities;
      q. Pool, lake and fountain cleaning;
      r. Portable sanitary service facilities;
      s. Transportation services for passengers, parcels or freight;
      t. Watercraft maintenance, fueling, or cleaning;
      u. Any commercial sites that is tributary to, and within 500-feet of, an area defined by the Ocean Plan as an Area of Special Biological Significance; AND
      v. Other commercial sites that the Co-permittee determines may be a significant contributor of pollutants to the MS4.

B. Each Co-permittee must inspect commercial sites in their inventory, subject to limitations on municipal action under the constitutions of the State of California and the United States. Inspections must occur according to written processes

and procedures, and in a manner to enforce compliance with ordinance(s), plans, permits, WQMPs, or other requirements related to the control of discharges of pollutants to their MS4s.

1. Co-permittees must prioritize all commercial sites (except for eating or drinking establishments, see Section X.C. below) in their inventory as either “high-priority” or “low-priority”.
2. Each Co-permittee must categorize a minimum of 10% of their inventoried commercial sites as “high-priority” and a minimum of 20% of their inventoried commercial sites as “medium-priority”.
3. Prioritized commercial sites must be inspected according to the following schedule:
    a. High-priority sites must be inspected once per year in their entirety.
    b. Medium-priority sites must be inspected once every two years.
    c. Low-priority sites must be inspected once every five (5) years.
4. Any Co-permittee may propose an alternative priority category distribution of their commercial sites and implement the related inspection schedule subject to the written approval of the Executive Officer.
    a. The approved alternative distribution and schedule must be implemented in lieu of the distribution and inspection schedule prescribed in this Section.
    b. The Executive Officer may rescind that approval for cause with written notification to the Co-permittee(s).
5. Where a Co-permittee determines that BMPs or their maintenance is inadequate or out of compliance, the commercial site must be re-inspected within two weeks until BMPs and their maintenance is adequate or in compliance.
6. If Regional Board staff inspects a commercial site, the Co-permittee may substitute Regional Board staff’s inspection for an inspection required under this Order for the same site.
7. Co-permittees must exercise their discretion and consider site-specific factors that could cause a commercial site to be categorized into a higher priority. These factors include, but are not limited to, soil erosion potential, site slope, proximity to a receiving water, and the sensitivity of the receiving water to potential pollutants from the site.
8. Co-permittees must conduct inspections of commercial sites according to a checklist. The Co-permittees must use the checklist to document, at a minimum, that:
    a. The inspector identified, through visual observation, any non-storm water discharges, evidence of non-storm water discharges, and potential pollutant sources;
    b. The inspector assessed the effectiveness of BMPs implemented at the site;
    c. The inspector documented evidence of non-compliance or threatened non-compliance;
    d. If the inspector identifies non-compliance or a threat of non-

compliance with relevant requirements, or determines that BMPs are ineffective; the inspector notified the site operator and provided the applicable BMP Fact Sheet(s) and any other relevant published educational materials.

9. Commercial site inspections must be recorded in an electronic-format database in a manner that is adequate to determine compliance with the requirements of this Order. Inspection records for a site operator must be maintained for a minimum of three (3) years following the termination of business at the site.
10. Co-permittees must address non-compliance with a series of effective, progressive sanctions to ultimately compel compliance.
11. Commercial site inspectors must be trained according to Provision XVI of this Order; inspectors must undergo training once per year.
12. The Executive Officer must be notified of any known, suspected, or threatened violation of applicable waste discharge requirements (i.e. State-wide Construction Permit, etc.), discovered during inspections of commercial sites according to Provision XVII of this Order.
13. Except as provided for in Provision XVII of this Order, Co-permittees must investigate complaints regarding commercial sites, received by internal departments or divisions, external agencies, or the public, within three (3) business days of the complaint being brought to their attention.

C. The Co-permittees must inspect eating or drinking establishments annually or cause such inspections to occur on their behalf by another party. These third-party inspections are anticipated to occur as part of the Orange County Health Care Agency ("HCA") restaurant inspection program.
   1. The inspections must occur, in part, to enforce the local Co-permittee's requirements related to the control of discharges of pollutants to their MS4s (See Section III).
   2. Where the inspecting agency staff observes known or suspected violations of a local Co-permittee's requirements related to the control of discharges of pollutants to their MS4s, the known or suspected violation must be referred to the Co-permittee within two (2) business days.
   3. Co-permittees must respond to referrals from the HCA or other third-party within three (3) business days of the matter being brought to their attention.

D. The Co-permittees must implement an enforcement and outreach program for the following mobile businesses operating in the permit area: automobile wash/detail services, carpet cleaners, and pet services. The purpose of the program must be to identify potential dischargers and eliminate illicit non-storm water discharges into the MS4.

XI. RESIDENTIAL PROGRAM (INCORPORATED INTO PUBLIC EDUCATION)

XII. NEW DEVELOPMENT (INCLUDING SIGNIFICANT REDEVELOPMENT)

A. Planning Requirements

1. During the course of updating their respective General Plans; or the adoption or update of a Specific Plan and where the related change in the environment may impact surface water quality; the Co-permittees must, except as described in Section XII.A.2. below, adopt an effective set of goals, policies, and procedures consistent with the following goals:
    a. Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels; and minimize the impacts of 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 on hydrology and pollutants, including structural and non-structural best management practices; prevent post-development runoff rates and velocities from a site from having a significant direct, indirect, or cumulative adverse impact on downstream erosion or causing degradation of stream habitat.
    c. Minimize the quantity of urban runoff draining directly to impermeable surfaces and MS4s; maximize the use of permeable surfaces to percolate storm water into the ground.
    d. Preserve wetlands, riparian corridors and buffer zones, and establish reasonable limits on the clearing of vegetation from project sites.
    e. Encourage the use of infiltration, rainwater harvest and use, green or brown roofs, and other low-impact development methods where those methods are likely to effective, feasible, and consistent with the Co-permittees' water conservation, open space, healthy communities, waste diversion, or other sustainability-related goals or objectives[5].
2. A Co-permittee may reject any of the above-listed goals in whole or part. Where a Co-permittee rejects any of the above-listed goals in whole or part, the Co- Permittee must include findings explaining the basis of the rejection in their decision-making or supporting documents for the adoption of the new or updated General Plan or Specific Plan.
3. Where a Co-permittee adopts goals within their General Plan or Specific Plan consistent with the above-listed goals, the Co-permittee must also adopt supporting objectives that are measurable and verifiable within 12 months of the adoption of the General Plan or Specific Plan. Those adopted objectives may be developed as part of subsequent updates to the Co-permittee's municipal code, development standards, conditions of approval, or similar governing documents necessary to implement the

[5] For example, the incorporation of ground tire rubber into permeable asphalt pavement may help a Co-Permittee achieve water conservation, waste diversion, and ambient noise goals in addition to reducing pollutants in runoff from a site

General Plan or Specific Plan.

4. Each Co-permittee must adopt policies and procedures that are effective at integrating source control, site design and structural treatment control BMPs as early in the land-use planning and development process as practicable.
5. The Executive Officer or his designee, must be given the appropriate notices where a Co-permittee initiates an amendment or update of their General Plan which may directly, indirectly, or cumulatively impact beneficial uses, consistent with the requirements of Government Code Section 65350 *et seq*. This requirement does not diminish any other obligations of the Co-permittees' to provide notice to the Regional Board as a Responsible Agency pursuant to CEQA.
6. Co-permittees must not accept a development application as being complete without evidence that a report of waste discharge has been submitted to the Regional Board for any discharges of dredge or fill to waters of the U.S. associated with the project.
7. Within 12-months of the adoption of this Order, the Principal Permittee must review, update and submit to the Executive Officer any studies performed to examine feasible opportunities to retrofit existing storm water conveyance systems, parks, and other recreational areas with regional or sub-regional structural treatment control BMPs. The update shall expand the scope of the examination to include areas owned or controlled by the Co-permittees. If necessary, work necessary to complete only the expanded scope may be phased, but all phases must be completed no later than 36-months from the adoption of this Order.

B. Classifying and Processing Priority and Non-priority Projects

1. The requirements of Section XII.B., and subsequent sub-sections of Section XII., apply to initial project applications received by the Co-Permittees on the effective date of this Order (50-days following adoption). For projects initiated by the Co-permittees, the requirements apply to projects for which funding is approved on the date of the adoption of this Order. In the interim, the relevant requirements of Order No. R8-2009-0030 shall apply.
2. Each Co-permittee must classify development and redevelopment projects over which they have approval authority as "priority projects" (see Subsection XII.B.5. below) or "non-priority projects".
3. Each Co-permittee must employ a standardized form, checklist, or similar mechanism to document the basis for classifying a project as a priority project or a non-priority project.
    a. Each Co-permittee is responsible for ensuring the accuracy of information relied on in support of the Co-permittee's classification.
    b. The Co-permittees must maintain records of the basis for classification for a minimum of five years following the completion of the project.
4. Co-permittees must consider the whole of the project, consistent with the

requirements of CEQA, in classifying a project; the Co-permittees must not piecemeal a project.

5. Each Co-permittee must regard projects that fit any of the following categories of projects as priority projects; all other projects may be regarded as non-priority projects:
    a. Significant redevelopment projects that include the addition or replacement of 5,000 square feet or more of impervious surfaces on a developed site.
        i. Redevelopment projects do not include routine maintenance activities, or activities that are conducted to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.
        ii. Redevelopment projects do not include the replacement, upgrade, or installation of dry utilities (e.g. gas, electric, and telecommunications), sanitary sewer, or water distribution lines in existing transportation rights of way.
        iii. Where a redevelopment project results in the addition or replacement of less than 50% of the impervious surfaces of an existing developed site, and the existing development was not subjected to a properly-implemented and properly-approved WQMP, the numeric sizing requirements for structural treatment control BMPs apply only to runoff from the impervious areas added or replaced and not from the entire developed site.
        iv. Where a redevelopment project results in the addition or replacement of more than 50% of the impervious surfaces of an existing developed site, the numeric sizing requirements must be applied to runoff from the entire development.
    b. New developments that create a total of 10,000 square feet or more of impervious surfaces, including commercial, industrial, and mixed-use developments; public and private capital improvement projects; and single and multi-family dwelling units. This category includes public or private land development projects subject to the planning and building authorities of the Co-permittees.
    c. New or expanded automotive repair shops that engage in activities described by Standard Industrial Classification ("SIC") codes 5013, 5014, 5541, 7532 through 7534, and 7536 through 7539.
    d. Restaurants where the area of land development is 5,000 square feet or more.
    e. Hillside developments affecting 5,000 square feet or more, in areas with known erosive soil conditions or where the natural slope is 25% or more.
    f. Development that includes the construction of 2,500 square feet or more of impervious surface that is located within 200 feet of, or which discharges the site's runoff into, an environmentally sensitive area where the discharge is not commingled with discharges from other sites.

g. Parking lots, or other land areas or facilities for the temporary storage of motor vehicles, that includes the construction of 5,000 square feet or more of impervious surface exposed to storm water.
h. Street, road, highway and freeway improvement or construction projects affecting 5,000 square feet or more of paved surface used for the transportation of vehicles.
    i. This category excludes routine maintenance to restore or preserve only the surface course of pavement.
    ii. Project WQMPs for this category must be consistent with the USEPA's "Managing Wet Weather with Green Infrastructure Municipal Handbook: Green Streets"[6].
i. New retail gasoline outlets of 5,000 square feet or more and with a projected average daily traffic of 100 or more vehicles per day.

6. Each Co-permittee must require a preliminary WQMP or a non-priority project plan as part of a complete application for a project, in conformance with the Permit Streamlining Act. Both the preliminary WQMP and non-priority project plan must be subject to the Co-permittee's approval. A preliminary WQMP must be approved prior to the project's approval by the Co-permittee's decision-making body (e.g. city council, Board of Supervisors, etc.).
7. A WQMP or Non-Priority Project Plan is not required for a project which, in its entirety, is necessary to mitigate an emergency.
8. The Co-permittees' staff, contractors, or vendors responsible for preparing, reviewing or approving Water Quality Management Plans or non-priority project plans or for enforcing their implementation must be trained according to Section XVI of this Order.
9. Each Co-permittee must employ an effective mechanism to inform potential project applicants of the need for a preliminary WQMP or a non- priority project plan as part of a complete application prior to the submittal of an application.
10. A Co-permittee must not allow construction work to proceed on a project prior to approval of a final project WQMP or non-priority project plan.
11. Each Co-permittee must have an effective process that enforces substantial conformance between relevant project plans (i.e. grading plans, drainage plans, landscaping plans, etc.) and the approved preliminary and final project WQMP or non-priority project plans.
12. Each project WQMP or non-priority project plan approved by the Co-Permittees must contain sufficient information to demonstrate that the final WQMP or non-priority project plan was approved according to the requirements of this Order.
13. Each Co-permittee must have effective standard processes to ensure that the final project WQMP and non-priority project plan is internally consistent

[6] Lukes, Robb and Kloss, Christopher, "Managing Wet Weather with Green Infrastructure Municipal Handbook: Green Streets", USEPA, Low Impact Development Center, EPA-833-F-08-009, December 2008. Available at: http://water.epa.gov/infrastructure/greeninfrastructure/upload/gi_munichandbook_green_streets.pdf

and free of material contradictions.

14. As part of the project approval process, each Co-permittee must apply standard conditions of approval, or some other equally-effective measure(s), that requires the proper operation and maintenance of all source control, site design, and structural treatment control BMPs by the project applicant, their successors and assigns over the life of the project.
15. Each Co-permittee must have an effective inspection program to identify and correct missing, damaged, or deficient source control, site design, and structural treatment control BMPs during the construction or development of priority and non-priority projects.
16. In addition to using published and generally-accepted engineering design criteria (see Subsection D below), each Co-permittee must develop, publish, and apply guidelines that provide for site design and structural treatment controls to be readily inspected and maintainable, aesthetically pleasing where applicable, and generally of a quality that is satisfactory to the Co-permittee.
17. Co-permittees are prohibited from permitting final occupancy or otherwise effectively issuing final approval of a priority or non-priority project site until all source control, site design, and structural treatment control BMPs areconstructed, serviceable, and satisfactory to the Co-permittee or otherwise certified as such by a licensed professional engineer on behalf of the project applicant.
    a. Serviceable facilities must operate as intended; where the Co-Permittee is unable to conclusively determine that a facility is serviceable, the Co-permittee must require that the project applicant conduct a satisfactory field demonstration.
    b. Where deficiencies exist, the Co-permittee may permit final occupancy or issue final approval only if written enforcement action is taken and a time schedule to bring the site into compliance with its WQMP or non-priority project plan has been approved by the Co-permittee.
    c. Co-permittees must require that certifications by the licensed professional engineer be affixed with said engineer's stamp and maintained as part of the WQMP or non-priority project plan.
18. Each Co-permittee must have effective standard processes that provide the following:
    a. Approved final project WQMPs and non-priority project plans are retained using a system that allows for their ready retrieval for the life of the project.
    b. The Co-permittee is able to validate the authenticity of approved final project WQMPs and non-priority project plans.
    c. Approved final WQMPs and non-priority project plans are protected by the Co-permittee's standard record protection practices in the event of fire, information system failure or attack, or other loss or damage.

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C. General Requirements for Priority Projects

1. The Co-permittees must require priority projects to use source control, site design, and structural treatment control BMPs to remove pollutants in urban runoff.
2. Project Water Quality Management Plans must be prepared in substantial conformance with uniform written technical guidance. The technical guidance must implement the requirements of this Order for the benefit of persons responsible for preparing, reviewing and approving, enforcing, and implementing WQMPs.
3. Project Water Quality Management Plans must be prepared by or under the supervision of a registered civil engineer or licensed landscape architect (See Provision XII.D.6. below).
4. Final project Water Quality Management Plans must be approved by or under the supervision of a registered civil engineer acting on behalf, and with the expressed permission, of the Co-permittee.
5. Structural treatment control BMPs must be identified using standard nomenclature and must be sized and designed in substantial conformance with standards and methods found in published and generally-accepted engineering design manuals; unnecessary deviations from those standards and methods are prohibited. Where those manuals conflict with the requirements of this Order, this Order shall prevail. Where Co- Permittees allow deviations, justification(s) for their necessity must be documented in the final project WQMP.
6. Each Co-permittee must employ effective, uniform mechanisms to provide efficiency and consistency in their WQMP-approval process. Such mechanisms must include, at a minimum, the following:
    a. Use of written standard instructions, processes, procedures, and methods.
    b. Use of standardized paper forms, checklists, and worksheets.
    c. Use of model language for project WQMPs or categories of project WQMPs.
    d. Use of standardized models, electronic spreadsheets, web-based tools, and other software.
    e. Prepared maps, tables and other sources of information necessary for preparers and reviewers to evaluate the feasibility of structural treatment control BMPs.
7. The mechanisms must be subject to an annual review by the Co-Permittees for the purpose of promoting the mechanisms' continual improvement.
8. The Co-permittees must provide and promote a mechanism for stakeholder input in the continual improvement process for the preparation, review, enforcement, and implementation of WQMPs.
9. The Co-permittees must require project proponents to demonstrate in each approved project WQMP that there is a source of funding available and a party responsible for the long-term performance, operation, and maintenance of source control, site design, and on-

site or off-site structural treatment control BMPs over the life of the project.

10. The Co-permittees must provide that approved WQMPs are recorded in public records in a manner that allows for their discovery by interested parties and the transfer of responsibility in the event of the sale, lease, or other transfer of ownership or control of the affected site.
11. The Co-permittees must provide that any covenants, conditions, and restrictions, easements or other similar mechanisms necessary for the implementation of an approved WQMP are properly recorded in public records with the County and/or the relevant city.
12. The Co-permittees must maintain an electronic database adequate to identify sites affected by an approved WQMP.
    a. The database must be established within 6-months of the adoption of this Order. The database must include records identifying all structural treatment control BMPs installed after May 22, 2009 and their following attributes:
        i. Type of structural treatment control. If a 'type' does not comply with Provision XII.C.5., the facility must be identified as "undetermined".
        ii. Standards applied to the design of the facility.
        iii. Location by watershed and by a scale sufficient for location in the field.
        iv. Date of construction or date first placed in service.
        v. Party responsible for maintenance and their contact information, including emergency contact information.
        vi. Source of funding for operation and maintenance.
        vii. Actual or alleged performance, maintenance, or nuisance problems identified during any site inspections by the Co-Permittees or brought to their attention.
    b. Each Co-permittee must provide that information regarding WQMPs that were approved prior to May 22, 2009 populates the database on an opportunistic basis.
    c. Sites that are part of the Co-permittees' industrial and commercial inspection program inventories and which are subject to any approved WQMPs must have their information populated in the database no later than 60 months from the date of adoption of this Order.
13. The Co-permittees must refer nuisance problems associated with structural treatment control BMPs to the Orange County Vector Control District within 5 business days of the problem becoming known. The Co-Permittees must cooperate in good faith with the Orange County Vector Control District to remedy any confirmed nuisance problems.

D. General Requirements for Structural Treatment Control BMPs

1. A singular or set of structural treatment control BMPs that are volume-based must be sized to infiltrate, filter, or remove pollutants from any of the following design capture volumes from their tributary area:
    a. The volume of runoff produced by a 24-hour, 85th percentile storm event. The volume must be calculated using the County of Orange's 85th Percentile Precipitation Isopluvial map.
    b. 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/American Society of Civil Engineers Manual of Practice No. 87 (1998).
    b. 80% or more of the annual runoff volume, based on unit basin storage volume, using the method recommended in California Stormwater Best Management Practices Handbook – Industrial/Commercial.
    c. The volume of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as would be achieved by treatment of the volume of runoff produced by an 85th percentile, 24-hour rain event.
2. A singular or set of structural treatment control BMPs that are flow-based must be sized to infiltrate, filter, or remove pollutants from any of the following design flows from their tributary area:
    a. 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.
    b. 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.
    c. 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 would be achieved by treatment of the flow produced by the 85th percentile hourly rainfall intensity multiplied by a factor of two.
3. Structural treatment control BMPs intended to retain the design capture volume must be designed to infiltrate, evaporate, evapotranspirate, or use the volume over a period not to exceed 48-hours. Any remaining volume must be passed on to another structural treatment control BMP.
4. The design capture volume or flow may be treated by routing the runoff through multiple structural treatment control BMPs organized in series or parallel. Co-permittees must require that the design capture volume or flow be calculated for each area tributary to a structural treatment control or group of structural treatment control BMPs.
5. Co-permittees must require that practical and durable mechanisms are provided to indicate the need for maintenance of structural treatment control BMPs for the benefit of the party responsible for long-term maintenance. The mechanism must be readily identifiable and located on, within, or in close proximity to structural treatment control BMPs; such

mechanisms must be documented in the related approved project WQMP.

6. Structural treatment control BMPs must be sized and designed by, or under the direction of, a registered civil engineer.
7. Structural treatment control BMPs must incorporate design features to minimize the entrainment and bypass of captured pollutants in the course of routine maintenance, normal operation, or overflow.
8. Where a structural treatment control BMP satisfies the requirements of this Order but is undersized relative to its tributary area, Co-permittees must require that a cost analysis be performed.
    a. The analysis must disclose any costs which exceed the expected costs of operating a properly-sized facility according to manufacturer's recommendations or published and generally-accepted standards and any uncertainties and assumptions forming the basis of the calculations.
    b. The Co-permittees must require that the maintenance cost analysis be made part of the final approved WQMP and part of any disclosures associated with conveyance of the property to subsequent owners, operators, or other interested parties (e.g. lenders, insurers, etc.).
9. The Co-permittees must conduct inspections of all approved structural treatment control BMPs according to the following schedule:
    a. All privately-owned or operated structural treatment control BMPs, must be inspected a minimum of once every 5 years[57].
    b. All Co-permittee-owned or operated structural treatment control BMPs must be inspected annually prior to the wet season (October 1st).
10. Co-permittees must secure the authority to enter onto a property that is subject to an approved WQMP and to perform maintenance or take other remedial action on structural treatment control BMPs in the event that the responsible party fails to adequately operate or maintain the facility.
11. Structural treatment control BMPs must not cause a condition of nuisance or pollution, as defined in CWC Section 13050.
12. Structural treatment control BMPs must not cause or contribute to an exceedance of groundwater quality objectives.
13. Structural treatment control BMPs must not be approved in a final WQMP if they are located within waters of the U.S. unless the related discharges have been authorized pursuant to a Clean Water Act Section 401 Water Quality Standards Certification or waste discharge requirements.
14. Except as permitted by Subsection E, below, structural treatment control BMPs must be designed and constructed in substantial conformance with published and generally-accepted engineering design criteria. Unnecessary, non-substantial deviations from such criteria are prohibited.

[7]Structural treatment controls that are part of sites in the Co-permittees' industrial and commercial inventories are required to be inspected as part of the requirements of Sections IX and X of this Order. This requirement does not supersede the inspection schedules in those Sections.

E. Nonconforming Structural Treatment Control BMPs: Demonstration Facilities

1. The Co-permittees are prohibited from approving or allowing to be placed into service structural treatment control BMPs which do not substantially conform to published and generally-accepted engineering design criteria (nonconforming structural treatment control) unless the following requirements are satisfied:
    a. The planned construction of the nonconforming structural treatment control BMP is disclosed in the project's CEQA documentation.
    b. The design of the nonconforming structural treatment control BMP is based on sound principles of operation and pollutant-removal mechanisms exhibited by similar conforming structural treatment control BMPs.
    c. The tributary area of any single nonconforming structural treatment control BMP is three (3) acres or less.
    d. The nonconforming structural treatment control BMP is subject to an objective and statistically-valid performance monitoring plan and program with the purpose of comparing the actual performance of the nonconforming structural treatment control BMP with the expected performance of the most similar conforming structural treatment control BMP.
    e. A plan is established to decommission or render a facility inoperable in the event it is found to be a significant contributor of pollutants known to cause or contribute to the impairment to a water body that is listed pursuant to CWA Section 303(d) or subject to a TMDL.
    f. The Co-permittees must develop and employ written uniform procedures, which is approved by the Executive Officer, for the preparation, design, and implementation of a performance monitoring plan; the procedures must also provide objective standards and conditions for approving nonconforming structural treatment control BMPs for wider use.
    g. The Co-permittees approve no more than three (3) such similar nonconforming structural treatment control BMPs in total until and unless the results of the performance monitoring plan demonstrate that the nonconforming structural treatment control performs in a similar or better manner as compared to the most similar conforming structural treatment control.
    h. The nonconforming structural treatment control BMP is subject to all other requirements of this Order.
2. A Co-permittees must report both the application for approval and approval or denial of any nonconforming structural treatment control BMPs within their jurisdiction to the Principal Permittee.
3. The Principal Permittee is responsible for coordinating the Co-permittees in complying with the requirements of this Subsection.

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F. Priority Consideration of Retention LID BMPs in WQMPs

1. The Co-permittees must require that low impact development ("LID") controls that employ harvest and use, evaporation/transpiration, infiltration (collectively "retention LID BMPs") , or any combination thereof, of the entire design capture volume be given preference and first consideration in all WQMPs. That consideration must be demonstrated in the approved final WQMP.
2. The Co-permittees must require retention LID BMPs for the design capture volume, or the maximum portion thereof, wherever, based on Substantial Evidence, such controls are:
    a. technically feasible;
    b. economically feasible; AND
    c. where environmental and public health hazards can be mitigated to an acceptable level.
3. Where retention LID BMPs cannot meet the above general criteria, the Co-permittees must document the specific basis for their rejection in the approved final WQMP. The rejection of retention LID BMPs must be supported with Substantial Evidence.
4. The Co-permittees must mitigate the environmental and public health hazards of retention LID BMPs to an acceptable level where the absence of such mitigation would, by itself, make the use of retention LID BMPs infeasible. Mitigation is not necessary if the costs disproportionately outweigh the pollution control benefits; any such finding must be documented in the final WQMP and be supported with Substantial Evidence.

G. Secondary Consideration of Biotreatment Control BMPs in WQMPs

1. Structural treatment control BMPs that employ biological uptake, transformation, or degradation of pollutants ("biotreatment control BMPs") must be given secondary consideration in the project final WQMP, when, based on Substantial Evidence, any of the following conditions exist:
    a. Retention LID BMPs have been demonstrated to be technically or economically infeasible;
    b. The hazards of using retention LID BMPs cannot be mitigated to an acceptable level;
    c. A retention LID BMP is proposed but cannot be sized to treat the tributary area's entire design capture volume and a complementing biotreatment control BMP can be designed to treat the remaining volume or a portion thereof; OR
    d. A volume-based biotreatment control BMP, used as an alternative for the same tributary area, will treat the design capture volume that is 1.5 times that of the retention LID BMP that it replaces.
2. The Co-permittees must ensure that the final approved project WQMP demonstrates preferential consideration of biotreatment control BMPs over

non- LID BMPs.

3. When retention LID BMPs are demonstrated to be infeasible according to Section XII.G.1. above, the Co-permittees must require biotreatment control BMPs wherever these are:
    a. technically feasible;
    b. economically feasible; AND
    c. where the environmental and public health hazards can be mitigated to an acceptable level.
4. Where biotreatment control BMPs cannot meet the above criteria, the Co-Permittees must document the specific basis for their rejection in the approved final WQMP. The rejection of biotreatment control BMPs must be based on Substantial Evidence.
5. The Co-permittees must mitigate the environmental and public health hazards of biotreatment control BMPs to an acceptable level where the absence of such mitigation would, by itself, make the use of biotreatment control BMPs infeasible. Mitigation is not necessary if the costs disproportionately outweigh the pollution control benefits; any such finding must be documented in the final WQMP and be supported with Substantial Evidence.
6. Biotreatment control BMPs must be designed to maximize the infiltration of the design capture volume or flow.

H. Tertiary Consideration of All Other Structural Treatment Control BMPs: Non-LID BMPs

1. The Co-permittees must maintain and employ a common schedule which rates the expected performance of specific structural treatment control BMPs, or categories of structural treatment control BMPs.
    a. Any category of structural treatment control BMPs must include only those controls that employ the same principal of operation; use similar treatment mechanisms, and which can reasonably be expected to exhibit generally similar performance in the removal of pollutants.
    b. The performance of structural treatment control BMPs must be rated based on the reasonably-expected level of removal of categories of pollutants. The performance ratings must be classified as “high”, “medium”, and “low” level of removal. These ratings must be distinguished by fixed numeric thresholds.
    c. The Co-permittees’ assignment of the expected level of performance for the structural treatment control BMPs must be based on the best available objective evidence. The evidence must include field performance test data specific to the BMP.
    d. The categorizations of structural treatment control BMPs and their performance ratings must be reviewed bi-annually so that they are supported by the best available information.
2. Structural treatment control BMPs, which are not LID BMPs (“non-LID

BMPs") may be necessary to complement LID BMPs. Non-LID BMPs must not be accepted in an approved WQMP in lieu of LID BMPs unless LID BMPs cannot be employed pursuant to Sections XII.F. and XII.G. above.

3. The Co-permittees must maintain and employ a common schedule of project types and a corresponding common list of pollutants which can reasonably be expected to be found in urban runoff from those project types.
4. If non-LID BMPs are the only type of structural treatment control BMP employed to treat runoff from a tributary area of a project, the Co-Permittees must only accept the use of non-LID BMPs that provide either a "medium" or "high" level of treatment for the expected pollutants.
    a. The Co-permittees must use the performance rating schedule in Provision XII.H.1. above and the project category schedule in Provision XII.H.3. above to identify acceptable non-LID BMPs for a project.
    b. Approved WQMPs must reflect the use of this prescribed methodology.
5. If a project does not propose to use any LID BMPs on-site and a regional or sub-regional off-site LID BMP, that meets the requirements in Section XII.K. below, is planned to serve the project, the Co-permittees may require the use of the regional or sub-regional facility. The Co-permittees must require any BMPs that are needed to satisfy pre-treatment requirements for that facility where applicable.

I. Specific Requirements for Infiltration LID BMPs

1. The requirements of this Section apply to retention LID BMPs that are intended to infiltrate the entire design capture volume or a portion thereof (infiltration LID BMPs). The requirements of this Section are not intended to apply to bio-treatment control or other structural treatment control BMPs that incidentally infiltrate a portion of the design capture volume or flow.
2. The vertical separation from the bottom of the infiltration facility to the seasonal high groundwater must be a distance of 10-feet or more. Where the groundwater does not support, or does not have the potential to support, beneficial uses, the Co-permittee may approve infiltration facilities with less vertical separation provided that groundwater quality is maintained and that other potential hazards presented by such facilities can be mitigated to an acceptable level.
3. Infiltration facilities must be located a minimum horizontal distance of 100-feet from any water supply wells.
4. Infiltration facilities must incorporate one or more practical mechanisms to allow verification of the loss rate of the design capture volume. The mechanisms must be durable and useful over the life of the project and designed for the benefit of the party responsible for the operation of the facility.

5. Infiltration facilities which constitute Class V Injection Wells must comply with USEPA's Class V Rule, or as amended or revised[8].
6. Structural treatment control BMPs must be provided to pre-treat and remove pollutants that could unreasonably diminish the performance of the infiltration facility for the duration of the project.
7. The Co-permittees must develop, publish, and employ a common factor(s) of safety that must be used to size infiltration facilities. The factor(s) of safety must be based on those recommended in published and generally-accepted engineering design manuals.
8. The Co-permittees must develop, publish, and employ a uniform protocol for estimating the loss or draw-down rate used for designing LID BMPs that infiltrate.
    a. The protocol must be consistent with those used in published and generally-accepted engineering design manuals.
    b. The protocol must employ the best available information for estimating the loss rate.
    c. The Co-permittees must require that the following categories of projects use relevant site-specific methods to estimate soil infiltration rates:
        i. Residential projects affecting more than 10-acres or greater than 30 dwelling units.
        ii. Commercial or institutional projects affecting more than 5-acres or greater than 50,000 square feet of floor space.
        iii. Industrial projects affecting more than 2-acres or greater than 20,000 square feet of floor space.

J. Specific Requirements for Harvest and Use LID BMPs

1. The Co-permittees must not accept insufficient demand for harvested storm water as the sole basis for rejecting harvest and use LID BMPs unless the basis is supported by water demand calculations. Calculated estimates must demonstrate that the expected wet season water demand is insufficient to use the harvested design capture volume within a 48-hour period according to the following:
    a. The Co-permittees must publish and employ tables of daily average wet-season (October 1st through April 30th) demand rates and objective project characteristics necessary to provide sufficient demand for harvested storm water. The demand rates must be used for estimating anticipated non-potable uses of harvested storm water.
        i. The rates and thresholds must be based on published and generally accepted rates or methods for calculating average daily demand of harvested storm water for non-potable uses such as toilet and urinal flushing, landscape irrigation,

[8] USEPA, Office of Water, "Revisions to the Underground Injection Control Regulations for Class V Wells", 64 FR 68545-68573, December 7, 1999 (or as amended or revised)

industrial process supply, evaporative cooling, and vehicle washing.

ii. The rates and thresholds must account for the off-setting effects of rainfall, reclaimed water, water conservation or the inconsistent nature of demand.

iii. Reclaimed water supplies must be based on available supplies, not speculative supplies.

b. Where demand rates are dependent upon variable site occupancy, average daily occupancy during the wet season must be used. For example: Assuming that a school site has zero occupancy on weekends and holidays, if a school site is occupied by 300 people daily, five days a week, 30 out of 34 weeks of the season (to account for four vacation weeks), then the average daily occupancy is approximately 189 people per day. With a *per capita* toilet and urinal flush use rate of 33 gallons per day, the school site would provide average daily demand for up to 12,479-gallons.

$$300\frac{people}{day} \times \frac{5}{7} \times \frac{30}{34} = 189.1\frac{people}{day}$$

K. Off-Site Structural Treatment Control BMPs: Regional and Sub-Regional Facilities

1. Where a planned or existing off-site LID BMP is available to treat runoff from a priority or non-priority project, the project WQMP and non-priority project plan must demonstrate priority consideration for use of the off-site facility.
2. Co-permittees must require that structural treatment control BMPs be located on the project site except under the following conditions:
   a. A regional or sub-regional structural treatment control BMP has been planned as part of a WQMP for a Specific Plan, parcel map, master tract map, master plan of drainage, or similar larger plan of development that was approved prior to the adoption of this Order and all of the following requirements will be met:
      i. The project and the regional or sub-regional structural treatment control BMP are both located within the approved Specific Plan, parcel map, or similar larger plan of development.
      ii. The WQMP for the larger plan of development has been prepared and approved according to the requirements of this Order, Order No. R8-2009-0030 or Order No. R8-2002-0010, whichever was in force at the time.
      iii. The WQMP for the project complies with all other requirements of this Order to the extent that those requirements do not conflict with this Subsection

(Subsection XII.K.).

iv. Where Order No. R8-2002-0010 was in force at the time of the facility's approval, the project site must employ source and site design BMPs that infiltrate a portion of the design capture volume.

v. The regional or sub-regional facility is constructed, serviceable, and satisfactory to the Co-permittee prior to final occupancy or use of the project site(s) in its tributary area.

vi. The larger plan of development was approved according to the requirements of CEQA.

b. A regional or sub-regional retention LID BMP has been planned by the Co-permittees or another public agency and the following requirements will be met:

i. Site design and source control BMPs have been provided in the project WQMP.

ii. Any structural treatment control BMPs deemed necessary by the party responsible for the facility's performance ("Operator") to pre-treat and remove pollutants that could unreasonably diminish the performance of the facility or cause or contribute to a condition of nuisance over its service life have been provided in the project WQMP.

iii. An Operator will maintain ownership or control over the facility over the life of projects located within the facility's tributary area.

iv. The facility complies with, and/or is subject to, the requirements in Section XII.D. and, if an infiltration facility, Section XII.I. above.

v. The regional or sub-regional facility is constructed, serviceable, and satisfactory to the Co-permittee prior to final occupancy of the project site(s) in its tributary area.

vi. Approvals related to the facility occur according to the requirements of CEQA.

vii. The project WQMP is otherwise prepared according to the requirements of this Order.

c. A regional or sub-regional biotreatment control BMP has been planned by the Co-permittees or another public agency and the following requirements will be met:

i. Retention of the design capture volume has been maximized on the project site using site design and source control BMPs.

ii. The requirements in Section XII.J.1.b. (for regional or sub-regional retention LID BMPs above) have been or will be met as appropriate.

d. There is a LID BMP located offsite for which the Co-permittees' approval for use would not otherwise cause the Co-permittee to violate

any provision of this Order[9]. This includes, but is not limited to, the requirements to:

i. demonstrate consideration of retention LID BMPs on-site;
ii. maximize retention of the site's design capture volume on-site;
iii. demonstrate the capacity of the off-site facility to serve the project;
iv. demonstrate adequate funding for the off-site facility's construction, and/or operation and maintenance for the life of the project; AND
v. place the facility in service prior to final occupancy or use of the project site.

L. Waiver of Structural Treatment Control BMPs

1. Co-permittees are authorized to waive their requirement to provide structural treatment control BMPs (see Provision XII.C.1 above) to remove pollutants and subsequently approve a WQMP if all of the following conditions are met:
   a. The cost of employing structural treatment control BMPs has been demonstrated in the project WQMP to disproportionately outweigh the pollution control benefits.
   b. Source and site design BMPs have been incorporated to maximize the infiltration of urban runoff.
   c. The Executive Officer has been provided written notice of the Co-Permittee's intent to issue the waiver, along with adequate supporting documentation, at least 30-days prior to issuance by the Co-permittee.
   d. The Executive Officer approves the proposed waiver.

M. Requirements for Non-Priority Projects

1. Where a non-priority project includes modifications or improvements that are, or affect areas that are exposed to storm water or which may be sources of urban runoff, Co-permittees must require non-priority projects (see Section XII.B.) to implement source control and site design BMPs to remove pollutants in urban runoff. This requirement must not be construed to mean that structural treatment control BMPs are not required for non-priority projects; only that there is no presumption requiring rebuttal, that treatment control BMPs are economically or technically feasible.
2. BMPs must be documented in a Non-Priority Project Plan. The Non-Priority Project Plan must include a summary rationale for BMP selection.
3. Non-priority projects may employ source and site design BMPs that rely on

[9] In other words, the Co-permittee is faced with the choice of approving a WQMP where either a retention LID control could be located on-site or off-site, or where an eligible biotreatment control could be located on-site or off-site. Except for the facility's location, the approval would not violate the requirements of this Order

the same or similar set of treatment mechanisms used by structural treatment control BMPs, such as infiltration and harvest and use. In many cases, such controls may resemble structural treatment control BMPs but be substantially deficient relative to sizing and design criteria. These deficiencies may be the only characteristic which distinguishes source and site design BMPs from structural treatment control BMPs.

a. Where substantial deficiencies occur in meeting published and generally-accepted engineering design criteria, the Co-permittee must not accept that facility as a structural treatment control.
b. When practical, Co-permittees must pursue opportunities in good faith to have proposed source control and site design BMPs for non-priority projects modified such that they meet the relevant sizing requirements of this Order (see SectionXII.D. above); substantially conform to published and generally-accepted engineering design criteria; and become acceptable structural treatment control BMPs.

4. Source and site design BMPs must generally conform to published and generally-accepted designs or methods.
5. Non-priority project plans must be approved by or under the supervision of a registered civil engineer or licensed landscape architect acting on behalf of, and with the expressed permission of, the applicable Co-permittee.

N. Hydrologic Conditions of Concern

1. Co-permittees must address the changes in a priority project site's hydrology in the project WQMP according to the requirements of this Section except under any of the following conditions:
    a. The runoff volume and time of concentration for the two-year frequency storm event are not significantly affected by the project. A significant effect must be deemed to occur only where:
        i. The runoff volume from the site increases by 5% or more over the pre-project condition and/or
        ii. The time of concentration for runoff from the site decreases by 5% or more over the pre-project condition.
    b. All downstream conveyance channels that will receive runoff from the project are engineered, hardened, and regularly maintained to accommodate the necessary design flow capacity as dictated by the latest version of the County Hydrology Manual, and no sensitive stream habitat areas have the potential to be adversely affected by discrete or cumulative changes in hydrology.
    c. The project has the demonstrated capacity to infiltrate, harvest and use, evaporate, or evapotranspirate the volume of runoff produced by a two-year storm event within a 48-hour period.
    d. The Executive Officer grants an individual or general variance in writing to the Permittee(s).
        i. The granting of such variances must be supported by

objective and relevant studies.

ii. The Co-permittees must comply with any conditions placed on the issuance of the variance by the Executive Officer.

iii. The Executive Officer and the requesting Co-permittee(s) must provide the public an opportunity to comment on the proposed variance for a period of not less than 30-days prior to its issuance.

2. For those priority projects that do not meet the conditions in Subsection XII.N.1. above, the Co-permittees must apply the following conditions:
   a. The project WQMP must include a hydrology study that quantifies the pre- and post-project runoff volumes and times of concentration for a 2-year storm event.
   b. The project WQMP must provide BMPs that modify runoff flow rates, volumes and times of concentration to pre-project conditions for a 2-year storm event or to within 10% thereof unless the following has occurred:
      i. A Clean Water Act Section 401 Water Quality Standards Certification has been issued authorizing discharges of fill associated with channel modifications that would accommodate the project's changes in hydrology while protecting beneficial uses.
      ii. Site design and/or structural treatment control BMPs proposed for the site to reduce pollutants in urban runoff already effectively modify runoff volumes and times of concentration such that they satisfy Provision XII.N.2.b. above.
3. Co-permittees must prepare a set of watershed maps that identify management areas tributary to drainages that have not been engineered, hardened, and regularly maintained to accommodate the design flow capacity, as dictated by the latest version of the Orange County Hydrology Manual, and where sensitive stream habitat areas have the potential to be adversely affected by discrete or cumulative changes in hydrology (see Provision XII.N.1.b. above).
   a. The Co-permittees must submit the watershed maps in draft form to the Executive Officer for approval no later than 6 months following the adoption of this Order.
   b. The Co-permittees must make changes requested by the Executive Officer within 30-days of receipt of the request. The Executive Officer is authorized to approve the watershed maps conditioned upon completion of the changes.
   c. Upon approval by the Executive Officer, the Co-permittees must consistently use the applicable maps to identify projects that will be subject to the limitations on changes in runoff volumes and times of concentration provided in this Section (Section XII.N.).

XIII. PUBLIC EDUCATION AND OUTREACH

a. The Co-permittees must implement an effective public education program that both raises awareness and causes the audience take action to reduce pollution of urban runoff. The program must include a general audience, consisting of residents of school age and older and commercial and industrial establishments, and a target audience selected from the general audience to address high- priority urban runoff pollution issues.
b. The public education program must be described in a written plan. The Co- Permittees must:
    1. Make a minimum of 10 Million annual impressions on the general audience using educational content in multiple media to raise awareness of pollution in urban runoff;
    2. Identify goals and related measurable objectives that address a minimum of three high-priority urban runoff pollution issues over the term of this Order. Issues must be identified for the entire permit area, for each watershed, or for each city;3. Identify and analyze target audiences believed to have the greatest influence on the selected high-priority urban runoff pollution issues;
    3. Create specific messages that are appropriate to the target audiences and to identified sub-groups within the general audience;
    4. Develop educational content for media with the most potential to appeal to the audiences;
    5. Determine the methods and processes of distributing the educational content;
    6. Objectively evaluate the effectiveness of the program; AND
    7. Provide opportunities for public input, and demonstrate consideration of that input, in the development of the program.
c. The Co-permittees must provide a rationale in their written plan to justify the selected high-priority urban runoff issues and related target audiences.
d. During the term of this Order, the Co-permittees must distribute the educational content, using one or more of the selected methods and procedures determined most appropriate by the Co-permittees. The content must be distributed in a manner that is designed to communicate the program's messages to the general and target audiences annually, beginning with the next full monitoring and reporting period after the adoption of this Order.
e. The Co-permittees must implement an effective program to measure the achievement of the objectives and requirements in Section XIII.
    1. The program must include an annual assessment of progress towards meeting the goals and objectives of the education program.
    2. The Co-permittees must adapt their educational program in response to any shortcomings found as a result of the annual assessment.
    3. The program must include a statistically valid survey to measure:
        a. the general audiences' knowledge regarding the sources of urban runoff pollution;
        b. the impacts of the pollutant(s) on the environment; awareness of what the general audience can do to help prevent urban runoff

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pollution; AND

c. specific changes in the general audiences' behavior(s) to prevent urban runoff pollution.

4. The survey must be completed no later than 60 months from the date of the adoption of this Order.
5. The survey results must be made available to the public through a press-release, web site, or similar method acceptable to the Executive Officer.

XIV. MUNICIPAL FACILITIES/ACTIVITIES

A. Each Co-permittee must maintain an inventory of fixed facilities, owned or controlled by the Co-permittee, that have the potential to discharge pollutants in urban runoff.
   1. The inventory must include the following:
      a. Flood management and open storm water conveyance systems;
      b. Municipal landfills;
      c. Waste incinerators;
      d. Solid waste transfer facilities;
      e. Land application sites;
      f. Sewage collection and treatment facilities;
      g. Hazardous waste treatment, disposal, and recovery facilities;
      h. Corporation, maintenance, and storage yards;
      i. Airfields;
      j. Parks and cemeteries;
      k. Public buildings (police and fire stations and training facilities, libraries, etc.)
      l. Stadiums;
      m. Equestrian facilities;
      n. Animal shelters and kennels;
      o. Boat yards and marinas;
      p. Public parking facilities; and
      q. Areas or facilities that discharge directly to lagoons, the ocean, or environmentally sensitive areas.

B. The Principal Permittee may propose a schedule for inspection and cleaning of flood management and storm water conveyance systems under the Co-Permittees' control. The proposed schedule is subject to the approval of the Executive Officer. If approved, the schedule will serve as an alternative to the schedule prescribed by Subsection XIV.C. below.

C. Each Co-permittee must inspect a minimum of 80% of flood management and storm water conveyance systems under their control annually. 100% of the systems must be inspected every two years. Each Co-permittee must prepare a written inspection and maintenance schedule for each facility subject to this requirement.
   1. Accumulated pollutants must be removed from below-ground portions of the systems in a timely manner when found.
   2. Where other agencies' authorization is required to remove pollutants from

the systems (i.e. CWA Section 404 permit), the Co-permittee must make a good faith effort to secure the necessary authorizations and remove the accumulated pollutants in a timely manner.

3. Co-permittees must exercise their discretion and increase the inspection and cleaning frequency as necessary for those portions of the systems which accumulate “unusually large quantities” of pollutants.
4. The Principal Permittee must establish objective thresholds to define “unusually large quantities” of pollutants.
5. Co-permittees must have an effective management system to identify portions of the systems which accumulate unusually large quantities of pollutants.
6. Each Co-permittee must an effective management system in place to detect and eliminate or minimize the seepage of wastewater from sanitary sewers to the storm drain system.

D. Except for flood management and storm water conveyance systems, each Co-Permittee must categorize fixed facilities that they own or control into “high-priority”, “medium-priority”, and “low-priority” sites.

1. The Co-permittee must inspect each fixed facility according to the following schedule:
    a. High-priority sites must be inspected once per year.
    b. Medium-priority sites must be inspected once every two years.
    c. Low-priority sites must be inspected once every five years.
2. The following fixed facilities must be categorized as “high-priority” sites:
    a. Municipal landfills
    b. Publicly-owned treatment works
    c. Waste incinerators
    d. Solid waste transfer facilities
    e. Land application sites
    f. Corporation, maintenance, and storage yards
    g. Hazardous waste treatment, disposal , and recovery facilities
    h. Land-side areas of airfields
    i. Facilities that are located adjacent or within an environmentally sensitive area or that discharge directly to an environmentally sensitive area.
3. Co-permittees must categorize all other fixed facilities according to a uniform objective ranking system developed by the Principal Permittee. The ranking system must be based on the following factors:
    a. The degree to which potentially polluting activities occur in areas exposed to storm water.
    b. The quantity of potentially polluting materials used or stored at the facility.
    c. Whether or not the activities at a site could produce pollutants that cause or contribute to the impairment of a water body listed according to CWA Section 303(d).
    d. The risk of a release of a pollutant.
    e. The occurrence of known or suspected non-storm water discharges.
    f. The size of a facility and the number of employees assigned to the

facility.

4. Co-permittees must carry out inspections of fixed facilities to: identify and correct observed violations of the municipal code or ordinance related to protecting water quality; identify and correct unnecessary deviations from standard operating procedures (see Section XIV.E. below); internally enforce relevant discharge requirements; and identify and eliminate or minimize known or suspected non-storm water discharges.

E. Co-permittees must implement an effective program to prevent the discharge of pollutants from Co-permittees' field activities and fixed facilities.
   1. The program must include the imposition of written standard requirements on the person(s) performing field activities on behalf of Co-permittees. The requirements must direct the person(s) to effectively employ BMPs that are specific and relevant to the activity to prevent the discharge of pollutants to storm water.
   2. The program must include written standard operating procedures for Co-Permittees' staff that engage in field activities and activities at fixed facilities that have the potential to discharge pollutants in urban runoff.
      a. The standard operating procedures must incorporate BMPs to prevent or minimize such discharges of pollutants.
      b. The standard operating procedures must be subject to an annual review to verify their relevance and effectiveness. Each standard operating procedure must display the date of the last review, the identity of the reviewing personnel, and the due date for the next review.
   3. The program must include a training program to provide Co-permittees' staff with an awareness of the responsibilities described in standard operating procedures relevant to their duties (See Section XVI below).
   4. The program must include an inspection program for field activities to: identify and correct observed violations of the municipal code or ordinance related to protecting water quality; identify and correct unnecessary deviations from standard operating procedures; internally enforce compliance with relevant waste discharge requirements; and identify and eliminate or minimize known or suspected non-storm water discharges.
   5. The program must include disciplinary procedures or policies for Co-permittees' staff that unnecessarily deviate from standard operating procedures.

F. Each Co-permittee must implement an effective program: to reduce the use of unwarranted or excessive applications of pesticide and fertilizer at facilities that they own or control; to ensure that pests are controlled using the best available methods while protecting water quality; and to ensure that pesticides are used in accordance with Federal, State, and local laws and regulations.
   1. Each Co-permittee must develop and implement Integrated Pest Management, Pesticide and Fertilizer Guidelines.
   2. Each Co-permittee must conduct annual integrated pest management audits for chemicals known or suspected of impairing water quality to enforce the use Integrated Pest Management Strategies that reduce their potential entry into MS4s.

3. Each Co-permittee must conduct annual fertilizer use audits to verify that application rates do not exceed those recommended by University of California Integrated Pest Management Research, or similarly qualified organizations, and to enforce fertilizer application methods that eliminate or minimize fertilizer entry into MS4s.

XV. MUNICIPAL CONSTRUCTION PROJECTS AND ACTIVITIES

A. This Order authorizes the discharge of storm water runoff from construction projects that are under the ownership or direct responsibility of any of the Co-Permittees and that may result in land disturbance of one acre or more; or less than one acre if the project is part of a larger common plan of development or sale which is one acre or more.

B. All construction activities must be in compliance with the conditions and provision of the latest version of the State Board's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (NPDES Permit No. CAS000002) with the following exceptions:
   1. A Notice of Intent does not need to be submitted to the State Board. However, an alternate report of waste discharge, acceptable to the Executive Officer, must be provided.
   2. A Notice of Termination does not need to be submitted. However, an alternative notice, acceptable to the Executive Officer, must be provided upon completion of the project.
   3. The conditions and provisions in this Order pertaining to post-construction BMPs prevail.

XVI. TRAINING PROGRAMS

A. Each Co-permittee must have an effective training program for their staff, contractors and vendors whose duties or responsibilities directly or indirectly affect the Co-permittee's capacity to satisfy the requirements of this Order (collectively, "personnel").
   1. Those personnel include, but are not limited to, the following:
      a. Storm water program managers;
      b. CEQA practitioners;
      c. Inspectors;
      d. Maintenance personnel;
      e. Plan checkers;
      f. Planners;
      g. The division heads of all of the above staff;
      h. Contractors and vendors who perform duties similar to the above staff.
   2. Each Co-permittee must maintain a roster of personnel or staff positions whose duties or responsibilities directly or indirectly affect the Co-Permittee's capacity to satisfy the requirements of this Order.

3. Except for industrial, commercial, and construction site inspectors, personnel must undergo training a minimum of once every two years. New hires must receive their initial training within 6 months of their initial hire date.
4. The training program must be subjected to an annual review, for the purpose of achieving continual improvement of its effectiveness, and must be updated accordingly.
5. Training materials must be written in plain, straightforward language, avoiding technical terms as much as possible, and using a coherent and easily readable style. Training materials must not exceed a 13th grade reading level. The materials' readability must be measured using published and generally-accepted methods (e.g. Flesch Kincaid Grade Level, Automated Readability Index, etc).
6. The Co-permittees must employ a method that objectively demonstrates that personnel individually have the necessary level of expertise and competence commensurate with their duties and responsibilities.
7. The Co-permittees must maintain records demonstrating that personnel have satisfied the requirements of the training program; records must be maintained for a minimum of three (3) years.
8. Training records must be maintained as part of staff personnel records and contract and vendor records, as part of a region-wide training registry, or through another mechanism acceptable to the Executive Officer.

B. The Principal Permittee must establish a written training curriculum for use by the Co-permittees. The contents of the curriculum must be commensurate with the duties and responsibilities of the affected personnel.
   1. At a minimum, all affected personnel must be trained in the following subject matter:
      a. An overview of Federal, state and local water quality laws and regulations pertaining to urban runoff.
      b. The potential direct and indirect impacts of urban runoff on receiving waters.
      c. Current water quality impairments.
      d. The potential sources of pollutants in urban runoff.
      e. Specific actions that personnel are obligated to take to reduce pollutants in urban runoff.
   2. At a minimum, personnel who are responsible for inspecting construction sites must be trained in the following subject matter:
      a. Federal, state and local water quality laws and regulations pertaining to construction and grading activities.
      b. The potential effects of construction and grading activities and urbanization on water quality.
      c. The proper application and use of erosion and sediment control BMPs.
      d. The Co-permittee's enforcement tools and procedures.
   3. At a minimum, personnel responsible for inspecting commercial and industrial sites must be trained in the following subject matter:
      a. Federal, state and local water quality laws and regulations

pertaining to commercial and industrial activities.
   b. The potential effects of commercial and industrial activities and urbanization on water quality.
   c. The proper application and use of non-structural and structural treatment control BMPs.
   d. The Co-permittee's enforcement tools and procedures.
4. At a minimum, personnel responsible for inspecting restaurants must be trained in the following subject matter:
   a. Proper oil and grease disposal.
   b. Proper housekeeping of trash bins and trash bin enclosures.
   c. Proper cleaning of floor mats, mops, filters, and garbage containers and proper disposal of related waste water.
   d. Proper methods of cleaning parking lot areas.
   b. Proper spill clean-up methods.
   c. Proper operation and maintenance of devices designed to separate fat, oil, and grease from wastewater.
   d. The Co-permittee's enforcement tools and procedures.
5. At a minimum, personnel responsible for investigating, eliminating or permitting illicit discharges and illicit connections must be trained in the following subject matter:
   a. The potential effects of illicit discharges and illicit connections on water quality.
   b. SSO and general spill response and coordination procedures.
   c. Investigation techniques and procedures.
   b. The Co-permittee's enforcement tools and procedures.
6. At a minimum, personnel responsible for preparing, reviewing or approving Water Quality Management Plans or non-priority project plans or for ensuring their implementation must be trained in the following subject matter:
   a. The requirements found in Section XII of this Order.
   b. The related written processes, procedures, and methods for selecting, sizing, and designing source control, site design, and structural treatment control BMPs.
   c. Investigation techniques and procedures.
   d. The Co-permittee's enforcement tools and procedures.

XVII. NOTIFICATION REQUIREMENTS

A. When Co-permittees become aware of a site or incident within their jurisdiction that poses an imminent threat to human health or the environment, the Co-Permittee(s) must take the following actions:
   1. Provide oral or electronic mail notification to Regional Board staff of the imminent threat within 24 hours of becoming aware.
   2. Submit a written report within five (5) business days following the initial notification to Regional Board staff. The report must provide the following information:

a. Details of the location, nature and circumstances of the threat to human health or the environment.
b. Details of any corrective action(s) taken or planned to mitigate the threat and prevent its reoccurrence.
c. Identity of the responsible parties.
d. Describe any enforcement actions taken or planned by the Co-Permittee.

3. Record incidences and the related report in the applicable construction, industrial or commercial site database.

B. For the purposes of this Section, sewage spills in excess of 1,000 gallons and all reportable quantities of hazardous waste spills, as per 40 CFR § 117 and 40CFR § 302, constitute imminent threats to human health or the environment.

C. If, during the course of a site inspection or complaint investigation, Co-permittees or their representatives become aware of a known, suspected, or threatened violation of applicable waste discharge requirements (i.e. State-wide General Industrial or Construction Permits, etc.), the Permittee must provide written notice to the Executive Officer.

1. Where circumstances do not pose an imminent threat to human health or the environment, the written notice must be provided on a quarterly basis. For the purposes of this Provision, each quarter of the monitoring and reporting period constitutes a reporting period, with the notice due within 30-days of the end of each period.
2. The notice must include the location, nature and circumstance of the known, suspected, or threatened violation(s); prior history of any relevant violations of state and local requirements; and action(s) taken or planned by the Co-permittee(s) to bring the site operator into compliance.

XVIII. TOTAL MAXIMUM DAILY LOAD IMPLEMENTATION

A. The responsible Co-permittees must implement BMPs to achieve the Waste Load Allocations ("WLAs") specified in Appendices B through H of this Order[10]. The responsible Co-permittees must comply with all other requirements in those Appendices.

B. Discharges from the Co-permittees' MS4s must comply with the applicable WLA by the compliance date specified in Appendices B through H of this Order, or where no compliance date is specified, upon the effective date of this Order unless:

1. The responsible Co-permittee, or group of Co-permittees has notified the Executive Officer in writing of their intent to develop a plan to achieve compliance with one or more relevant WLAs in lieu of immediate compliance with those WLAs according to Subsection XVIII.C. below; and other requirements described in Subsection

[10] WLAs and other requirements are subject to change during the term of this Order. This Order may be modified, revoked or reissued prior to its expiration date to incorporate any requirements imposed upon the Co-permittees through the TMDL process. See Provision XXII.A.4.

XVIII.C. below are complied with; OR

2. There are no exceedances of WLA(s) at the designated monitoring location(s) for an outfall or receiving water body. The monitoring location must be designated pursuant to the requirements of MRP R8-2014-0002; OR
3. There is no discharge from the Co-permittees' MS4 to the receiving water during the time period subject to the WLA; OR
4. Exceedances of a WLA occur at a frequency that is less than or equal to a site-specific exceedance frequency specified in the "Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List" (September 2004) as amended or revised[11].

C. If a responsible Co-permittee, or group of Co-permittees elects to prepare and implement a plan to comply with WLA(s) and related requirements in Appendices B through H, they must notify the Executive Officer in writing of their intent. The plan must be prepared according to the following requirements:

1. Unless discharges are not in compliance with WLAs, an initial draft plan must be submitted within 18 months of the date of the responsible Co-permittee's submittal of a written notice to the Executive Officer of the intent to prepare and implement a plan. If discharges are not in compliance with WLA(s), an initial draft plan must be submitted to the Executive Officer within 6 months of the Co-permittee's submittal of their written notice.
2. The draft and final plan must:
   a. describe the pollutant(s) that are known or suspected of causing or contributing to actual or potential exceedance(s);
   b. describe the persons or activities believed to cause or contribute to the pollutant(s);
   c. describe the BMPs that are being employed to control the pollutant(s);
   d. describe any proposed new BMPs, or modification of currently-employed BMPs, along with a schedule for their implementation to comply with the applicable WLA(s);
   e. include an objective analysis which provides a reasonable assurance that the new or modified BMPs can be expected to cause discharges to comply with the applicable WLA(s); AND
   f. include a monitoring program and periodic review to characterize the affective discharge(s) and to objectively assess the effectiveness of BMPs employed to address the exceedance(s)[12]; OR
   g. provide objective evidence, acceptable to the Executive Officer,

[11] Available at: www.waterboards.ca.gov/water_issues/programs/tmdl/docs/ffed_303d_listingpolicy093004.pdf

[12] Monitoring programs should not be designed to negate the prior monitoring results; such efforts will indicate deficiencies in the overall monitoring program and will require program improvements. Additional monitoring should be designed to characterize the severity and distribution of exceedances and inform the BMP improvement process.

that there is a trend indicating that relevant pollutant loads or concentrations are decreasing and that the applicable WLA(s) may be satisfied without further intervention.

3. The draft plan is subject to review and approval by the Executive Officer. The Co-permittees must make any such modifications to the plan within 60-days of written notification by the Executive Officer.
4. The Executive Officer will provide a 30-day public review period prior to approving the draft plan.
5. If, following the approval and implementation of a final plan, subsequent monitoring demonstrates that discharges continue to exceed the WLA(s), the responsible Co-permittees must revise or amend the plan according to the requirements of this Section.
6. The Co-permittees must make a final plan accessible to the public by posting the plan to the responsible Co-permittees' web sites, the Principal Permittee's web site, or another method acceptable to the Executive Officer.
7. Except for inconsequential grammatical or technical corrections, the final plan may be amended by the Co-permittees only with the approval of the Executive Officer.

D. The draft plan becomes a final plan and must be fully implemented upon approval by the Executive Officer.

E. Compliance with the TMDL requirements for a pollutant(s) in Subsections XVIII.A. through XVIII.C. satisfies Subsections IV.A. through IV.C. above for the relevant water quality standard(s).

XIX. PROGRAM EFFECTIVENESS ASSESSMENTS

A. Each Co-permittee must have a program in place to objectively assess the effectiveness of best management practices employed in each of the elements of their storm water program. The program must be documented in writing.

B. The Principal Permittee must develop a model program effectiveness assessment. The model assessment must address storm water program elements that are common to all or a majority of the Co-permittees and that are necessary to compile information on the overall performance of the Co-Permittees' collective efforts.

C. Each Co-permittees' programs must be comprised of the following elements:
   1. Conceptual generalized model(s) of how each pollutant, or functionally similar group of pollutants, are released to the environment and transported to the receiving water(s) (pollution process).
   2. A list of each of the best management practices (interventions) in the pollution process and where in the process they are intended to be applied.
   3. A system to objectively measure the performance of each intervention or group of interventions. The system must include valid performance metrics (or measures), the method(s) to measure and analyze the metrics, and a method to track and document outcomes.
   4. Annual evaluation of the validity of the program; how effective the

interventions are in achieving the desired outcomes; if the performance metrics and the method(s) for measuring outcomes are valid; and any changes found necessary to improve the effectiveness of the interventions or the overall process.

D. Each Co-permittee must perform assessments of their best management practices annually. The results must be included in the Annual Progress Report (see Monitoring and Reporting Program No. R8-2014-0002). Reported outcomes must be expressly compared to the objective requirements of this Order (prescribed performance standards) where they are provided. The Principal Permittee is responsible for compiling and analyzing information where necessary to demonstrate compliance with the requirements of this Order.

E. Each Co-permittee must have an effective mechanism that solicits input from stakeholders in the development and implementation of the program effectiveness assessments.

XX. FISCAL ANALYSIS

D. The Co-permittees must prepare and submit a unified fiscal analysis to the Executive Officer of the Regional Board. The analysis must conform to fiscal reporting guidance issued by USEPA when available. The analysis must be submitted with the Annual Progress Report (see Monitoring and Reporting Program No. R8-2014-0002) and, at a minimum, include:

1. An accounting of each Co-permittee's expenditures for the previous fiscal year;
2. An accounting of each Co-permittee's budget for the current fiscal year;
3. A description of the source of funds; AND
4. Each Co-permittee's estimated budget for the next fiscal year.

XXI. PROVISIONS

A. All reports that are submitted by the Co-permittees according to the requirements of this Order and which are subject to the approval of the Executive Officer will be publicly-noticed and made available at the Regional Board's web site or through other means. Noticed reports will be subject to public review and comment. The Executive Officer will consider all comments received prior to approval of the reports. Any unresolved, significant issues will be scheduled for a public hearing at a Regional Board meeting prior to approval by the Executive Officer.

B. The Co-permittees must comply with the requirements of Monitoring and Reporting Program No. R8-2014-0002 ("MRP"), as amended or revised during the term of this Order. The MRP is hereby made a part of this Order. The requirements of the MRP are subject to revision under the direction of the Executive Officer.

1. Any proposed revisions to the MRP must be submitted in writing to the

Executive Officer for approval.

2. The Principal Permittee must provide public notice of any proposed revisions. The public notice must include direct notice given to potential and known interested stakeholders.
3. The Executive Officer must provide a minimum of 20-days to interested parties to comment before approving any revisions.
2. The Co-permittees must make available to the public the results of field and laboratory analyses performed on all samples collected pursuant to the MRP.

C. The NPDES program requirements contained in 40CFR§122.21(a), (b), (d)(2), (f), (p), (h), (i), (j), (k), and (l); and 40CFR§122.42(c) are incorporated into this order by reference.

D. The Co-permittees must report to the Executive Officer of the Regional Board any known discharges of storm water or non-storm water which may have an impact on human health or the environment.

E. The Co-permittees must report to the Executive Officer any suspected or known activities on federal, state, or other entity's land or facilities where the Co-Permittees do not have jurisdiction, where the activities may be contributing pollutants to waters of the U.S.

XXII. PERMIT MODIFICATION

A. In accordance with 40CFR§122.41(f), this Order may be modified, revoked or reissued prior to its expiration date for the following reasons:

1. 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;
2. To incorporate applicable requirements of state-wide 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;
3. 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
4. To incorporate any requirements imposed upon the Co-permittees through the TMDL process.

B. The filing of a request by the Co-permittees for modification, revocation, and reissuance or termination or a notification of planned changes or anticipated noncompliance does not stay any conditions of this Order.

XXIII. PERMIT EXPIRATION AND RENEWAL

A. This Order will expire on MONTH DAY, 2019. The Co-permittees must file a report of waste discharge (permit application) no later than 180 days in advance of the expiration of this Order after which this Order may be administratively extended (40 CFR §122.6). The submittal of a report of waste discharge will constitute an application for issuance of new waste discharge requirements (40 CFR § 122.41(b)).
B. All permit applications (reports of waste discharge), Annual Progress Reports, and other information submitted under this Order must 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).
C. 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. This Order shall become effective fifty (50) days after the date of its adoption, provided that the Regional Administrator of the USEPA has no objections. If the Regional Administrator objects to its issuance, this Order shall not become effective until such objection is withdrawn.
D. Except for enforcement purposes, Order No. R8-2009-0030 is hereby withdrawn upon the effective date of this Order.

XXIV. STANDARD PROVISIONS

A. Duty to Comply
    1. The Co-permittee(s) must comply with all of the conditions and provisions of this Order. Any noncompliance with the requirements of this Order constitutes a violation of the CWA and the CWC. Noncompliance is grounds for enforcement action and/or removal from Permit coverage.
    2. Any failure to take appropriate corrective action(s) as specified in this Order or as directed by the Executive Officer is also a violation of this Order.
    3. The Co-permittee(s) must comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants. Compliance must be achieved within the time provided in the regulations that establish these standards or prohibitions, even if this Permit has not yet been modified to incorporate the requirement.
B. General Permit Actions

    If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under section 307(a) of the CWA for a toxic pollutant which is present in the discharge and that standards or prohibition is more stringent than any limitation on the pollutant in this Permit, this Permit shall be

modified or revoked and reissued to conform to the toxic effluent standard or prohibition and the Co-permittees so notified.

C. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Co-permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.

D. Duty to Mitigate

The Co-permittee(s) must take all responsible steps to minimize or prevent any discharge which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance

The Co-permittees must at all times properly operate and maintain any facilities and systems of treatment and control (and related equipment and apparatuses) which are installed or used by the Co-permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of back-up or auxiliary facilities or similar systems installed by a Co-permittee when necessary to achieve compliance with the conditions of this Permit.

F. Property Rights

This Permit does not convey any property rights or any sort of exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor does it authorize any infringement of Federal, State, or local laws or regulations.

G. Duty to Provide Information

The Co-permittees must provide to the Regional Board, State Board, or USEPA, within a reasonable time, any requested information to determine compliance with this Permit. The Co-permittees must also furnish, upon request, copies of records that are required to be kept by this Permit.

H. Inspection and Entry

1. The Co-permittees must allow Regional Board staff, State Board staff USEPA staff, or an authorized representative of the municipal operator of the MS4 receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:
    a. Enter upon the Co-permittees premises at reasonable times where a regulated activity is being conducted or where records must be kept under the conditions of this Permit;
    b. Access and copy at reasonable times any records that must be kept under the conditions of this Permit.
    c. Inspect at reasonable times the facility; AND
    d. Take pictures, collect samples, collect evidence, or monitor at

reasonable times for the purpose of ensuring Permit compliance.

I. Monitoring and Records
   1. Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.
   2. Records of monitoring must include:
      a. The date, exact place, and time of sampling or measurements;
      b. The date(s) analyses were performed;
      c. The individual(s) who performed the analyses;
      d. The analytical techniques or methods used; AND
      e. The results of such analysis.
   3. The Co-permittees must maintain a paper or electronic copy of all storm water monitoring information, copies of all reports (including the Annual Progress Reports), SWPPPS, and all other required records, including a copy of this Permit, for a period of at least five (5) years from the date generated or date submitted, whichever is later.

J. Electronic Signature and Certification Requirements

All Annual Progress Reports or other information required by this Permit or requested by the Regional Board, State Board, USEPA, or local storm water management agency must be certified and submitted by the Legally Responsible Person ("LRP") or the LRP's Approved Signatory.

K. Certification

Any person signing documents under Section XXIV.J. above, must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

L. Anticipated Noncompliance

The Co-permittee(s) must give notice to the Regional Board and local storm water management agency of any planned changes in any municipal activity which may result in noncompliance with this Permit's requirements.

M. Penalties for Falsification of Reports

Section 309(4) of the CWA provides that any person who knowingly makes a false material statement, representation, or certification in any record or other document submitted or required to be maintained under this Permit, including reports of compliance or noncompliance shall, upon

conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years, or by both.

N. Oil and Hazardous Substance Liability

Nothing in this Permit shall be construed to preclude the institution of any legal action or relieve the Co-permittee(s) from any responsibilities, liabilities, or penalties to which the Co-permittee(s) is or may be subject to under Section 311 of the CWA.

O. Severability

The provisions of this Permit are severable; and, if any provision of this Permit or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby.

P. Penalties for Violations of Permit Conditions

Section 309 of the CWA provided significant penalties for any person who violated a permit condition the implements Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any such section in a permit issued under section 401. Any person who violated any permit condition of this Permit is subject to civil penalty not to exceed $37,500 per calendar day of such violation, as well as any other appropriate sanction provided by Section 309 of the CWA. The Porter-Cologne Water Quality Control Act also provides for civil and criminal penalties, which in some cases are greater than those under the CWA

Q. Transfers (not applicable)

R. Continuation of Expired Permit

1. This Permit continues in full force and effect until a new Permit is issued or the Regional Board rescinds this Permit.
2. Only those Co-permittees authorized to discharge under the expiring Permit are covered by the continued Permit.

S. Other Federal Requirements

All other requirements of 40 CFR § 122.41 and 40 CFR § 122.42 are incorporated into this Permit by reference.

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ACRONYMS

ASBS Areas of Special Biological Significance

BMPs Best Management Practices

CCC Criterion Continuous Concentration

CCR California Code of Regulations (State Water Board regulations are in Title 23)

CEQA California Environmental Quality Act

CFR Code of Federal Regulations

CMC Criterion Maximum Concentration

CTR California Toxics Rule

CWA Clean Water Act

CWC California Water Code

DAMP Drainage Area Management Plan

DDT Dichlorodiphenyltrichloroethane

HCA Health Care Agency

LA Load Allocation

LID Low Impact Development

LIP Local Implementation Plan

LRP Legally Responsible Person

MOU Memorandum of Understanding

MPN Most Probable Number

MRP Monitoring and Reporting Program, R8-2014-0002

MS4 Municipal Separate Storm Sewer System

NPDES National Pollutant Discharge Elimination System

PCB Polychlorinated Biphenyl

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PEA Program Effectiveness Assessment

POTW Publicly-Owned Treatment Works

SARA Superfund Amendments and Reauthorization Act of 1986

SIC Standard Industrial Classification

SIP State Implementation Plan or, more formally, Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California

SSO Sanitary Sewer Overflow

SWAMP Surface Water Ambient Monitoring Program

SWRCB State Water Resources Control Board

TDS Total Dissolved Solids

TMDL Total Maximum Daily Load

USEPA United States Environmental Protection Agency

WEF Water Environment Federation

WDID Waste Discharger Identification

WDR Waste Discharge Requirements

WLA Waste Load Allocation

WQMP Water Quality Management Plan

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GLOSSARY

This Glossary has been prepared for the convenience of the reader. This Glossary is not an exhaustive catalog of terminology used in this Order. Additional terminology is defined in the Clean Water Act, USEPA regulations, and the California Water Code; all such terms not appearing below are incorporated into this Permit by reference.

Approved Signatory – A natural person who has been authorized by the Legally Responsible Person (see definition below) to sign, certify, and electronically submit Permit Registration Documents, Notices of Termination, and any other documents, reports, or information required by a Permit, the State or Regional Water Board, or U.S. EPA. The Approved Signatory must be one of the following:

1. For a corporation or limited liability company: a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
    a. a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation or limited liability company; OR
    b. the manager of the facility if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
2. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
3. For a municipality, State, Federal, or other public agency: a principal executive officer, ranking elected official, city manager, council president, or other public employee with managerial responsibility over the industrial facility (including, but not limited to, project manager, project superintendent, or resident engineer);
4. For the military: any military officer or Department of Defense civilian, acting in an equivalent capacity, who has been designated;
5. For a public university: an authorized university official;
6. For an individual: the individual, because the individual acts as both the Legally Responsible Person and the Approved Signatory.
7. For any type of entity not listed above: an authorized person with managerial authority over the industrial facility.

Authorized non-Storm Water Discharges – Non-storm water discharges authorized pursuant to an NPDES permit. Authorized non-storm water includes:

uncontaminated condensate from air conditioners, coolers, and compressors and from the outside storage of refrigerated gases or liquids; flows from riparian habitats and wetlands; passive footing and foundation drains or crawlspace pumps; non-commercial vehicle washing; de-chlorinated water from swimming pools; diverted stream flows; uncontaminated groundwater or spring water; landscape watering, provided that all pesticides, herbicides, and fertilizers have been applied according to the approved labeling; discharges from emergency fire-fighting activities; irrigation water/drainage; and waters otherwise not containing waste.

Basin Plan – The Water Quality Control Plan for the Santa Ana River Basin (1995) and subsequent amendments.

Beneficial Uses – The uses of water necessary for the survival or well-being of man, plants, and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals. “Beneficial Uses” that may be protected against include, but are not limited to: domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. Existing beneficial uses are uses that were attained in the surface or groundwater on or after November 28, 1975; and potential beneficial uses are uses that would probably develop in future years through the implementation of various control measures. “Beneficial Uses” are equivalent to “Designated Uses” under federal law (California Water Code Section 13050(f). Beneficial Uses for the Receiving Waters are identified in the Basin Plan.

Best Management Practices (“BMPs”) – Also known as storm water control measures. Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage (40 CFR § 122.2).

Bioaccumulate – The progressive accumulation of contaminants in the tissues of organisms to a higher concentration than in the surrounding environment. Bioaccumulation may occur through any route, including respiration, ingestion, or direct contact with contaminated water, sediment, pore water, or dredged material. Bioaccumulation occurs with exposure and is independent of the trophic level of the organism.

Bioassessment – The use of biological community information to evaluate the

biological integrity of a water body and its watershed. With respect to aquatic ecosystems, bio-assessment is the collection and analysis of samples of the benthic macro invertebrate community together with physical/habitat quality measurements associated with the sampling site and the watershed to evaluate the biological condition (i.e. biological integrity) of a water body.

Biological Integrity – Defined in Karr J.R. and D.R. Dudley. 1981. Ecological perspective on water quality goals. Environmental Management 5:55-68 as: "A balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of natural habitat of the region." Also referred to as 'ecosystem health'.

Biotreatment Control BMP – A sub-category of structural treatment control BMPs that employ biological uptake, transformation, or degradation of pollutants as their principal mechanism(s) of pollutant removal. Although a portion of the design capture volume or flow may incidentally infiltrate, evaporate, or evapotranspirate, the principal of operation involves the discharge of the treated storm water after detention in a densely-vegetated basin and/or passing through porous, biologically-active medium, dense vegetation or both.

California Toxics Rule – Numeric water quality criteria for certain Priority Toxic Pollutants and other water quality standards provisions promulgated by the USEPA for waters in the state of California. The California Toxics Rule is found in 40 CFR § 131.

Clean Water Act Section 402(p) – The federal statute, codified at 33 USC 1342(p), requiring municipal and industrial Co-permittees to obtain NPDES permits for their discharges of storm water.

Clean Water Act Section 303(d)-Listed Water Body – An impaired water body; a water body in which water quality does not meet applicable water quality standards and/or is not expected to meet water quality standards, even after the application of technology-based pollution controls required by the CWA.

Construction Site – Any project, including projects requiring coverage under the General Construction Permit, that involves soil disturbing activities including, but not limited to, clearing, grading, disturbances to ground such as stockpiling, and excavation.

Contamination – An impairment of the quality of waters of the State by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste whether or not waters of the State (inclusive of waters of the U.S.) are

affected. (California Water Code Section 13050(k))

Co-permittee(s) – Entities regulated under Order No. R8-2014-0002, inclusive of the Principle Co-permittee.

Criteria – The numeric values and the narrative standards that represent contaminant concentrations that are not to be exceeded in the receiving environmental media (surface water, groundwater, sediment) to protect beneficial uses.

Debris – Debris is defined as the remains of anything destroyed or broken, or accumulated loose fragments of rock.

Design Capture Flow – The calculated flow rate of storm water runoff, typically expressed as cubic feet per second ("cfs"), that must be treated in one or more structural treatment control BMPs according to the requirements of this Order.

Design Capture Volume – The calculated volume of storm water runoff, typically expressed in gallons or cubic feet, that must be treated in one or more structural treatment control BMPs according to the requirements of this Order.

Dry Weather – Weather in which there is no precipitation.

Effluent – Any discharge of water either to the receiving water or beyond the property boundary controlled by the discharger.

Effluent Limit/Limitation – Means any restriction on quantities, discharge rates, and concentrations of pollutants which are discharged from point sources into Waters of the United States, waters of the "contiguous zone," or the ocean. (40 CFR §122.2)

Emergency – A sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services (Public Resources Code Section 21060.3).

Environmentally Sensitive Area ("ESA") – An area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which would be easily disturbed or degraded by human activities and developments (Public Resources Code Section 30107.5). These areas include, but are not limited to: water bodies designated with the RARE beneficial use in the Basin Plan (Water Quality Control Plan for the Santa Ana River Basin [1995] and amendments); an area designated in the Ocean Plan as an Area of Special

Biological Significance; a water body listed as being impaired pursuant to CWA Section 303(d); areas designated as preserves or their equivalent under the Natural Communities Conservation Program (Multiple Species Habitat Conservation Plan, "MSHCP") within the Cities and Counties of Orange, Riverside and San Bernardino; or any area designated as such by a public agency with designation powers.

Erosion – The process whereby material (such as sediment) is detached and entrained in water or air and can be transported to a different location. Chemical erosion involves materials that are dissolved and removed and transported.

Executive Officer – The Executive Officer of the Santa Ana Regional Water Quality Control Board or delegated staff.

Grading – The cutting and/or filling of the land surface to a desired slope or elevation.

Harvest and Use Low-Impact Development Best Management Practice ("Harvest and Use LID BMP") – A sub-category of retention LID BMPs that uses harvest and use of the design capture volume or quantified portion thereof. The captured volume is typically used for non-potable uses such as toilet-flushing, industrial process supply, and landscape irrigation.

Hazardous Substance – Any substance that poses a threat to human health or the environment due to its toxicity, corrosiveness, ignitability, explosive nature or chemical reactivity; any substance designated under 40 CFR §116 pursuant to Section 311(b)(2) of the Clean Water Act (40 CFR § 122.2).

Hydrologic Condition of Concern ("HCOC") – A condition of a stream or channel, or some reach thereof; or a condition of some other water body (e.g. a vernal pool), where its hydrology is, or is proposed to be, altered by past or future development such that there has been, or could be, cumulatively significant adverse impacts to the physical or biological integrity of the water body. A condition where a proposed development site discharges directly or indirectly to a water body where such conditions are known or suspected to exist based on Substantial Evidence.

Illicit Discharge – Any discharge to a municipal separate storm sewer that is not composed entirely of storm water. This does not include discharges that occur pursuant to an NPDES permit, other than the MS4 Permit, and discharges resulting from fire-fighting activities (40 CFR § 122.26(b)(2)).

Impaired Water Body – Section 303(b) of the CWA requires each of California's Regional Water Quality Control Boards to routinely monitor and assess the quality of waters of their respective regions. If this assessment indicates that Beneficial Uses are not met, then that water body must be listed under Section 303(d) of the CWA as an Impaired Water Body.

Impervious Surface – That part of a developed parcel that has been modified to reduce

the land's natural ability to absorb and hold rainfall. It includes hard surfaces which cause water to run off the surface in greater quantities or at an increased rate of flow from the flow that existed under natural conditions prior to development. For example, common impervious surfaces include, but are not limited to, rooftops, walkways, patios, courtyards, driveways, parking lots, storage areas, concrete or asphalt paving, gravel roads, or any cleared, graded, graveled, paved, or compacted surfaces, or other surfaces which similarly impede the natural infiltration of surface water into the soil.

Infiltration – The flow of water into the soil by crossing the soil surface.

Infiltration Low-Impact Development Best Management Practice ("Infiltration LID BMP") – A type of retention LID BMP that employs infiltration at the principal mechanism for the loss of the design capture volume or quantified portion thereof.

Isopluvia – A line on a map drawn through geographical points having the same pluvial (rain, precipitation) index.

Land Disturbance – The clearing, grading, excavation, stockpiling, or other construction activity that results in the possible mobilization of soils or other pollutants into the MS4. This specifically does not include routine maintenance activity to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. This also does not include emergency construction activities required to protect public health and safety.

Legally Responsible Person – A person, company, agency, or other entity that is the operator of the facility(ies) covered by this Permit.

Load Allocations ("LA") – Distribution or assignment of TMDL pollutant loads to entities or sources for existing and future nonpoint sources, including background loads.

Low-Impact Development ("LID") – A storm water management and land development strategy that combines a hydrologically functional site design with pollution prevention measures to compensate for land development impacts on hydrology and water quality. LID techniques mimic the site predevelopment site hydrology by using site design techniques that store, infiltrate, evapotranspirate, bio-filter or detain runoff close to its source.

Maximum Extent Practicable ("MEP") - refers to a standard for implementation of storm water management programs. Section 402(p)(3)(B)(iii) of the Clean Water Act requires that municipal storm water permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

In practice, compliance with the MEP standard is evaluated by how well the Co-Permittees implement the "minimum measures" identified by EPA, including: (1) Public education and outreach on storm water impacts; (2) Public involvement/participation; (3) Illicit discharge detection and elimination; (4) Construction site storm water runoff control; (5) Post-construction storm water management in new development and redevelopment; and (6) Pollution prevention/good housekeeping for municipal operations. Collectively, these minimum measures are often referred to as "Best Management Practices" or BMPs. The MEP standard does not require Co-permittees to reduce pollutant concentrations below natural background levels, nor does it require further reductions where pollutant concentrations in the receiving water already meet water quality objectives.

MEP is a technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) that operators of MS4s must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve, typically by treatment or by a combination of source control and treatment control BMPs. MEP generally emphasizes pollution prevention and source control BMPs primarily (as the first line of defense) in combination with treatment methods serving as a backup (additional line of defense). MEP considers economics and is generally, but not necessarily, less stringent than BAT.

A definition for MEP is not provided either in the statute or in the regulations. Instead the definition of MEP is dynamic and will be defined by the following process over time: municipalities propose their definition of MEP by way of their urban runoff management programs. Their total collective and individual activities conducted pursuant to the urban runoff management programs becomes their proposal for MEP as it applies both to their overall effort, as well as to specific activities (e.g., MEP for street sweeping, or MEP for MS4 maintenance). In the absence of a proposal acceptable to the Regional Board, the Regional Board defines MEP.

In a memo dated February 11, 1993, entitled "Definition of Maximum Extent Practicable," Elizabeth Jennings, Senior Staff Counsel, SWRCB addressed the achievement of the MEP standard as follows:

> "To achieve the MEP standard, municipalities must employ whatever Best management Practices (BMPs) are technically feasible (i.e., are likely to be effective) and are not cost prohibitive. The major emphasis is on technical feasibility. Reducing pollutants to the MEP means choosing effective BMPs, and rejecting applicable BMPS only where other effective BMPS will serve the same purpose or the BMPS would not be technically feasible, or the cost would be prohibitive. In selecting BMPS to achieve the MEP standard, the following factors may be useful to consider:
>
> a. Effectiveness: Will the BMPS address a pollutant (or pollutant source) of concern?

b. Regulatory Compliance: Is the BMP in compliance with storm water regulations as well as other environmental regulations?
c. Public Acceptance: Does the BMP have public support?
d. Cost: Will the cost of implementing the BMP have a reasonable relationship to the pollution control benefits to be achieved?
e. Technical Feasibility: Is the BMP technically feasible considering soils, geography, water resources, etc?

The final determination regarding whether a municipality has reduced pollutants to the maximum extent practicable can only be made by the Regional or State Water Boards, and not by the municipal discharger. If a municipality reviews a lengthy menu of BMPS and chooses to select only a few of the least expensive, it is likely that MEP has not been met. On the other hand, if a municipal discharger employs all applicable BMPS except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit derived, it would have met the standard. Where a choice may be made between two BMPS that should provide generally comparable effectiveness, the discharger may choose the least expensive alternative and exclude the more expensive BMP. However, it would not be acceptable either to reject all BMPS that would address a pollutant source, or to pick a BMP based solely on cost, which would be clearly less effective. In selecting BMPS the municipality must make a serious attempt to comply and practical solutions may not be lightly rejected. In any case, the burden would be on the municipal discharger to show compliance with its permit. After selecting a menu of BMPS, it is the responsibility of the discharger to ensure that all BMPS are implemented."

Monitoring and Reporting Period – For purposes of this Order, the monitoring and reporting period is July 1 to June 30 with a reporting deadline of the following November 15th of each year for Annual Progress Reports.

Municipal Storm Water Conveyance System – (See Municipal Separate Storm Sewer System or MS4).

Municipal Separate Storm Sewer System ("MS4") – A conveyance or system of conveyances designed to collect and/or transport urban runoff (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, natural drainage features or channels, modified natural channels, man-made channels, or storm drains): (i) Owned or operated by a State, city town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes; (ii) Designated

or used for collecting of conveying storm water; (iii) Which is not a combined sewer; (iv) Which is not part of the Publicly Owned Treatment Works (POTW) as defined at 40 CFR § 122.2 (40 CFR § 126.26(b)(8)).

Most Probable Number ("MPN") – The most probable number (MPN) of coliform or fecal coliform bacteria per unit volume of a sample. It is expressed as the number of organisms which are most likely to have produced the laboratory results noted in a particular test.

National Pollutant Discharge Elimination System ("NPDES") Permit – A national program under section 402 of the Clean Water Act for regulation of discharges of pollutants from point sources to waters of the United States. Discharges of pollutants are prohibited unless specifically exempted or authorized by an NPDES permit.

Non-Storm Water – Non-storm water consists of all discharges to and from a storm water conveyance system that do not originate from precipitation events (i.e., all discharges from a conveyance system other than storm water). Non-storm water includes illicit discharges, prohibited discharges, and NPDES permitted discharges.

Nuisance – anything which meets all of the following requirements: 1) Is injurious to health, or is indecent, or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. 2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. 3) Occurs during, or as a result of, the treatment or disposal of wastes (CWC Section 13050(m)).

Party – Defined as an individual, association, partnership, corporation, municipality, state or federal agency, or an agent or employee thereof (40 CFR § 122.2).

Permit Area – Areas that are under the jurisdiction of the Santa Ana Regional Water Quality Control Board. These include north and northwestern portions of Orange County, north and western portions of Riverside County and western portions of San Bernardino County. See the Basin Plan for a detailed description of the Regional Board boundaries.

Permit Registration Documents ("PRDs") – Include the Notice of Intent, Storm Water Pollution Prevention Plan, Site Map and the appropriate filing fee necessary to authorize a discharge under general waste discharge requirements.

Person – A person is defined as an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof (40 CFR § 122.2).

pH - An indicator of the acidity or alkalinity of water.

Point Source – Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, runoff from concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Pollutant – Any agent that may cause or contribute to the degradation of water quality such that a condition of pollution or contamination is created or aggravated. It includes any type of industrial, municipal, and agricultural waste discharged into water. The term "pollutant" is defined in section 502(6) of the Clean Water Act as follows: "The term 'pollutant' means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water." It has also been interpreted to include water characteristics such as toxicity or acidity.

Pollution – The alteration of the quality of the Waters of the U.S. by waste, to a degree that unreasonably affects either of the following: 1) The waters for beneficial uses; or 2) Facilities that serve these beneficial uses. Pollution may include contamination (CWC Section 13050(l).

Pollution Prevention – Practices and processes that reduce or eliminate the generation of pollutants, in contrast to source control, treatment, or disposal.

Principal Permittee – The County of Orange

Priority Toxic Pollutant – A pollutant identified in the California Toxics Rule.

Receiving Waters – Waters of the United States within the Permit area.

Receiving Water Limitations – Waste discharge requirements issued by the Regional Board typically include both: (1) "Effluent Limitations" (or "Discharge Limitations") that specify the technology-based or water-quality-based effluent limitations; and (2) "Receiving Water Limitations" that specify the water quality objectives in the Basin Plan as well as any other limitations necessary to attain those objectives. In summary, the "Receiving Water Limitations" provision is the provision used to implement the requirement of CWA SECTION 301(b)(1)(C) that NPDES permits must include any more stringent limitations necessary to meet water quality standards.

Retention Low-Impact Development Best Management Practice ("Retention LID BMP") – A sub-category of structural treatment control BMPs that employ retention of the design capture volume or a quantified portion thereof. The retained volume is infiltrated, evaporated, evapotranspirated, or used (typically for non-potable uses).

Sediment – Soil, sand, and minerals washed from land into water. Sediment resulting from anthropogenic sources (i.e. human-induced land disturbance activities) is considered a pollutant. This Order regulates only the discharges of sediment from anthropogenic sources and does not regulate naturally-occurring sources of sediment. Sediment can destroy fish-nesting areas, clog animal habitats, and cloud waters so that sunlight does not reach aquatic plants.

Standard Industrial Classification ("SIC") Code – Four digit industry code, as defined by the US Department of Labor, Occupational Safety and Health Administration. The SIC Code is used to identify if a facility requires coverage under the Industrial Activities
Storm Water Permits.

State Implementation Plan ("SIP") – Formally known as the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California. The SIP implements the California Toxics Rule.

Source Control and Site Design BMPs – In general, activities or programs to educate the public or provide low-cost non-physical solutions, as well as facility design or practices aimed to limit the contact between pollutant sources and storm water or authorized non-storm water. Examples include: activity schedules, prohibitions of practices, industrial area sweeping, facility maintenance, detection and elimination of illegal and unauthorized discharges, and other non-structural measures. Facility design (structural) examples include providing attached lids to trash containers, canopies for fueling islands, secondary containment, or roof or awning over material and trash storage areas to prevent direct contact between storm water and pollutants

State Board – California State Water Resources Control Board

Storm Water – Storm water runoff, snowmelt runoff and surface runoff and drainage (40 CFR § 122.26(b)(13)).

Storm Water General Permits – General Permit-Industrial (State Board Order No. 97-03 DWQ, NPDES No. CAS000001), and General Permit-Construction (State Board

Order No. 2009-0009-DWQ, NPDES No. CAS000002).

Structural treatment control BMPs – Any system designed and constructed according to published and generally-accepted engineering criteria to remove pollutants from urban runoff. Pollutants are removed by simple gravity settling of particulate pollutants, filtration, biological uptake, media adsorption or any other physical, biological, or chemical process. In this Order, structural treatment control BMPs are classified as LID BMPs and non-LID BMPs. LID BMPs are further sub-classified into Retention LID BMPs and Biotreatment Control BMPs. All of these classes of structural treatment control BMPs are subject to general and specific requirements in this Order.

Substantial Evidence – Facts, reasonable assumptions predicated on facts, or expert opinion supported by facts. Substantial Evidence does not include argument, speculation, unsubstantiated opinion or narrative, or evidence which is clearly erroneous or inaccurate (Public Resources Code Section 21080(e)).

Storm Water Pollution Prevention Plan ("SWPPP") – A plan developed to minimize and control the discharge of pollutants from the industrial site to storm water conveyance systems. The plan shall identify pollutant sources, control measures for each pollutant source, good housekeeping practices and employee training programs.

Total Dissolved Solids ("TDS") – A measure of the total dissolved minerals in the water; the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR § 136 (40 CFR § 122.2)

Total Maximum Daily Load ("TMDL") – The maximum amount of a pollutant that can be discharged into a water body from all sources (point and non-point) and still maintain water quality standards. Under Clean Water Act § 303(d), TMDLs must be developed for all water bodies that do not meet water quality standards after application of technology-based controls.

TMDL Implementation Plan – Component of a TMDL that describes actions, including monitoring, needed to reduce pollutant loadings and a timeline for implementation. TMDL implementation plans can include a monitoring or modeling plan and milestones for measuring progress, plans for revising the TMDL if progress toward cleaning up the waters is not made, and the date by which water quality standards will be met (USEPA Final TMDL Rule: Fulfilling the Goals of the CWA, EPA 841-F-00-008, July 2000).

Toxicity – Adverse responses of organisms to chemicals or physical agents ranging from mortality to physiological responses such as impaired reproduction or growth anomalies.

Turbidity – The cloudiness of water quantified by the degree to which light traveling through a water column is scattered by the suspended organic and inorganic particles it contains. The turbidity test is reported in Nephelometric Turbidity Units (NTU) or Jackson Turbidity Units (JTU)

Uncontaminated Groundwater – Groundwater that is not impaired by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease

Urban Runoff – Urban runoff is defined as all flows in a storm water conveyance system from urban areas which include residential, commercial, industrial, and construction areas. Urban runoff consists of the following components: (1) storm water runoff and (2) authorized non-storm water discharges (See Section III of this Order). Urban runoff does not include runoff from undeveloped open space, feedlots, dairies, farms, and agricultural fields.

Waste – Waste includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal (CWC Section 13050(d)). Article 2 of CCR Title 23, Chapter 15 (Chapter 15) contains a waste classification system which applies to solid and semi-solid waste which cannot be discharged directly or indirectly to water of the state and which therefore must be discharged to land for treatment, storage, or disposal in accordance with Chapter 15. There are four classifications of waste (listed in order of highest to lowest threat to water quality): hazardous waste, designated waste, nonhazardous solid waste, and inert waste.

Waste Discharge Requirements ("WDR") – As defined in section 13374 of the California Water Code, the term "Waste Discharge Requirements" is the equivalent of the term "permits" as used in the Federal Water Pollution Control Act, as amended. The Regional Board usually uses the terms "permit" and "Order" to refer to Waste Discharge Requirements for discharges to Waters of the U.S.

Waste Load Allocations ("WLA") – WLA is the distribution or assignment of pollutant loads to entities or sources for existing and future point sources according to a TMDL; the maximum quantity of pollutants a discharger is allowed to release into a particular waterway, as set by a regulatory authority. Discharge limits usually are required for each specific water quality criterion being, or expected to be, violated.

Water Quality Assessment – An assessment conducted to evaluate the condition of water bodies which receive process wastewater, storm water and non-storm water discharges.

Water Quality Objective – The limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area [California Water Code Section 13050(h)).

Water Quality Standards – Consist of beneficial uses, water quality objectives to protect those uses, an anti-degradation policy, and policies for implementation. Water quality standards are found in Regional Water Quality Control Plans and statewide water quality control plans. The USEPA has also adopted water quality criteria (the same as objectives) for California in the National Toxics Rule and California Toxics Rule.

Waters of the State – Any surface water or groundwater, including saline waters, within the boundaries of the State (California Water Code Section 13050(e)). Waters of the State includes waters of the United States.

Waters of the United States – Waters of the United States can be broadly defined as navigable surface waters and tributaries thereto. Groundwater is not considered to be Waters of the United States. As defined in 40 CFR § 122.2, the Waters of the U.S. are defined as: (a) All waters, which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (b) All interstate waters, including interstate "wetlands;" (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) Which are used or could be used for industrial purposes by industries in interstate commerce; (d) All impoundments of waters otherwise defined as waters of the United States under this definition: (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition; (f) The territorial seas; and (g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA

Watershed – That geographical area which drains to a specified point on a water course, usually a confluence of streams or rivers; a drainage area, catchment, or river basin.

Wet Season – The period of October 1st through May 31st of each year, except where specifically defined otherwise in an approved TMDL Implementation Plan.

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Appendix A

Table A-1: Applicability of TMDL requirements to Co-permittees[1]

	San Diego Creek and Newport Bay Watershed TMDLs						San Gabriel River TMDL
Co-permittee	Nutrient TMDL	Fecal Coliform TMDL	Organochlorine Compounds TMDL	Diazinon & Chlorpyrifos TMDL	Toxics TMDL	Sediment TMDL	Coyote Creek Metals TMDL
County of Orange	X	X	X	X	X	X	X
Orange County Flood Control District	X	X	X	X	X	X	X
City of Anaheim							X
City of Brea							X
City of Buena Park							X
City of Costa Mesa	X	X	X	X	X	X	
City of Cypress							X
City of Fountain Valley							
City of Fullerton							X
City of Garden Grove							X
City of Irvine	X	X	X	X	X	X	
City of Laguna Hills	X		X	X	X		
City of Laguna Woods	X		X	X	X		
City of La Habra							X
City of La Palma							X
City of Lake Forest	X	X	X	X	X	X	
City of Los Alamitos							X
City of Newport Beach	X	X	X	X	X	X	
City of Orange	X	X	X	X	X		
City of Placentia							X
City of Santa Ana	X	X	X	X	X	X	
City of Seal Beach							X
City of Stanton							X
City of Tustin	X	X	X	X	X	X	
City of Yorba Linda							X[2]

[1] Table A-1 excludes the cities of Fountain Valley, Garden Grove, Huntington Beach, Villa Park, and Westminster; these Co-permittees do not discharge to waters for which there is an adopted TMDL.
[2] Only if the City of Yorba Linda discharges into Coyote Creek. See the Technical Report for further information.

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Appendix B

Waste Load Allocations for Nutrients in Newport Bay

The following waste load allocations ("WLAs") apply to discharges of urban runoff from MS4s owned or controlled by those Co-permitees discharging into Newport Bay.

The WLAs in this Appendix are based on the Nutrient TMDL. The Nutrient TMDL has been approved by Santa Ana Regional Water Quality Control Board, the State Water Resources Control Board, the Office of Administrative Law ("OAL") and USEPA. The Nutrient TMDL was adopted by the Santa Ana Regional Water Quality Control Board in Resolution No. 98-9 (amended by Resolution No. 98-100). The TMDL was approved by the Office of Administrative Law on February 10, 1999 and April 16, 1999.

I. Nitrogen, Total[1]
   A. Discharges of urban runoff in Reach 2 of San Diego Creek (above Jeffrey Road) must not transport more than 5.5 pounds of total nitrogen per day.
      1. This WLA only applies to flow less than 25 cfs and those flows above 25 cfs that are not the result of precipitation.
      2. Flow must be measured in San Diego Creek at Culver Drive.
   B. Discharges of urban runoff in San Diego Creek at Campus Drive must not transport more than 55,442 pounds of total nitrogen into Newport Bay each "wet season".
   C. Discharges of urban runoff in San Diego Creek at Campus Drive must not transport more than 16,628 pounds of total nitrogen into Newport Bay each "dry season".
      1. For the purposes of both of these Waste Load Allocations for total nitrogen, "wet season" shall mean the period from October 1 to March 31 of each year. "Dry season" shall mean the period from April 1 to September 31 of each year.
      2. The wet season Waste Load Allocation applies to discharges where the mean daily flow rate in San Diego Creek is less than 50 cubic feet per second ("cfs") and to mean daily flow rates in excess of 50 cfs that are not caused by precipitation.

II. Phosphorous, Total
   Discharges of urban runoff must not transport into Newport Bay more than 2,960 pounds of total phosphorous per year.

[1] Total nitrogen WLAs are based on 67 non-storm days per season.

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Appendix C

Waste Load Allocations for Fecal Coliform in Newport Bay

The following waste load allocations ("WLAs") apply to discharges of urban runoff from MS4s owned or controlled by those Co-permitees discharging into Newport Bay.

The WLAs in this Appendix are based on the Fecal Coliform TMDL. The Fecal Coliform TMDL has been approved by Santa Ana Regional Water Quality Control Board, the State Water Resources Control Board, the Office of Administrative Law ("OAL") and USEPA. The Fecal Coliform TMDL was adopted by the Santa Ana Regional Water Quality Control Board in Resolution No. 99-10 The TMDL was approved by OAL on December 24, 1999 and February 28, 2000.

I. Fecal Coliform

A. The geometric mean for the following must be calculated based on a minimum of 5 representative samples of urban runoff taken over a 30-day period.

B. As soon as possible, but no later than December 30,2014:

1. The geometric mean must be less than 200 organisms/100mL; and
2. Of the representative samples taken, not more than 10% can exceed 400 organisms/100mL for any 30-day period.

C. As soon as possible, but no later than December 30, 2019:

1. The monthly median of representative samples of urban runoff must be less than 14 most probable number ("MPN")/100 mL; and
2. Of the representative samples taken, not more than 10% can exceed 43 MPN/100 mL.

Appendix D

Load Allocations and requirements for Sediment in Upper Newport Bay

The following load allocations ("LAs") and requirements apply to discharges of urban runoff from MS4s owned or controlled by those Co-permitees discharging into Upper Newport Bay.

The LAs and requirements in this Appendix are based on the Sediment TMDL. The Sediment TMDL has been approved by Santa Ana Regional Water Quality Control Board, the State Water Resources Control Board, the Office of Administrative Law ("OAL") and USEPA. The Sediment TMDL was adopted by the Santa Ana Regional Water Quality Control Board in Resolution No. 98-101. The TMDL was approved by OAL on February 2, 1999 and April 16, 1999.

I. Sediment in discharges of urban runoff must not alter the distribution of habitat types in the 700-acre Upper Newport Bay Ecological Reserve, in Table D-1 below or as revised by the Department of Fish and Wildlife, by more than 1%.

Table D-1: Baseline Distribution of Habitat Types in the Upper Newport Bay Ecological Reserve

Habitat Type	Acres	Permissible Change (acres)
Marine aquatic	210	2.1
Mudflat	214	2.1
Salt marsh	277	2.8
Riparian	31	3.1

II. The depths of the Unit 1 and 2 Sediment Basins (a.k.a. Unit I/III and Unit II) must be maintained at a minimum of 7-feet below mean sea level.

III. Bathymetric and vegetation surveys must be performed no less than once every three years, or as agreed to by the Executive Officer, in a manner to determine compliance with the above requirements for sediment.

1. Bathymetric and vegetation surveys must be performed within one year following any monitoring period in which monitoring at San Diego Creek at Campus Drive (Site ID: SDMF05) shows that more than 250,000 tons of sediment were discharged into Newport Bay.

2. Bathymetric and vegetation surveys must be conducted by July 1of each year that they are performed, and must be submitted by December 31 of the same year.

IV. Sediment control measures must be effectively implemented by the Co-permitees such that Upper Newport Bay, including In-Bay Sediment Basins 1 and 2, do not need to be dredged more frequently than once every 10 years. The Executive Officer is authorized to grant exceptions to this requirement on the basis of extreme rainfall conditions.

V. All in-channel and foothill sediment-control basins tributary to Newport Bay must have an available sediment capacity that is 50% or more of each facilities' design capacity prior to November 15th of each year.

Appendix E

Waste Load Allocations for Organochlorine Compounds in Newport Bay and San Diego Creek

The following waste load allocations ("WLAs") apply to discharges of urban runoff from MS4s owned or controlled by those Co-permitees discharging into Newport Bay, Rhine Channel and San Diego Creek as indicated.

The WLAs in this Appendix are based on the Organochlorine Compound TMDL. The Organochlorine Compound TMDL has been approved by Santa Ana Regional Water Quality Control Board, the State Water Resources Control Board, the Office of Administrative Law ("OAL") and USEPA. The Organochlorine Compound TMDL was adopted by the Santa Ana Regional Water Quality Control Board in Resolution No. R8-2011-0037 (modifying Resolution No. R8-2007-0024). The TMDL was approved by OAL on July 26, 2013.

I. Chlordane
   A. As soon as possible, but no later than December 31, 2015, discharges of urban runoff must not transport more than 30.1 grams of chlordane into Upper Newport Bay per year.
   B. As soon as possible, but no later than December 31, 2015, discharges of urban runoff must not transport more than 11.0 grams of chlordane into Lower Newport Bay per year.
   C. Discharges of urban runoff must not transport more than 0.1 gram of chlordane into the Rhine Channel per year.

II. DDT, Total
   A. Discharges of urban runoff must not transport more than 51.8 grams of total DDT into Upper Newport Bay per year.
   B. As soon as possible, but no later than December 31, 2015, discharges of urban runoff must not transport more than 19.1 grams of total DDT into Lower Newport Bay per year.
   C. As soon as possible, but no later than December 31, 2020, discharges of urban runoff must not transport more than 128.3 grams of total DDT into San Diego Creek and its tributaries per year.
   D. Discharges of urban runoff must not transport more than 0.7 gram of total DDT into the Rhine Channel per year.

III. Dieldrin
   Discharges of urban runoff must not transport more than 0.13 gram of Dieldrin into the Rhine Channel per year.

IV. PCB

A. Discharges of urban runoff must not transport more than 29.8 grams of PCBs into Upper Newport Bay per year.
B. As soon as possible, but no later than December 31, 2015, discharges of urban runoff must not transport more than 78.1 grams of total PCBs into Lower Newport Bay per year.
C. Discharges of urban runoff must not transport more than 4.1 grams of total PCB into the Rhine Channel per year.

IV. Toxaphene

As soon as possible, but no later than December 31, 2020, discharges of urban runoff must not transport more than 1.9 grams of Toxaphene into San Diego Creek and its tributaries per year.

Appendix F

Waste Load Allocations for the Diazinon & Chlorpyrifos TMDL for Upper Newport Bay and San Diego Creek

The following waste load allocations ("WLAs") apply to discharges of urban runoff from MS4s owned or controlled by those Co-permitees discharging into Upper Newport Bay or San Diego Creek as indicated.

The WLAs in this Appendix are based on the Diazinon & Chlorpyrifos TMDL. The Diazinon & Chlorpyrifos TMDL has been approved by Santa Ana Regional Water Quality Control Board, the State Water Resources Control Board, the Office of Administrative Law ("OAL") and USEPA. The Diazinon & Chlorpyrifos TMDL was adopted by the Santa Ana Regional Water Quality Control Board in Resolution No. R8-2003-0039. The TMDL was approved by OAL on January 5, 2004 and February 13, 2004.

I. Chlorpyrifos
   A. The acute concentrations or CMC (24-hour average concentration) of Chlorpyrifos in representative samples of urban runoff discharged into Upper Newport Bay must not exceed 18 ng/L.
   B. The chronic concentrations or CCC (4-consecutive day average) of Chlorpyrifos in representative samples of urban runoff discharged into Upper Newport Bay must not exceed 8.1 ng/L.
   C. The acute concentrations or CMC (24-hour average concentration) of Chlorpyrifos in representative samples of urban runoff in San Diego Creek must not exceed 18 ng/L.
   D. The chronic concentration or CCC (4-consecutive day average) of Chlorpyrifos in representative samples of urban runoff in San Diego Creek must not exceed 12.6 ng/L.

II. Diazinon
   A. The acute concentrations or CMC (24-hour average concentration) of Diazinon in representative samples of urban runoff in San Diego Creek must not exceed 72 ng/L.
   B. The chronic concentrations or CCC (4-consecutive day average) of Diazinon in representative samples of urban runoff in San Diego Creek must not exceed 45 ng/L.

Appendix G

Waste Load Allocations for Toxic Pollutants (Metals) into San Diego Creek, Rhine Channel, and Newport Bay

The following waste load allocations ("WLAs") apply to discharges of urban runoff from MS4s owned or controlled by those Co-permitees discharging into San Diego Creek and Newport Bay as indicated.

The WLAs in this Appendix are based on the Toxic Pollutants (Metals) TMDL. The Toxic Pollutants TMDL has been approved by Santa Ana Regional Water Quality Control Board, the State Water Resources Control Board, the Office of Administrative Law ("OAL") and USEPA. The Toxic Pollutants TMDL was adopted by the Santa Ana Regional Water Quality Control Board in Resolution No. R8-2003-0039. The TMDL was promulgated by USEPA on June 17, 2002.

I. Cadmium, Dissolved
   A. Discharge of urban runoff must not transport more than 9,589 pounds of dissolved cadmium into Upper Newport Bay per year.
   B. The acute concentration or CMC (24-hour average concentration) of dissolved cadmium in representative samples of urban runoff discharged into Upper Newport Bay must not exceed 42 µg/L.
   C. The chronic concentration or CCC (4-day or 96-hour average) of dissolved cadmium in representative samples of urban runoff discharged into Upper Newport Bay must not exceed 9.3 µg/L.
   D. Discharges of urban runoff, measured in San Diego Creek at Campus Drive, in the flow categories shown in Table G-1 below, must not exceed the concentrations shown.

Table G-1: Waste Load Allocations for Cadmium, Dissolved

	Base Flows <20cfs	Small Flows 21 to 181 cfs	Medium Flows 182 to 815 cfs	Large Flows >815 cfs
	Hardness: 400mg/L	Hardness: 322 mg/L	Hardness: 236 mg/L	Hardness: 197 mg/L
Acute (µg/L)	19.1	15.1	10.8	8.9
Chronic (µg/L)	6.2	5.3	4.2	--

II. Chromium

Discharges of urban runoff must not transport more than 5.66 kilograms of chromium into the Rhine Channel per year.

III. Copper, Dissolved

A. Discharges of urban runoff must not transport more than 3,043 pounds of dissolved copper into Newport Bay per year.
B. The acute or criterion maximum concentration ("CMC") (24-hour average concentration) of dissolved copper in representative samples of urban runoff discharged into Newport Bay must not exceed 4.8 µg/L.
C. The chronic or criterion continuous concentration ("CCC") (4 consecutive day or 96-hour average concentration) of dissolved copper in representative samples of urban runoff discharged into Newport Bay must not exceed 3.1 µg/L.
D. Discharges of urban runoff, measured in San Diego Creek at Campus Drive, in the flow categories shown in Table G-2 below must not exceed the following concentrations:

Table G-2: Waste Load Allocations for Copper, Dissolved

	Base Flows <20cfs	Small Flows 21 to 181 cfs	Medium Flows 182 to 815 cfs	Large Flows >815 cfs
	Hardness: 400mg/L	Hardness: 322 mg/L	Hardness: 236 mg/L	Hardness: 197 mg/L
Acute (µg/L)	50	40	30.2	25.5
Chronic (µg/L)	29.3	24.3	18.7	--

IV. Lead, Dissolved

A. Discharges of urban runoff must not transport more than 17,638 pounds of dissolved lead into Newport Bay per year.
B. The acute concentration or CMC (24-hour average concentration) of dissolved lead in representative samples of urban runoff discharged into Newport Bay must not exceed 210 µg/L.
C. The chronic concentration or CCC (4 consecutive day or 96-hour average concentration) of dissolved lead in representative samples of urban runoff discharged into Newport Bay must not exceed 8.1 µg/L.
D. Discharges of urban runoff, measured in San Diego Creek at Campus Drive and in the flow categories shown in Table G-3 below, must not exceed the following concentrations:

Table G-3: Waste Load Allocations for Lead, Dissolved

	Base Flows ≤20cfs	Small Flows 21 to 181 cfs	Medium Flows 182 to 815 cfs	Large Flows >815 cfs
	Hardness: 400mg/L	Hardness: 322 mg/L	Hardness: 236 mg/L	Hardness: 197 mg/L
Acute (µg/L)	281	224	162	134
Chronic (µg/L)	10.9	8.8	6.3	--

V. Mercury

Discharges of urban runoff must not transport more than 0.0171 kilogram of mercury into the Rhine Channel per year.

VI. Selenium

A. The pollutant loads of selenium and flow, specified below in Table G-4, must be measured in San Diego Creek at Campus Drive. Pollutant loads must be calculated to exclude loads attributed to allocated sources specified in the USEPA TMDL for Toxic Pollutants for San Diego Creek and Newport Bay.

B. Discharges of urban runoff, in the in the flow categories in Table G-4 below, must not transport the pollutant loads in excess of the Waste Load Allocations shown in Table G-4 on an annual basis.

Table G-4: Waste Load Allocations for Selenium

	Base Flows <20cfs	Small Flows 21 to 181 cfs	Medium Flows 182 to 814 cfs	Large Flows >814 cfs	Annual Total
Maximum Permissible Annual Load (lbs./year)	0.4	1.0	1.0	5.3	7.6

VII. Zinc, Dissolved

A. Discharges of urban runoff must not transport more than 174,057 pounds of dissolved zinc into Newport Bay per year.

B. The acute concentration or CMC (24-hour average concentration) of dissolved zinc in representative samples of urban runoff discharged into Newport Bay must not exceed 90 µg/L.

C. The chronic concentration or CCC (4 consecutive day or 96-hour average concentration) of dissolved zinc in representative samples of urban runoff discharged into Newport Bay must not exceed 81 µg/L.

D. Discharges of urban runoff, measured in San Diego Creek at Campus Drive, in the flow categories shown in Table G-5 below must not exceed the concentrations shown.

Table G-5: Waste Load Allocations for Zinc, Dissolved

	Base Flows <20cfs	Small Flows 21 to 181 cfs	Medium Flows 182 to 815 cfs	Large Flows >815 cfs
	Hardness: 400mg/L	Hardness: 322 mg/L	Hardness: 236 mg/L	Hardness: 197 mg/L
Acute (µg/L)	379	316	243	208
Chronic (µg/L)	382	318	224	--

APPENDIX H

Waste Load Allocations for Coyote Creek

The following waste load allocations ("WLAs") apply to discharges of urban runoff from MS4's owned or controlled by those Co-permitees discharging into Coyote Creek. These requirements are based on the San Gabriel River Metals TMDL promulgated by the USEPA on March 26, 2007.

Runoff samples and flow volumes must be taken at flow gauge station F354-R, located just above the Long Beach Water Reclamation Plant. The daily storm volume must be generated by a rain event that produces a peak flow that is equal or greater than 156-cfs.

I. Copper
   A. Discharges of urban runoff in Coyote Creek must not transport more than 0.941 kilogram of total recoverable copper per day during dry weather.
   B. The mass of total recoverable copper in wet weather urban runoff that is transported daily in Coyote Creek must not exceed 24.71 µg/L multiplied by the daily storm volume in liters.

II. Lead

   The mass of total recoverable lead in wet weather urban runoff that is transported daily in Coyote Creek must not exceed 96.99 µg/L multiplied by the daily storm volume in liters.

III. Zinc

   The mass of total recoverable zinc in wet weather urban runoff that is transported daily in Coyote Creek must not exceed 144.57 µg/L multiplied by the daily storm volume in liters.

Attachment A

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

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MONITORING AND REPORTING PROGRAM NO. R8-2014-0002

for

Order No. R8-2014-0002
NPDES Permit No. CAS618030

Orange County Flood Control District, the County of Orange
And
The Incorporated Cities therein within the Santa Ana Region

Area-wide Urban Storm Water Runoff

June XX, 2014

Revision No.	Date Requested	Approval Date

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I. General

A. The requirements of this Monitoring and Reporting Program ("MRP"), as presented or later amended, may be met through the Co-permittees' participation in state-wide, national, regional or local monitoring programs, subject to the discretion of the Executive Officer.
B. The Executive Officer is authorized to review and approve proposed changes to this MRP. The Executive Officer will provide a minimum of 30-days for public review prior to approving any proposed changes.
C. To avoid duplication of effort, monitoring work performed by parties other than the Co-permittees may be substituted for work described in the MRP provided that the work meets the requirements of the MRP and Order No. R8-2014-0002.
D. The Co-permittees may supplement monitoring data that is required to be collected by this MRP and subsequent amendments with other valid data sources for the purpose of improving any related analysis.
E. Except for Priority Toxic Pollutants identified in the California Toxics Rule, all sample collection, handling, storage, and analysis must be completed in conformance with 40 CFR Part 136; with adopted guidance developed by the State Water Resources Control Board pursuant to California Water Code Section 13383.5; or with other methods satisfactory to the Executive Officer.
F. Unless otherwise specified differently, the Minimum Levels ("MLs") published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries if California (State Implementation Plan or "SIP") must be used for the analyses of all samples.
G. The term "acute", as used in Order No R8-2014-0002 and the MRP, shall have the same meaning as "criterion maximum concentration" or "CMC" (24-hour average concentration).
H. The term "chronic", as used in Order No R8-2014-0002 and the MRP, shall have the same meaning as "criterion continuous concentration" or "CCC" (4-day or 96-hour average concentration).
I. Each Co-permittee is responsible for the accuracy and completeness of the monitoring program(s) and related products for the watershed(s) to which the Co-permittee discharges. However, the PRINCIPAL PERMITTEE may develop and implement those programs and submit related work products on behalf of the Co-permittees.
J. Unless paper copies are expressly requested by Regional Board staff, all reports and submittals must be provided in an electronic format consistent with written guidance provided by the Executive Officer.

II. Water Quality Monitoring

A. Goals

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The Co-permittees must develop and implement an effective water quality monitoring program to achieve the following goals:

1. To develop useful information in support an effective program to control the discharge of pollutants in urban runoff.
2. To characterize the condition of water quality in receiving waters with respect to water quality standards; identify trends; and identify pollutants found in urban runoff that may adversely affect the beneficial uses of the receiving waters.
3. To characterize pollutant loads or concentrations in discharges from the MS4s relative to applicable waste load allocations and identify and quantify significant water quality problems related to urban runoff.
4. To identify and quantify other sources of pollutants to the maximum extent possible (e.g. atmospheric deposition, legacy pollutants, etc.) that may adversely affect the beneficial uses of the receiving waters.
5. To identify the sources of, and to prohibit illicit discharges.
6. To identify those waters, which without additional action to control pollution from urban runoff, cannot reasonably be expected to attain or maintain applicable water quality standards necessary to sustain the beneficial uses designated in the Basin Plan.
7. To objectively evaluate the effectiveness of BMPs implemented according to the Co-permittees' related programs, including, to the extent possible, quantifying the reasonably achievable reductions of pollutants in discharges or the receiving waters that are attributable to the BMP(s).
8. To evaluate and describe the costs and benefits of BMPs, implemented according to the Co-permittees' related programs, to the public and stakeholders.

B. Water Quality Monitoring Plan Development

1. The Co-permittees must prepare a draft Water Quality Monitoring Plan according to the goals, requirements, and specifications described in this Section (Section II.), State Board Resolution No. 2012-0012, and Order No. R8-2014-0002. The initial draft Plan must be submitted for approval to the Executive Officer within 6 months of the adoption of Order No. R8-2014-0002.
2. The Water Quality Monitoring Plan must describe processes for determining compliance with each of the Waste Load Allocations ("WLAs") and requirements in Appendices B through H of Order No. R8-2014-0002. The Plan must include cycles of monitoring, analysis, and reporting for all of the WLAs.
    a. A complete cycle must be as short as practicable, comply with applicable TMDL deadlines and assessment periods, or otherwise must not exceed once every 5 years.
    b. A complete cycle should consider the availability of data and a reasonable period during which BMPs may affect water quality.

c. Any required data collection and analyses must comply with those specified in the relevant TMDL, including averaging and assessment periods, where provided

3. The Water Quality Monitoring Plan must also include, at a minimum, descriptions of the locations of ID/IC, receiving, and outfall monitoring locations; an explanation for the locations' selection; the sampling frequencies; parameters to be sampled; descriptions of sampling methods; and the data analysis and reporting schedule (see Subsection K below).
4. The Water Quality Monitoring Plan must be written in an instructive manner for the benefit of persons responsible for its implementation.
5. Until the initial draft Water Quality Monitoring Plan is approved, the Co-permittees must continue monitoring as described in the 2013-2014 Annual Progress Report. Changes to the monitoring are prohibited except with the approval of the Executive Officer.
6. By August 1 of each year following the approval of the initial Water Quality Monitoring Plan, the Co-permittees must submit subsequent proposed changes to the Plan for approval by the Executive Officer. The Executive Officer will provide a minimum of 30-days for public review and comment on the proposed changes. If no changes are proposed, the Executive Officer must be notified so in writing.
7. Except for inconsequential grammatical or technical corrections, the Water Quality Monitoring Plan may be amended by the Co-permittees only with the approval of the Executive Officer.
8. The Co-permittees must fully implement the Water Quality Monitoring Plan and any subsequent changes as approved by the Executive Officer.
9. The approved Water Quality Monitoring Plan, as amended, must be posted for public access at ocwatersheds.com or using another media outlet acceptable to the Executive Officer. The posted Plan must be full, true, and accurate.

C. General Water Quality Monitoring Requirements

1. The Water Quality Monitoring Plan must be designed to achieve the following:
   a. Determine if discharges of urban runoff exceed water quality standards or, where substitutive, each of the waste load allocations ("WLAs") found in Appendices A through G of Order No. R8-20014-0002. These determinations must be made according to scheduled cycles of monitoring, analysis, and reporting that will be developed according to Section XVIII.G. of the Order.
   b. Objectively evaluate the effectiveness of the best management practices being implemented in the watersheds to meet the respective waste load allocations.
2. The sampling method and practice must minimize bias.

3. Water quality parameters that are tested using valid field instruments are not required to be analyzed by a laboratory.
4. The Co-permittees must employ sample collection methods that support regional comparisons of data, unless site conditions make alternate methods necessary.
5. For each monitoring location and event, the Co-permittees must record observed conditions or circumstances that may influence monitoring results or affect conclusions made from the monitoring data.

D. Outfall Monitoring Requirements

The water quality monitoring program must include representative monitoring of urban runoff from MS4 outfalls under storm and dry-weather conditions.

1. The Co-permittees must identify representative outfall monitoring locations in the permit area.
2. Each outfall monitoring location must be sampled every two years on an alternating basis; some sites may be sampled every odd year while the remainder will be sampled every even year. The nature, number and distribution of samples are described below in this Section.
3. Stream gauges, or equally-effective methods, must be deployed during sampling events for the purpose of estimating mass loading of pollutants at each of the monitoring locations and for calculating flow-weighted event mean concentrations.
4. The Co-permittees must sample urban runoff produced by three separate storm events ("wet-weather sample") per season. The Executive Officer may allow exceptions to sampling three storm events when climatic conditions create good cause.
    a. The Co-permittees must make a reasonable effort so that one of the three sampled storm events is of the first storm water runoff of each season.
        i. A sample for this event must be collected from each outfall monitoring location. Each sample must represent the "first flush" of the storm and consist of a composite of discrete samples.
        ii. A second sample for this event must be collected after the storm's first hour; this sample must consist of a composite of discrete samples collected every two (2) hours during a 96-hour period or until flow is insufficient to allow sampling.
        iii. Except for the "first flush" samples, discrete samples must be composited into a single sample.
    b. For storm events occurring after the first storm event of the season, a minimum of three (3) composite samples must be collected at each outfall monitoring location.

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i. Each sample must consist of a composite of discrete samples collected hourly during a 24-hour period or until flow is insufficient to allow sampling.
ii. The 24-hour period must begin two hours after “first flush” sampling is initiated.

c. The Co-permittees must provide the date and duration of the storm event(s) sampled, rainfall estimates of the storm event which generated the sampled discharge, and the duration between the storm event sampled and the end of the previous measurable storm event.

5. The Co-permittees must sample outfalls biannually (2 times per year) during sampling years under dry-weather conditions (“dry-weather sample”) at each outfall monitoring location. Each sample must consist of a composite of discrete samples collected each hour during a 24-hour period.
6. All wet-weather and dry-weather samples must be tested for the parameters indicated in Table 1 below.
7. In addition to the parameters indicated in Table 1, samples must be tested in the manner as follows:
   a. Diazinon, chlorpyrifos, malathion, and dimethoate must be tested for in dry-weather samples that must be taken monthly from outfall monitoring locations discharging into Newport Bay.
   b. A Priority Pollutant scan must be completed on wet-weather samples taken of runoff from the first storm of the season each year.
   c. Glyphosate must be tested for in dry-weather samples taken from monitoring sites that are outfalls dominated by urban runoff, as opposed to rising groundwater.
   d. Additional parameters that are known or suspected to contribute to the impairment of the beneficial uses of the receiving waters must also be tested for at the direction of the Executive Officer.

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Table 1: Outfall Monitoring Parameters

Parameter		Wet-weather samples	Dry-weather samples	Sediment samples
Nutrients	Nitrate plus nitrite	X	X	
	Total ammonia	X	X	
	Total Kjeldahl nitrogen	X	X	
	Total phosphate	X	X	
	Orthophosphate	X	X	
Dissolved organic carbon		X		
Total organic carbon		X	X	X
Total suspended solids		X	X	
Volatile suspended solids		X	X	
Chloride		X	X	X
Sulfate		X	X	X
Turbidity		X	X	
pH		X	X	X
Oil and grease			X	
Temperature		X	X	
Dissolved oxygen		X	X	
Electrical conductivity		X	X	
Hardness		X	X	
Particle size distribution				X
Total and dissolved heavy metals	Cadmium	X	X	X
	Chromium	X	X	X
	Copper	X	X	X
	Lead	X	X	X
	Mercury	X	X	X
	Nickel	X	X	X
	Selenium	X	X	X
	Silver	X	X	X
	Zinc	X	X	X
hosphate pesticide	Chlorpyrifos	X		
	Diazinon	X		

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	Dimethoate	X		
	Malathion	X		
Bacterial indicators	Total coliform	X	X	
	Fecal coliform	X	X	
	Enterococcus	X	X	

E. Receiving Waters Monitoring Requirements

The Water Quality Monitoring Program must include monitoring in the receiving waters of the outfalls monitored in Section II.C. above.

1. Each receiving water monitoring location must be sampled every two years on an alternating basis; some sites may be sampled every odd year while the remainder will be sampled every even year. The nature, number and distribution of samples are described below in this Section.
2. The Co-permittees must sample sediment under dry-weather conditions ("sediment sample") quarterly (4 times per year) during sampling years at receiving water monitoring locations to be specified in the Water Quality Monitoring Plan.
3. All sediment samples must be tested for the parameters indicated in Table 1 above.
4. In addition to the parameters indicated in Table 1, samples must be tested in the manner as follows:
    a. Sediment samples taken from Newport Bay must be tested for Total DDT, Dieldrin, Chlordane, PCBs, and Toxaphene.
    b. Additional parameters that are known or suspected to contribute to the impairment of the beneficial uses of the receiving waters must also be tested for at the direction of the Executive Officer.
5. Wet-weather sampling events may not be consecutive and must be separated by a minimum of two (2) days of dry weather (no precipitation).
6. Samples taken for receiving water monitoring must be tested for the parameters shown in Table 2 below and in the following manner:
    a. Measurements of specific conductance, pH, temperature, and dissolved oxygen must be taken of the water column's profile at one-meter increments, from the water surface to the bottom of each monitoring location.
    b. Water samples that are tested for nutrients must be collected near the surface of the water at the monitoring location.
    c. Water samples that are tested for metals, pesticides, total and dissolved organic carbon, and toxicity must consist of a composite of samples collected at the monitoring location in a manner that represents the average concentrations in the water column.

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7. Wet-weather, dry-weather, and sediment samples taken from Upper Newport Bay must also be tested for selenium.
8. Sediment samples taken from representative receiving water monitoring locations must also be tested once each year for benthic infauna using methods in the Region 8 Storm Water Ambient Monitoring Program ("SWAMP") Field Operations Manual.
9. Sediment samples taken from monitoring locations in Upper Newport Bay must also be tested for organochlorine pesticides and PCBs.
10. Additional parameters that are known to contribute to the impairment of the beneficial uses of the receiving waters must also be tested for at the direction of the Executive Officer.

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Table 2: Parameters for receiving water monitoring

Parameter		Wet-weather samples	Dry-weather samples	Sediment samples
Nutrients	Nitrate plus nitrite	X	X	
	Total ammonia	X	X	
	Total Kjeldahl nitrogen	X	X	
	Total phosphate	X	X	
	Orthophosphate	X	X	
Dissolved organic carbon			X	
Total organic carbon		X	X	X
Total suspended solids		X	X	
Volatile suspended solids		X	X	
Turbidity		X	X	
pH		X	X	X
Oil and grease			X	
Temperature		X	X	
Dissolved oxygen		X	X	
Electrical conductivity		X	X	
Hardness		X	X	
Particle size distribution				X
Total and dissolved heavy metals	Cadmium	X	X	X
	Chromium	X	X	X
	Copper	X	X	X
	Lead	X	X	X
	Mercury	X	X	X
	Nickel	X	X	X
	Silver	X	X	X
	Zinc	X	X	X
Organophosphate pesticides	Chlorpyrifos		X	X
	Diazinon		X	X
Bacterial indicators	Total *coliform*	X	X	
	Fecal *coliform*	X	X	

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	Enterococcus	X	X	
Glyphosate		X	X	

F. Toxicity Testing

The water quality monitoring program must include toxicity testing, analyzed using USEPA's Test of Significant Toxicity approach[1].

1. Whole effluent toxicity testing must be performed twice per season on *wet-weather samples* taken from representative outfall monitoring locations, using *Ceriodaphnia*, sea urchin fertilization, and mysid survival and growth as follows:
    i. Toxicity testing must be performed on *wet-weather samples* representing the "first-flush" of the first storm of the season (See Provision II.D.4.a.i. above).
    ii. Toxicity testing must also be performed on *wet-weather samples* taken from the second and third sampling events that represent the 24-hour period following the "first-flush" (See Provision II.D.4.b. above).
2. Whole effluent toxicity testing must be performed twice per season on *wet-weather samples* taken from monitoring locations using sea urchin fertilization, sea urchin embryo development, and mysid survival and growth.
3. All Toxicity tests of *wet-weather samples* must be performed using 100%, 50%, 25%, 12.5%, and 6.25% dilutions.
4. Whole effluent toxicity testing must be performed on *dry-weather samples* using *Ceriodaphnia*, *Selanastrum*, and *Hyalella azteca* as follows:
    a. Twice each year on samples taken from monitoring locations in Carbon Creek Coyote Creek East Garden Grove-Wintersburg Channel, Bolsa Chica Channel, and Fullerton Creek.
    b. Four times per year, on a quarterly basis, on samples taken from monitoring locations in Peters Canyon Wash, San Diego Creek at Campus Drive and Harvard Avenue, and Santa Ana Delhi Channel.
5. Whole effluent toxicity testing must be performed quarterly (four times per year) on representative *dry-weather* samples in Newport Bay using sea urchin fertilization, sea urchin embryo development, and/or mysid survival and growth.
6. All Toxicity tests of *dry-weather samples* must be performed using 100% and 50% dilutions. If Toxicity tests in the 100% and 50% dilutions produce a zero percent survival of the test organisms within the first hour, additional dilutions must be tested using the same test organism for the

[1] USEPA. 2010. *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document*. EPA 833-R-10-003. US Environmental Protection Agency, Office of Wastewater Management, Washington D.C.

purpose of more accurately estimating the dilution threshold that produces the same toxic effect.

7. Toxicity tests must be performed on *sediment samples* collected pursuant to Section II.E.2. above using a 10-day amphipod (*Eohaustorius estuaries*) survival test in solid-phase sediment and a 48-hour bivalve (*Mytilus galloprovincialis*) embryo development test at the sediment-water interface.
8. If Toxicity tests of *sediment samples* collected in two consecutive years indicate zero percent survival of the test organisms within the first hour, Toxicity Identification Evaluations must be performed on samples taken from those same locations during the third consecutive year of sampling.
    a. Toxicity Identification Evaluations must be performed in substantial conformance with published and generally-accepted methods[2].

G. Benthic Invertebrate Taxonomy

1. The water quality monitoring program must include annual identification of the taxonomy of benthic invertebrate communities. Taxonomy must be identified in those sediment samples taken from monitoring locations in waters of the U.S. during their scheduled sample years.

H. Illicit Discharges and Illicit Connections

The Water Quality Monitoring Plan must include monitoring to detect <u>illicit discharges and illicit connections</u>.

1. Monitoring must occur annually during the dry season.
2. Monitoring to detect illicit discharges and illicit connections must occur at the locations and frequencies specified in the Water Quality Monitoring Plan.
3. When dry-weather discharges are found at the monitoring locations, the discharge must be tested for the parameters specified in Table 3 below using the test method type(s) indicated.

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[2] E.g. U.S. EPA. 2007. Sediment Toxicity Identification Evaluation (TIE) Phases I, II, and III Guidance Document EPA/600/R-07/080, Office of Research and Development. Washington, DC. Available at: http://www.epa.gov/nheerl/publications/files/Sediment TIE Guidance Document.pdf

Table 3: Parameters for Illicit Discharge and Illicit Connection Discharge Monitoring

Parameter			Test Method Type	
			Field	Laboratory
Ammonia			X	
Nitrate			X	
Soluble phosphorus			X	
Total organic carbon (“TOC”)				X
pH			X	
Oil and grease (if oil sheen is present) or Total petroleum hydrocarbons				X
Temperature			X	
Dissolved oxygen			X	
Electrical conductivity			X	
Hardness			X	
Dissolved Heavy Metals	Arsenic			X
	Cadmium			X
	Hexavalent chromium		X	
	Total chromium			X
	Copper		X	X
	Lead			X
	Mercury			X
	Nickel			X
	Selenium			X
	Silver			X
	Zinc			X
Organophosphate Pesticides		Diazinon		X
		Chlorpyrifos		X
		Malathion		X
		Dimethoate		X
Bacterial Indicators		Total coliform		X
		Fecal coliform		X
		Enterococcus		X

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I. Bacterial Indicators

The Water Quality Monitoring Plan must include an effective monitoring program for bacterial indicators.

1. The Co-permittees must sample discharges from the outfalls/tributaries and ocean water in the surf zone 25-yards up-coast and 25-yards down-coast from those discharges on a weekly basis.
    a. Samples must be measured for total coliform, fecal coliform, and *Enterococcus*.
    b. At the time of sample collection, the Co-permittees must estimate the flow rate of the discharge from the respective outfall/tributary and measure and record the temperature of the discharge and of the surf zone down-coast from the outfall/tributary.
    c. Samples must not be collected on days where rainfall has occurred.
    d. If no hydrologic connection exists between the outfall and the surf zone, only a down-coast sample is needed.
2. The Co-permittees must sample dry-weather discharges at representative monitoring locations.
    a. Samples must be measured for total coliform, fecal coliform, and *Enterococcus*.
    b. Sample events must be coordinated with the Orange County Health Care Agency and the Orange County Sanitation District or their successors in order to augment their monitoring program and improve the collective data's ability to resolve trends, comparisons, and correlations within and between the sites.

J. Bioassessment Monitoring

1. The Co-permittees must conduct bioassessment monitoring in conformance with the Surface Water Ambient Monitoring Program ("SWAMP").
2. Bioassessment monitoring must be completed at the monitoring locations specified by the most recent Stormwater Monitoring Coalition ("SMC") monitoring plan.
3. Co-permittees must perform a minimum of one Causal Assessment per year to identify the likely causes of the biological condition at the monitoring locations.
4. Causal Assessments must be conducted according to the USEPA Stressor Identification Guidance Document (2000) or an equivalent guidance acceptable to the Executive Officer.
5. The bioassessments must include monitoring of urban runoff for the parameters shown in Table 4 below.

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6. The bioassessments must include toxicity testing using *Selenastrum*, *Hyallela Azteca*, and *Ceriodaphnia* in 100% and 50% dilutions.
7. Toxicity tests which produce a zero percent survival of the test organisms within the first hour must be evaluated using Toxicity Identification Evaluations.

Table 4: Bioassessment water quality test parameters

Nutrients	Nitrate plus nitrite	Hardness	
	Total ammonia	Total and dissolved heavy metals	Arsenic
	Total Kjeldahl nitrogen		Cadmium
	Total phosphorus		Chromium
	Orthophosphate		Copper
Total organic carbon			Lead
Total suspended solids			Mercury
Chloride			Nickel
Sulfate			Selenium
Turbidity			Silver
pH			Zinc
Oil and grease (if sheen is present)		Organophosphate pesticides	Diazinon
Temperature			Chlorpyrifos
Dissolved oxygen			Malathion
Electrical conductivity			Dimethoate

K. Data Analyses

1. The Water Quality Monitoring Plan must include a schedule of statistically-valid analyses that will be performed on collected data.
2. The schedule of analyses must include a description of the statistical analyses that will be performed, the purpose of each analysis, the data sets and sub-sets that will be analyzed, and the time periods or thresholds at which each analysis will be performed.
3. The schedule of analyses must satisfy schedules specified in this MRP, established in relevant adopted TMDLs, and this Order.
4. The Water Quality Monitoring Plan must include the supporting rationale for the schedule of analyses.

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5. The applicable schedule of analyses and the results of the performed analyses must be reported in the Annual Progress Report.

L. Special Studies

1. The water quality monitoring program must include the performance of special studies. The special studies must be carried out for those purposes in Section II.A. above, where other elements of the monitoring program are insufficient.
2. The Co-permittees must provide a written work plan each year in the Annual Progress Report which describes the progress of ongoing special studies and special studies which are proposed for the next reporting period. The work plan must include a schedule of proposed milestones and a description of work products expected as part of completion of the special studies and the achievement of milestones.

III. Program Effectiveness Assessments and Reporting

A. All reports and plans required by this Order must be signed by a duly authorized representative for the Principal Permittee and submitted to the Executive Officer of the Regional Board under penalty of perjury.
B. The Co-permittees must submit all information and materials necessary to comply with, or demonstrate compliance with, the requirements of this Order to the Principal Permittee in a timely manner. All submittals by the Co-permittees must be signed by a duly authorized representative for the respective Co-permittee under penalty of perjury.
C. Data transmittals to the Regional Board must 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" for the purpose of providing a standard format for all data transfers and allow data to be universally shared and evaluated as part of various programs.
D. The Co-permittees must submit an Annual Progress Report to the Executive Officer of the Regional Board and to the Regional Administrator of the USEPA – Region 9 no later than November 15th of each year. The reporting period must address actions taken to comply with the requirements of Order No. R8-2014-0002 and this MRP through June 1 of the reporting year. The Annual Progress Report must include the following:
    a. A schedule of all actions required by Order No. R8-2014-0002 during the reporting period, any outstanding actions required by Order No. R8-2014-0002 and Order No. R8-2009-0030, and the status of efforts to carry out the scheduled actions and satisfy the related requirements.
    b. The results of each Co-permittees' program effectiveness assessment and the results of the Principal Permittee's overall evaluation of those results.

c. The results of water quality monitoring; the results of scheduled analyses of the water quality monitoring data; and any related conclusions reached by the Co-permittees.
d. The status of special studies carried out according to the previous reporting period's work plan and the work plan for the upcoming reporting period (See Section II.K. above)
e. The status of efforts to reduce and/or eliminate the discharge of trash and debris (See Subsection VII.D. of Order No. R8-2014-0002).
f. The status of efforts to detect and mitigate SSOs (See Subsection VII.E. of Order No. R8-2014-0002).
g. The unified fiscal analysis (See Section XX of Order No. R8-2014-0002).

IV. Reporting Schedule Summary

Table 5, below, summarizes information that must be reported to the Executive Officer and the items' deadlines. Deliverables are in the order in which they appear in Order No. R8-2014-0002. The table is provided for the convenience of the reader and should not be used as a substitute for reviewing the contents of Order No. R8-2014-0002, this MRP, or the Technical Report.

A. With the exception of deliverables with capitalized titles, Order No. R8-2014-0002, this MRP, and this summary do not establish formal nomenclature. Deliverables with no formal nomenclature may be identified in a manner suitable to the Co-permittees, but they must be identified by a written statement of purpose, declaring which Provision(s) they are intended to comply with.

B. Deliverables that are submitted with the Annual Progress Report do not need to consist of separate documents; they may be incorporated into the Annual Progress Report. But they must be readily-identifiable, denoted elements (e.g. separate chapters) and include a statement of purpose as described above.

C. The Co-permittees are encouraged to submit deliverables in an electronic format. To preserve their authenticity, all deliverables submitted in an electronic format must not be readily-alterable.

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Table 5: Reporting Schedule Summary

Deliverable	Source Provision(s)	Deadline
Draft plan	IV.C.1. and XVIII.H.1.	Varies, but generally triggered by water quality monitoring results and analyses. Due within 6 months of the Co-permittees becoming aware of an exceedance of WLAs or water quality standards. Due within 90 days if requested in writing by the Executive Officer.
Legal authority assessment report	VI.B.	Reported as needed as part of Annual Progress Report.
Trash and debris BMP report	VII.E.1.	Reported as part of Annual Progress Report.
Trash and debris technology evaluation report	VII.E.2.	Reported as part of Annual Progress Report.
BMP retrofit study updates	XII.A.8.	12 months from date of adoption.
Structural treatment control BMP waiver notice	XII.L.	30-days prior to Co-permittee's issuance of the waiver.
Draft watershed maps	XII.N.3.	6 months from date of adoption.
General audience survey	XIII.E.1.b.	60 months from the date of adoption.
Initial imminent threat notice	XVII.A.1.	24 hours of Co-permittees becoming aware.
Imminent threat report	XVII.A.2.	5 business days after initial imminent threat notice.
Known/suspected WDR violations report	XVII.C.	30-days following the end of each calendar quarter: January 30th, April 30th, July 30th, and October 30th of each year.
WLA compliance determination plan	XVIII.G.	6 months from date of adoption.
Program Effectiveness Assessment	XIX.D.	Reported as part of the Annual Progress Report
Unified fiscal analysis	XX.A.	Reported as part of the Annual Progress Report
Report of Waste Discharge	XXIII.A.	180-days before expiration of this Order.

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Water Quality Monitoring Plan	XXIV.I. and MRP II.B.1.	6 months from date of adoption
Annual Progress Report	XXIV.I. and MRP III.D.	Annually by November 15th of each year.

Ordered by:

Kurt V. Berchtold
Executive Officer

Date

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SANTA ANA REGION

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DRAFT TECHNICAL REPORT

FOR

ORDER NO. R8-2014-0002
NPDES PERMIT NO. CAS618030

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM ("NPDES") PERMIT
AND
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

Area-wide Urban Storm Water Runoff

September XX, 2014

I. PURPOSE

The purpose of this Technical Report is to describe the principal facts, the methodology, and the significant legal and policy matters considered by Santa Ana Regional Water Quality Control Board staff ("Regional Board staff") in preparing Order No. R8-2014-0002 ("Order"). This Technical Report also serves as a fact sheet and contains some subheadings and content which generally follow the information described in 40 CFR Parts 124.8 and 124.56.

II. CONTACT INFORMATION

Order No. R8-2014-0002 and other related documents are available at the Santa Ana Regional Water Quality Control Board's ("Regional Board") web site at:

http://www.waterboards.ca.gov/santaana/water_issues/programs/stormwater/oc_permit.shtml

The documents referenced in this Technical Report and in the Order are also available for public review at the Regional Board office at the address below. These and other public records are available for inspection during regular business hours from 8:00 am to 5:00 pm Monday through Friday, except for State Holidays.

The Regional Board office address is:

3737 Main Street, Suite 500
Riverside CA 92501-3348

Persons interested in reviewing or obtaining copies of public records are encouraged to do so by appointment. An appointment can be made by e-mail, facsimile, telephone, or in person. Requests by mail should be made to the attention of "File Review Request" at the Regional Board office address shown above. Contact information for other means of communication is as follows:

Phone: (951) 782-4499
Facsimile: (951) 781-6288
E-mail: FileReview8@waterboards.ca.gov

Appointments are not mandatory, but they will help Regional Board staff fulfill requests efficiently and prevent delays while records are being located, retrieved, and reviewed, if necessary.

The following are the contact information for Regional Board staff involved in the preparation of Order No. R8-2014-0002:

Adam Fischer, MESM (principal author) Environmental Scientist adam.fischer@waterboards.ca.gov (951) 320-6363	Michelle Beckwith Senior Environmental Scientist Coastal Section Chief michelle.beckwith@waterboards.ca.gov (951) 782-4433
Hope Smythe Environmental Program Manager Division Chief Hope.smythe@waterboards.ca.gov (951) 782-4493	Joanne Schneider (TMDLs) Environmental Program Manager Division Chief Joanne.schneider@waterboards.ca.gov

III. BACKGROUND

In 1987, the Clean Water Act was amended to include Section 402(p) which established a framework for regulating municipal and industrial storm water discharges under the National Pollutant Elimination Discharge System ("NPDES"). Section 402(p) requires owners and operators of municipal separate storm sewer systems ("MS4s") to have NPDES permits for discharges of storm water to waters of the U.S. On November 16, 1990, the United States Environmental Protection Agency ("USEPA") amended its NPDES permit regulations to include requirements for storm water discharges. These regulations are codified in the Code of Federal Regulations, Title 40, Parts 122, 123, and 124 (40CFR Parts 122, 123, and 124). Section 402(p) and 40 CFR Parts 122, 123, and 124. As detailed in this Technical Report, these regulations, along with other statutes, plans, and policies, form the basis for the requirements in Order No. R8-2014-0002.

On July 13, 1990, the Regional Board adopted Order No. 90-71 (NPDES Permit No. CA 8000180). This was the first version of NPDES Permit No. CAS618030, implementing USEPA's new NPDES permit regulations for discharges from MS4s. Since then, the Regional Board has adopted three other versions of NPDES Permit No. CAS618030: Order No. 96-31, Order No. R8-2002-0010, and

Order No. R8-2009-0030. Order No. R8-2014-0002 is a fifth version ("fifth-term") of NPDES Permit No. CAS618030.

IV. PERMITTED ENTITIES

The Co-permittees whose discharges of urban runoff to waters of the U.S. are authorized by this Order are as follows:

County of Orange
Orange County Flood Control District
City of Anaheim
City of Brea
City of Costa Mesa
City of Cypress
City of Fountain Valley
City of Fullerton
City of Garden Grove
City of Huntington Beach
City of Irvine
City of La Habra
City of La Palma
City of Laguna Woods
City of Lake Forest
City of Los Alamitos
City of Newport Beach
City of Orange
City of Placentia
City of Santa Ana
City of Seal Beach
City of Stanton
City of Tustin
City of Villa Park
City of Westminster
City of Yorba Linda

The County of Orange includes a total of 34 cities, including the Co-permittees listed above. The remaining unlisted cities lie entirely within the San Diego Region. Because the boundaries of the Santa Ana Region are largely defined by watershed boundaries and often cross political boundaries, three of the listed Co-permittees discharge into both the Santa Ana Region and the San Diego Region. These cities are Laguna Hills, Laguna Woods, and Lake Forest.

All of the above Co-permittees fall into one of two categories. They are either a medium or large municipality that respectively services a population of greater than 100,000 or 250,000 people, or they are a small municipality that is interrelated to a medium or large municipality. Section 402(p) of the Clean Water Act requires that both of these categories of dischargers obtain an NPDES permit.

All of the above Co-permittees in this Order have individual and shared responsibilities to comply with the requirements of this Order. The County of Orange continues to be the Principal Permittee and, as such, has certain other responsibilities in addition to those as a Co-permittee. In order to emphasize these overlapping responsibilities, this Order refers to all of the Co-permittees collectively as "Co-permittees", including the Principal Permittee. When

referencing the Principal Permittee, a requirement of this Order is unique to the County of Orange.

V. PERMITTED DISCHARGES

Order No. R8-2014-0002 regulates the discharge of urban runoff into waters of the U.S. from MS4s operated by the Co-permittees listed in Section IV above. The term “urban runoff” is not defined in the Code of Federal Regulations or in the Federal Register. For the purposes of the Order, urban runoff is defined as the combination of storm water runoff and authorized non-storm water runoff from residential, commercial, industrial, and construction areas within the permitted area. Discharges of urban runoff often contain wastes, as defined in California Water Code, and pollutants, as defined in the Clean Water Act. Wastes may, and pollutants will by definition, adversely affect the quality of the receiving waters.

This Order authorizes the discharge of urban runoff from the Co-permittees’ MS4s. This includes authorization for certain non-storm water discharges. Authorized non-storm water discharges are subject to both the requirements herein and the requirements of the “De Minimus” Permit. This Order does not authorize the Co-permittees’ non-storm water discharges that are subject to NPDES Permit No. CAG918002, for discharges to surface waters of certain groundwater at sites within the San Diego Creek/Newport Bay watersheds. Authorization for such discharges must be obtained through the process described in NPDES Permit No. CAG918002. The purpose of excluding discharges subject to NPDES Permit No. CAG918002 is to avoid regulatory overlap that could potentially create cross-purposes and confusion.

In summary, MS4s are defined in 40CFR122.26(b)(8) as “a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains)…designed or used for collecting or conveying storm water”. Due to the broad inclusion of the definition, portions of MS4s in the permit area will include open channels that are waters of the U.S. In these cases, the channels are considered receiving waters whose beneficial uses must be protected.

VI. APPLICABLE STATUTES, REGULATIONS, PLANS, AND POLICIES

A. Legal Authorities – Federal Clean Water Act and California Water Code

Order No. R8-2014-0002 is issued pursuant to Section 402 of the Clean Water Act and implementing regulations adopted by the USEPA, and pursuant to Chapter 5.5, Division 7 of the California Water Code (commencing with Section 13370).

The objective of the Clean Water Act is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." To carry out this objective, the Clean Water Act requires permit programs to regulate the discharge of pollutants and dredge or fill material to the navigable waters of the U.S. and to regulate the use and disposal of sewage sludge. Section 402 of the Clean Water Act provides the legal authority to issue NPDES permits for the discharge of pollutants to waters of the U.S. NPDES permits may be issued by states which have been authorized to implement certain provisions of the Clean Water Act. The USEPA authorized the state of California to implement the NPDES permit program on May 14, 1973.

The Porter-Cologne Water Quality Control Act (California Water Code section 13000 *et seq.*) established the State Water Resources Control Board and the nine regional water quality control boards. The boards are the principal state agencies with primary responsibility for the coordination and control of water quality. The Santa Ana Regional Water Quality Control Board has the primary responsibility for the coordination and control of water quality in the Santa Ana Region.

The regional water quality control boards implement the Clean Water Act through Chapter 5.5 of the California Water Code, commencing with Section 13370. Section 13377, in part, provides the regional water quality control boards with the authority to issue waste discharge requirements to ensure compliance with all applicable provisions of the Clean Water Act.

Clean Water Act Section 402(p) requires the USEPA, or authorized states, to issue NPDES permits for storm water discharges from municipal separate storm sewer systems ("MS4s") to water of the U.S. Clean Water Act Section 402(p)(3)(B) allows such NPDES permits to be issued on a system-wide or jurisdiction-wide basis. Section 402(p)(3)(B)(ii) requires that these NPDES permits "effectively prohibit non-storm water discharges" into the MS4s. Section

402(p)(3)(B)(iii) requires these NPDES permits to "require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

B. Federal and California Endangered Species Acts

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

C. California Environmental Quality Act

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

D. State and Federal Regulations, Plans and Policies

1. Water Quality Control Plan for the Santa Ana River Basin

The Clean Water Act requires the regional boards to establish water quality standards for each water body in their region. The requirements of this Order are designed to attain and maintain water quality standards. Water quality standards include beneficial uses, water quality objectives and criteria that are established at levels that protect beneficial uses, and a policy to prevent degrading of waters ("anti-degradation policy").

On January 24, 1995, the Santa Ana Regional Water Quality Control Board adopted the *Water Quality Control Plan for the Santa Ana River Basin* ("Basin Plan"). The Santa Ana Regional Water Quality Control Board has amended the

Basin Plan on multiple occasions since 1995. The Basin Plan designated beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Santa Ana Region. The Basin Plan identifies the following existing and potential beneficial uses for surface waters in the Santa Ana Region:

- 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
- Estuarine habitat

2. Water Quality Control Plan for Ocean Waters of California

In 1972, the State Water Resources Control Board ("State Board") adopted the Water Quality Control Plan for Ocean Waters of California ("Ocean Plan"). The State Board adopted the most-recent amended Ocean Plan on September 15, 2009. The Office of Administrative Law approved it on March 10, 2010 and USEPA approved it on October 8, 2010.

The Ocean Plan is applicable in its entirety to ocean waters of the State. In order to protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Pursuant to California Water Code Sections 13263 and 13377, the requirements of this Order implement the Ocean Plan.

The Ocean Plan identifies the beneficial uses of ocean waters of the State as summarized below:

- Industrial water supply
- Water contact and non-contact recreation
- Navigation
- Commercial and sport fishing
- Mariculture
- Preservation and enhancement of designated Areas of Special Biological Significance
- Rare and endangered species
- Marine habitat
- Fish spawning and shellfish harvesting

The Santa Ana Region includes two Areas of Special Biological Significance ("ASBS"), the Robert B. Badham and Irvine Coast ASBS'. In the Ocean Plan, these are known as ASBS 32 and ASBS 33 respectively. Locally, these ASBS' are known as 'Newport Coast' and 'Crystal Cove', respectively. Both of these areas were designated as ASBS' by the State Board on April 18, 1974.

The Ocean Plan prohibits the discharge of waste to designated Areas of Biological Significance unless an exception to Ocean Plan requirements is issued by the State Board. On March 20, 2012, the State Board approved Resolution No. 2012-0012, which includes exceptions to the Ocean Plan prohibition for certain discharges to various ASBS'. This includes exceptions for discharges from the City of Newport Beach to Newport Coast and Crystal Cove and from The Irvine Company, the Department of Parks and Recreation and the Department of Transportation to Crystal Cove.

Specific terms, prohibitions, and special conditions were adopted in Attachment "B" to Resolution No. 2012-0012 to provide protections for ASBS'. Resolution No. 2012-0012 grants *exceptions* for the City of Newport Beach and others, but does not authorize discharges to ASBS'. This Order grants the actual *authorization* to discharge to ASBS' only to the City of Newport Beach. The other dischargers are not Co-permittees under this Order. The protections in Attachment "B" to Resolution No. 2012-0012 have been incorporated into this Order as if fully set forth herein and are applicable to discharges from the City of Newport Beach.

3. Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality

   On September 16, 2008, the State Board adopted the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality ("Sediment Quality Control Plan"). The Sediment Quality Control Plan became effective on August 25, 2009. The Sediment Quality Control Plan establishes: 1) narrative sediment quality objectives to protect benthic communities from exposure to contaminants in sediment and to protect human health; and 2) a program of implementation using a 'multiple lines of evidence' approach to interpret the narrative sediment quality objectives. The requirements of this Order implement the Sediment Quality Control Plan.

4. Anti-degradation Policy

   Federal regulations (40CFR131.12) require that the state water quality standards include an anti-degradation policy consistent with the Federal Anti-degradation Policy. The State Board established California's anti-degradation policy in State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining the Quality of the Waters of the State". State Board Resolution No. 68-16 incorporates the Federal Anti-degradation Policy where the federal policy applies under federal law.

   The Santa Ana Regional Water Quality Control Board's Basin Plan implements and incorporates by reference both the State and Federal Anti-degradation Policies. State Board Resolution No. 68-16 and 40 CFR131.12 require that the Santa Ana Regional Water Quality Control Board maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Santa Ana Regional Water Quality Control Board's policies. State Board Resolution No. 68-16 requires that discharges of waste be regulated to meet best practicable treatment or control to assure that pollution or nuisance will not occur and that the highest water quality, consistent with the maximum benefit to the people of the State, will be maintained.

   The discharges authorized by this Order are consistent with the anti-degradation provisions of 40CFR131.12 and State Board Resolution No. 68-16. As required by 40CFR122.44(a), the Co-permittees must comply with the "maximum extent

practicable" standard set forth in Clean Water Act Section 402(p) for discharges of pollutants in urban runoff from MS4s.

Many of the waters within the area covered by this Order are impaired and listed on the State's Clean Water Act Section 303(d) List. The Santa Ana Regional Water Quality Control Board has established TMDLs to address the impairments. This Order requires Co-permittees to implement WLAs set forth in TMDLs. This Order requires Co-permittees to implement effective processes and programs, and effectively prohibit non-storm water discharges into the MS4. Water-quality based effluent limits ("WQBELs") are developed as part of plans implemented by the Co-permittees to achieve WLAs. This Order does not authorize an increase in the amount of wastes discharged.

5. Anti-backsliding Requirements

Clean Water Act Sections 402(o) and 303(d)(4) and 40CFR122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations and other conditions in this Order are at least as stringent as the effluent limitations in the previous versions of the NPDES permit; therefore, this permit is consistent with the federal anti-backsliding requirements.

6. Clean Water Act Section 303(d) List

Clean Water Act Section 303(d)(1) requires each state to identify specific water bodies within its boundaries where water quality standards are not being met or are not expected to be met after technology-based effluent limitations on point sources of pollutants have been complied with. Water bodies that do not meet water quality standards are considered impaired and are placed on the state's "303(d) List". For each listed water body, the state or USEPA is required to establish a TMDL of each pollutant that is impairing the water quality standards in that water body. Periodically, the USEPA approves the state's 303(d) List.

A TMDL is the sum of the allowable pollutant loads of a single pollutant from all contributing point sources (waste load allocations), non-point sources (load allocations), the contribution from background sources, and a margin of safety (40 CFR 130.2(i)). MS4 discharges are considered point source discharges and are assigned waste load allocations. A TMDL is a tool for implementing water

quality standards and is based on the relationship between pollution sources and in-stream water quality conditions. The TMDL establishes the allowable pollutant loads from various sources to a water body and thereby provides the basis to establish water quality-based controls. By implementing these controls, dischargers should provide the pollutant load reduction needed for a water body to meet water quality standards.

Most recently, the USEPA approved the state of California's 2010 303(d) List of impaired water bodies on October 11, 2011. The 2010 303(d) List includes certain receiving waters in the Santa Ana Region. Since 2002, USEPA and the Santa Ana Regional Water Quality Control Board have established TMDLs to address water quality impairments. These TMDLs establish waste load allocations ("WLAs") for discharges from MS4s.

Clean Water Act Section 402(p)(3)(B)(iii) requires the Santa Ana Regional Water Quality Control Board to require Co-permittees to employ "management practices, control techniques and system, design, and engineering methods and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." Clean Water Act Section 402(a)(1) also requires states to issue permits with conditions necessary to carry out the provisions of the Clean Water Act. Federal regulations also require that NPDES permits contain WQBELs consistent with the assumptions and requirements of all available WLAs (40 CFR 122.44(d)(1)(vii)(B)). California Water Code requires that NPDES permits include limitations necessary to implement water quality control plans. Therefore, this Order includes WQBELs and other provisions to implement the TMDL WLAs for discharges from MS4s.

7. Other Regulations, Plans, and Policies

This Order implements all other applicable federal regulations and State regulations, plans and policies, including 40CFR131.38 (Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California), also known as the California Toxics Rule or "CTR"; the State Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, also known as the State Implementation Policy of "SIP".

E. Unfunded Mandates

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

First, the requirements of this Order do not constitute a new program or a higher level of service as compared to the requirements contained in the previous Fourth Term Permits. The overarching requirement to impose controls to reduce the pollutants in discharges from MS4s is dictated by the Clean Water Act and is not new to this permit cycle (33 USC section 1342(p)(3)(B)). The inclusion of new and advanced measures as the MS4 programs evolve and mature over time is anticipated under the Clean Water Act (55 CFR 47990, 48052 (Nov. 16, 1990)) and, to the extent requirements in this Order are interpreted as new advanced measures, they do not constitute a new program or higher level of service.

Second, and more broadly, mandates that are imposed by federal law are exempt from the requirement that the local agency's expenditures be reimbursed (Cal. Const., art. XIII B, section 9, subd. (b)). This Order implements federally-mandated requirements under the Clean Water Act and its requirements are therefore not subject to subvention of funds. This includes federal requirements to effectively prohibit non-storm water discharges, to reduce the discharge of pollutants in storm water to the MEP, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants (33 USC section 1342(p)(3)(B)). Federal cases have held these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (*Natural Resources Defense Council, Inc., v. USEPA* (9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.)

The authority exercised under this Order is not reserved state authority under the CWA's savings clause (cf. *Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 627-628 [relying on 33 USC section 1370. The savings clause allows a state to develop requirements which are not "less stringent" than federal requirements]). Instead, the authority under this Order is part of a federal mandate to develop pollutant reduction requirements for municipal separate storm sewer systems. To this extent, it is entirely federal authority that forms the

legal basis to establish the permit provisions. (See *City of Rancho Cucamonga v. Regional Water Quality Control Board, Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389; *Building Industry Ass'n of San Diego Co. v. State Water Resources Control Bd*. (2004) 124 Cal.App.4th 866, 882-883.)

The MEP standard is a flexible standard that balances a number of considerations, including technical feasibility, cost, public acceptance, regulatory compliance, and effectiveness. (*Building Ind. Ass'n, supra*, 124 Cal.App.4th at pp. 873-874, 889.) Such considerations change over time with advances in technology and with experience gained in storm water management (55 FR 47990, 48052 (Nov. 16, 1990)). Accordingly, a determination of whether the conditions contained in this Order exceed the requirements of federal law cannot be based on a point by point comparison of the permit conditions and the minimum control measures that are required "at a minimum" to reduce pollutants to the maximum extent practicable and to protect water quality (40 CFR 122.34). Rather, the appropriate focus is whether the permit conditions, as a whole, exceed the MEP standard.

The requirements of the Order, taken as a whole rather than individually, are necessary to reduce the discharge of pollutants to the MEP and to protect water quality. The Santa Ana Regional Water Quality Control Board finds that the requirements of the Order are practicable, do not exceed federal law, and thus do not constitute an unfunded mandate. These findings are the expert conclusions of the principal state agency charged with implementing the NPDES program in California (CWC sections 13001, 13370).

It should also be noted that the provisions in this Order to effectively prohibit non-storm water discharges are also mandated by the CWA (33 USC section 1342(p)(3)(B)(ii)). Likewise, the provisions of this Order to implement TMDLs are federal mandates. The Clean Water Act requires TMDLs to be developed for water bodies that do not meet federal water quality standards (33 USC section 1313(d)). Once the USEPA or a state establishes or adopts a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions and requirements of any applicable waste load allocation in a TMDL (40 CFR 122.44(d)(1)(vii)(B)).

Third, the Co-permittees' obligations under this Order are similar to, and in many respects less stringent than, the obligations of non-municipal dischargers who are issued NPDES permits for storm water discharges. With a few inapplicable exceptions, the Clean Water Act regulates the discharge of pollutants from point

sources (33 USC section 1342) and the Porter-Cologne Water Quality Control Act regulates the discharge of waste (CWC section 13263), both without regard to the source of the pollutant or waste. As a result, the "costs incurred by local agencies" to protect water quality reflect an overarching regulatory scheme that places similar requirements on governmental and non-governmental dischargers. (See *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 57-58 [finding comprehensive workers' compensation scheme did not create a cost for local agencies that was subject to state subvention].)

The Clean Water Act and the Porter-Cologne Water Quality Control Act largely regulate storm water with an even hand, but to the extent there is any relaxation of this even-handed regulation, it is in favor of the local agencies. Generally, the Clean Water Act requires point-source dischargers, including dischargers of storm water associated with industrial or construction activity, to comply strictly with water quality standards (33 USC section 1311(b)(1)(C); *Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1164-1165 [noting that industrial discharges must strictly comply with water quality standards]). As discussed in prior State Water Board decisions, certain provisions of this Order do not require strict compliance with water quality standards (State Water Board Order No. WQ 2001-0015, p. 7). Those provisions of this Order regulate the discharge of waste in municipal storm water under the Clean Water Act's MEP standard, not the BAT/BCT standard that applies to other types of discharges. These provisions, therefore, regulate the discharge of waste in municipal storm water more leniently than the discharge of waste from non-governmental sources.

Fourth, the Co-permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in Clean Water Act section 301(a) (33 USC section 1311(a)). To the extent that the Co-permittees have voluntarily availed themselves of the permit, the program is not a state mandate. (Accord, *County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.)

Fifth, the local agency Co-permittees' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under state law predates the enactment of Article XIIIB, Section (6) of the California Constitution.

Finally, even if any of the permit provisions could be considered unfunded mandates, under Government Code section 17556, subdivision (d), a state

mandate is not subject to reimbursement if the local agency has the authority to charge a fee. The Co-permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order, subject to certain voting requirements contained in the California Constitution. (See Cal. Const., Art. XIII D, section 6, subd. (c); see also *Howard Jarvis Taxpayers Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1358-1359.) Numerous activities contribute to the pollutant loading in the MS4. Local agencies can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., *Apartment Ass'n of Los Angeles County, Inc., v. City of Los Angeles* (2001) 24 Cal.4th 830, 842 [upholding inspection fees associated with renting property].) The authority and ability of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*Clovis Unified School Dist. V. Chiang* (2010) 188 Cal.App.4th 794, 812, citing Connell v. Sup. Ct. (1997) 59 Cal.App.4th 382, 401; *County of Fresno v. State of California* (1991) 53 Cal. 3d. 482, 487-488.)

VII. REGULATORY BASIS FOR PERMIT REQUIREMENTS

Order No. R8-2014-0002 is based on Section 402(p) of the Clean Water Act; 40CFR Parts 122, 123, and 124; and the Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code, Section 13000 *et seq*.). This Order is also based on the Water Quality Control Plan for the Santa Ana River Basin ("Basin Plan"); all applicable provisions of state-wide water quality control plans and policies adopted by the State Water Resources Control Board ("State Board"); the California Toxics Rule ("CTR"); and the CTR Implementation Plan.

The Basin Plan was revised and adopted by the Regional Board and it became effective on January 24, 1995. Since then, the Basin Plan has been amended to incorporate requirements related to Total Maximum Daily Loads ("TMDLs", discussed later in this Section). The Basin Plan contains water quality objectives and beneficial uses for water bodies in the Santa Ana Region. Under the Clean Water Act, both beneficial uses and the water quality objectives to protect them are collectively referred to as "water quality standards". 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, known as the "Ocean Plan".

VIII. METHOD FOR THE DEVELOPMENT OF ORDER NO. R8-2014-0002

A. Results of Audits

During the term of Order No. R8-2009-0030, Regional Board staff performed 14 audits of 12 of the Co-permittees. The audits were performed on one or more elements of the Co-permittees' storm water programs and included reviews of the target Co-permittee's Program Effectiveness Assessments ("PEAs"). Audits were largely carried out using process mapping techniques in addition to comparisons of actual program outcomes with permit requirements.

Regional Board staff review has found that the "iterative process" has been hampered by the disuse of performance metrics. In most cases, the Co-permittees tracked and reported outcomes of program activities in their PEAs without any performance metrics to provide context. This renders the information of little use. For example, Co-permittees commonly report on the number of curb-miles swept as part of street-sweeping programs. This reporting approach does not allow evaluation of the data by comparing it to the target number of curb-miles that were supposed to be swept or inter-annual comparisons.

Regional Board staff highlighted this issue with an audit performed on the City of Santa Ana's Program Management, Public Education, and Existing Development elements of their storm water program in 2010. This audit focused on Section C of the City's 2008-2009 PEA, which contains the outcomes from these program elements. Because the format used by the City was one used by the Co-permittees, the conclusions of that audit also generally apply to the other Co-permittee's PEAs. In Section C, the City tracked and reported 21 objective outcomes from implementing their program. Of those, 19 outcomes were reported without comparison to a performance metric, even when a performance metric was prescribed in the Permit. Consequently, City staff was collecting data on 19 outcomes but was not using the information in a constructive manner in their PEA, not even to evaluate compliance in an overt way.

Fundamentally, the permit describes systems of actions that the Co-permittees must carry out to comply with the permit, but more importantly, to reduce pollutants in urban runoff. The permit describes these systems with different levels of detail. As a result, the Co-permittees often must better define these systems in a practical way in their program planning documents, such as the Drainage Area Management Plan or Local Implementation Plans, to describe how they will comply.

There is a presumption that carrying out the actions prescribed in the permit and related planning documents will improve water quality. However, the degree of effectiveness, or correlation between specific actions and improvements in water quality, is not known. For example, an incremental improvement in water quality cannot be attributed to a particular public education campaign. This dilemma is the basis for accepting the "iterative process" to reducing pollutants to ultimately achieve water quality objectives. The "iterative process" allows for a large degree of experimentation by the Co-permittees and Regional Board staff to discover the most effective combination of actions. On the basis of objective information, the "iterative process" allows Co-permittees to amend their program planning documents to improve their programs. The "iterative process" also informs the permit process, allowing the Regional Board to also make improvements in the permit through subsequent re-authorizations.

The "iterative process" is described best in the Receiving Water Limitations language in the Order. This language was generally originated by the USEPA and communicated by the State Water Resources Control Board ("State Board") in Order WQ 99-05. The State Board's language has been modified in this Order but its purposes have not been altered. The "iterative process" is also referenced in the findings of the past two versions of NPDES Permit No. CAS618030.

No time schedule is prescribed in the Receiving Water Limitations language over which to execute the "iterative process". The key step to trigger the process is a "determination…that a discharge is causing or contributing to the exceedance of an applicable water quality standard" described in Subsection IV.C. of the Order. Because of the variance in storm water quality and the infrequency of storm events, the time period may be on the order of years to make the determination and to initiate the "iterative process" described by Order WQ 99-05. In fact, the "iterative process" in Order WQ 99-05 has never been initiated before in the Santa Ana Region in spite of the Co-permittees' collection of substantial water quality data. This is largely attributed to a poorly-defined trigger to initiate the "iterative process".

The "iterative process" as a whole relies on some form of feedback to evaluate program performance and identify the need for improvements if necessary. The Co-permittees have spent significant resources implement their storm water programs. The Co-permittees track and report program outcomes, fulfilling part of the iterative process. But do not consistently place much of the data in context by comparing it to objective metrics to evaluate performance. The result is that

there has been no comprehensive effort to assess the effectiveness of the Co-permittees' program activities.

Requirements for reports on program effectiveness first appeared in the fourth-term permit, Order No. R8-2009-0030, as Program Effectiveness Assessments ("PEAs"). However, the requirements stopped short of mandating that the Assessments rely on the use of objective performance metrics or standards for various program elements. Although discussed, the use of objective performance metrics or standards was phrased as a recommendation in the fourth-term permit.

There is a definite need for the Co-permittees to use indicators of the performance of their programs' activities. Water quality data can be collected to assess the *overall* performance of the Co-permittees' storm water programs. But water quality data cannot always be used to evaluate the effectiveness of *specific* program activities or even of combinations of program activities. Sufficient water quality data would have to be collected over extended periods of time to directly correlate specific program activities with incremental improvements in water quality. During this time, the different Co-permittees may adopt new activities and/or abandoned others. This continual evolution of the Co-permittees' program activities during a monitoring period can confound the effort to correlate program activities with changes in water quality. Other types of performance metrics are needed.

Performance metrics include water quality standards and measurable and verifiable permit requirements; but these do not comprehensively address all of the Co-permittees' program activities. Additional performance metrics need to be established by the Co-permittees to carry out a comprehensive assessment of program activities. For example, some cities have established agronomic fertilizer rates as a performance metric for applying fertilizer to turf grass in public parks and properties.

The structure and language of the past permit can be improved to promote the "iterative process". Interviews with Co-permittees' staff revealed that their focus is on permit compliance. This appears to have caused the Co-permittees to comply with the letter of the permit with less emphasis on the intended "iterative process". Where the permit provides specific direction, the Co-permittees generally make an effort to comply using available resources. Since the past permits did not detail how to assess program effectiveness in a meaningful way, there has been insufficient incentive for Co-permittees to fully apply the iterative

process. The requirements of this Order attempt to address this apparent disconnect between "compliance" and "program performance" by better defining the "iterative process" and mandating its practice.

The past practice of incorporating by reference best management practices in the Drainage Area Management Plan and the Local Implementation Plan does not appear to promote the "iterative process". Past versions of NPDES Permit No. 618030 relied on the development of the Drainage Area Management Plan ("DAMP") by the Co-permittees[1]. The DAMP and its companion plans and programs describe the storm water management controls that the Co-permittees would carry out in order to comply with the permit. The permit then required that the Co-permittees implement the DAMP. The more recent fourth-term permit expanded this requirement to include Local Implementation Plans developed by each Co-permittee for their respective jurisdiction.

The past strategy of 'incorporating by reference' best management practices in the Drainage Area Management Plan and the Local Implementation Plan effectively made many of the practices described in those Plans mandatory. Failure to execute the commitment or its elements could cause the Co-permittees to be out of compliance with the permit and subject them to civil liability.

The ability of the Regional Board to enforce the DAMP or LIPs depends on how objectively the program activities are described or whether or not the activities can be measured or verified. Of the DAMP and the LIPs, only the DAMP's content was controlled by a process for approval by the Executive Officer. The result was a logical effort by at least a few Co-permittees to amend their Local Implementation Plans to remove any objective enforceable requirements and subsequent potential liabilities. Best management practices became "opportunities" that the Co-permittee might or might not follow through on. Without any commitment for their implementation, missed "opportunities" are not enforceable.

The fear of being subject to enforcement may discourage the Co-permittees from documenting innovations that could potentially improve the Co-permittees storm water programs and the permit. Evidently, in the absence of oversight, the relationship motivates the Co-permittees to eliminate any concrete commitments that might cause them to be out of compliance.

[1] For purposes of discussion, DAMP and LIP generally refer to companion plans and programs such as the 2011 Model Water Quality Management Plan and the Technical Guidance Document.

This is not to assert that the Co-permittees have not made innovations in their storm water programs or carried out best management practices to reduce pollutants in urban runoff. During many of the audits, Regional Board staff discovered that many Co-permittees were running off-the-books storm water programs. Innovations and best management practices were occurring, but they were not described in the Drainage Area Management Plan or the Local Implementation Plan. By keeping these efforts out of the DAMP or LIPs, the Co-permittees prevent them from becoming permit requirements and thus liabilities. The result is that the *documented* elements of the storm water program have become stagnant even as innovations have occurred undocumented.

In summary, the Co-permittees have not taken full advantage of the "iterative process" to improve their storm water programs. The 'incorporation by reference' relationship between the permit and the DAMP and LIPs is likely a significant factor that discourages the Co-permittees from making changes to the plans that might become enforcement liabilities. Where allowed, the Co-permittees have managed potential enforcement liabilities by eliminating objective commitments from the plans. Where innovative strategies are employed, they are not documented in the plans.

It is likely that other factors, such as organization size (the Co-permittees collectively) and related span of control, disproportionate influence among larger and smaller cities, and differing levels of interest among Co-permittees also significantly affect the management of the storm water program. But these are matters that are not easily addressed by this Order.

Therefore, this Order refocuses the Co-permittees' efforts on the "iterative process" to improve their storm water programs and ultimately achieve water quality objectives. The "iterative process" is not defined specifically by USEPA, the State Water Resources Control Board, or the Regional Water Quality control Board. In business, the "iterative process" is an objective process improvement technique for arriving at a decision or objective by repeating rounds of analysis or a system of actions. Performed well, the "iterative process" is a cost control method that can save the Co-permittees money. The process involves subsequent evaluation and improvement with each cycle.

The purpose of the "iterative process" is ultimately to arrive at some decision or desired outcome. The "iterative process" is typically applied in circumstances where there is great uncertainty; where costs of errors are high; or where a full commitment of resources to achieve a risky outcome is undesirable. This

process is known by many other names such as a "Plan-Do-Check-Act Cycle" ("PDCA Cycle"), Deming Cycle, and Shewart Cycle.

Objective process improvement techniques have been in practice for over half a century and have been gradually finding their way into storm water regulation. The techniques were introduced into widespread use in Japan in the 1950's by W. Edwards Deming and are generally regarded as being instrumental in transforming the post-war Japanese economy. USEPA prescribes objective process improvement techniques ("measurable goals") in their Storm Water Phase II Rule, promulgated in 1999, for small MS4s. In 2008, USEPA published *Evaluating the Effectivenes of Municipal Stormwater Programs*, describing the "iterative process" as a process improvement technique.

Co-permittees under the NPDES program have also begun developing process improvement techniques. With the participation of the Co-permittees, the California Stormwater Quality Association published the *Municipal Stormwater Program Effeciveness Assessment Guide* in 2007 ("2007 Guide")[2]. This document attempts to describe an objective process for developing a system of measuring the performance of the Co-permittees' storm water programs. Although the 2007 Guide was referenced in the fourth-term permit in regards to performing Program Effectiveness Assessments, the process was not fully put into practice by the Co-permittees. Gradual efforts were made, but the process has not been fully implemented.

In storm water regulation, the "iterative process" serves multiple purposes. First, it allows the Co-permittees, regulatory staff, and the public to assess compliance with the requirments of this Order. It tracks progress towards meeting water quality objectives. It justifies the Co-permittees' commitment of resources, including the cessation of ineffective program activities. It provides feedback to storm water program managers, in part, to identify the most effective program activities. Last, it may establish correlations between reductions in pollutant loads into receiving waters and program activities.

To refocus the Co-permittees, this Order partly de-couples the DAMP and LIP from the permit requirements. Planning documents are still required, but their purpose is principally to maintain transparency of the Co-permittees' storm water programs. To do so, the planning documents must fully and accurately reflect the Co-permittees' storm water programs.

[2] Available for a fee at www.casqa.org

This Order continues virtually all of the objective requirements of the fourth-term permit, such as commercial and industrial inspections. But this Order also requires that the Co-permittees have certain effective processes (or mechanisms) instead of prescribing specific objective outcomes. To complement all processes and objective requirements, the Co-permittees must also develop and apply objective performance measures to assess the programs' effectiveness.

Program activities and their related performance measures will necessarily include the objective requirements of the permit, such as requisite numbers of inspections. But not all of the Co-permittees' program activities are mandated directly by a permit requirement. Under the fourth-term permit, these program activities are described in the DAMP or LIP. They were therefore mandated by way of being incorporated by reference in the permit.

Now, program activities that are only described in the DAMP or LIP have been incorporated into this Order. However, program activities have been generally synthesized rather than stated directly. The Order describes these program activities more generally as required programs, processes, or mechanisms. These mandated programs, processes, or mechanisms are intended to accomplish the same purposes as the specific program activities described in the DAMP or LIP. Using general descriptions, instead of mandating specific program activities in the DAMP or LIP, is intended to allow the Co-permittees greater flexibility to add or discontinue certain program activities or modify their level of effort.

This flexibility is tempered in three ways. First, the Co-permittees must continue to meet the objective requirements of this Order where prescribed. Second, the Co-permittees must perform program activities that satisfy the general goals prescribed by this Order. Last, the Co-permittees must meet the MEP standard required by this Order and the Clean Water Act.

The Co-permittees' storm water program is initially generally-presumed to meet the MEP standard required by this Order and the Clean Water Act. Therefore, unless specified otherwise in this Order, it must be continued unless the Co-permittees can provide objective evidence that the program must be modified. This evidence is provided by Program Effectiveness Assessments. Co-permittees may modify program activities, but the program as a whole must work to achieve the general goals prescribed by this Order. Those general goals appear in this Order along with expressed requirements to have effective

mechanisms or processes to achieve those goals. “Effectiveness” must be measured using the objective requirements prescribed by this Order or, where not prescribed, developed by the Co-permittees.

Consequently, there will be two kinds of objective performance metrics: those described in the language of this Order and those developed by the Co-permittees. Failure to achieve the objective requirements of this Order will be regarded as violations of this Order. However, failure to achieve objective performance metrics developed by the Co-permittees is not a violation of this Order.

In the absence of objective requirements for specific program activities, program activities will be evaluated: 1) by determining which prescribed general goal(s) that an activity is intended to achieve; 2) if there is (are) one or more objective performance metrics being used to assess the performance of the activity; and 3) if the performance metric(s) is (are) valid. A program activity that lacks any of these evaluative elements will be in violation of this Order.

B. The “Iterative Process”

Essentially, this Order requires more explicitly that the Co-permittees engage in an “iterative process” for their program activities. This process is outlined in the conceptual model below (Figure 1). The process shown is adapted from W. Edwards Deming’s PDCA Cycle.

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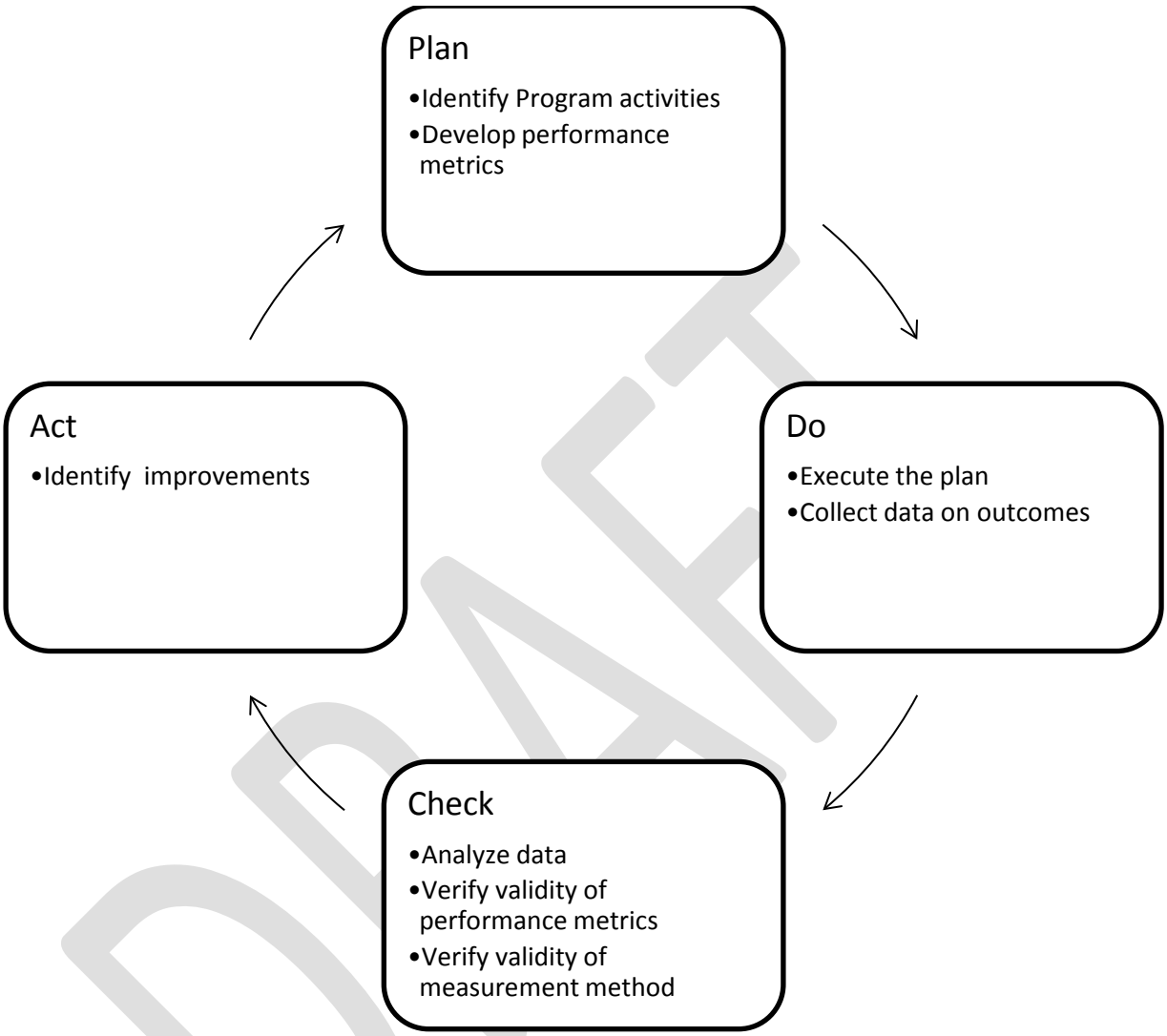
Figure 1: Conceptual Model of the "Iterative Process"



The “iterative process” applies to both the Co-permittees’ development and execution of their storm water programs and to the development of future reauthorizations of NPDES Permit No. CAS618030. The “iterative process” can be used at multiple time scales, from days to decades. There is a reasonable expectation that the program activities prescribed in the permit and developed by the Co-permittees will ultimately improve receiving water quality and that the choice and method of measuring program outcomes are valid. However, errors may be discovered and adaptive measures may be necessary to improve the

effectiveness of the program activities or to improve the methods of measuring effectiveness.

Within this Order, the “iterative process” cycle is driven by several mechanisms. First, Section IV’s receiving water limitations language necessarily requires the Co-permittees to use receiving water quality monitoring data to evaluate if water quality standards are being met. Receiving water quality monitoring data is generated through the Monitoring and Reporting Program and the data is analyzed based on a schedule developed by the Co-permitteesbut subject to the approval of the Executive Officer.

The “iterative process” is also driven by waste load allocations developed as part of TMDLs described in Section XVIII of this Order. Many waste load allocations include numeric effluent limits, where TMDL compliance dates have passed, or numeric action levels, where compliance dates have not passed. Both are kinds of water quality based effluent limits and are shown in Appendices B through H. Waste load allocations and their related requirements are the vehicle for meeting water quality standards for those waters listed pursuant to Clean Water Act Section 303(d).

The “iterative process” is lastly driven by the Co-permittees’ performance of annual Program Effectiveness Assessments described in Section XIX of this Order. The Co-permittees must use measurable and verifiable (objective) performance standards or metrics to evaluate the effectiveness of their BMPs. These performance standards are found within this Order but others will need to be developed by the Co-permittees to evaluate BMPs that are not prescribed directly by this Order. The performance standards that are not found in this Order are not enforceable on the Co-permittees; in these cases, the “iterative process” itself is enforced by this Order, rather than the outcome. Unlike water quality standards and waste load allocations, these performance standards are not direct measures of BMPs’ effects on receiving water quality. But they are important to measure the effectiveness of BMPs in achieving goals, such as those related to public education and personnel training, whose purpose is to indirectly improve water quality.

This Order has also been written with the purpose of limiting the number of planning documents necessary to implement the storm water programs. With the exception of the TMDLs, this Order does not require new planning documents. In simple terms, the Co-permittees’ best management practices are applied at three spatial scales; at the permit-area scale, at the watershed scale, and at the

local jurisdiction scale. All of these scales are collectively addressed in the DAMP, LIPs, and the TMDL-related planning documents. Any changes to the storm water programs can be represented in any of these documents without the need to develop additional, separate plans.

The Co-permittees must continue to use the planning documents already prepared to the extent that the plans fully document their program activities, including best management practices. It will be necessary to review and amend those planning documents to add activities not already documented, to develop performance metrics and methods for measuring those metrics, to consolidate and possibly abandon some plans, and to generally update the Co-permittees' storm water programs to comply with this Order. The Co-permittees can re-write their planning documents if they choose to. But this is a matter for the Co-permittees' editorial discretion and is not required by this Order.

C. Plain Language

California Government Code Section 6219(a) states that "Each department, commission, office, or other administrative agency of state government shall write each document that it produces in plain, straightforward language, avoiding technical terms as much as possible, and using a coherent and easily readable style." This requirement is more commonly known as the State's "plain language requirement". Order No. R8-2014-0002 and this Technical Report have been prepared with careful consideration of the plain language requirement.

There are a variety of indicators for measuring the 'readability' of a document. These indicators include the Flesch Kincaid Reading Ease, Flesch Kincaid Grade Level, and the Gunning Fog Score. These first two indicators are widely available in common word-processing software and were applied to the Order and Technical Report. The results indicate that a person that has achieved a college junior level of education should be able to readily understand these documents. Given the technical and legal subject matter, the readability of the Order and this Technical Report is appropriate and satisfies the State plain language requirement.

D. Internet References

This Order includes numerous references to web pages in order to save paper and simplify the presentation of the permit and related documents. In an electronic format, the permit and related documents may contain live links to web

sites. These links and web site addresses may become broken or outdated during the term of this Order. Consequently, these references have been provided for the convenience of the reader. Regional Board staff will make every effort to update broken or outdated internet references in electronic versions of this Order posted at the Regional Board's web site. Readers who become aware of broken or outdated reference or links are asked to contact Regional Board staff in the Contact Information (SectionII) above to assist in this effort.

IX. PUBLIC PROCESS AND NOTIFICATION

On October 3, 2013, the County of Orange ("County"), acting on behalf of the Co-permittees, submitted the Report of Waste Discharge ("ROWD") for the fifth-term NPDES Permit No. CAS618030 ("Permit"). At the recommendation of Regional Board staff, the ROWD emphasized changes that the Co-permittees were requesting in the new permit. The requested changes included changes to the requirements of NDPES Permit No. CAS618030 and to the accompanying Monitoring and Reporting Program.

On October 30, 2013, Regional Board staff sent the County of Orange a Notice of Incomplete Report of Waste Discharge ("Incomplete Notice"). The Incomplete Notice consisted of a cover letter and a table of responses to each of the requested changes described in the Co-permittees' ROWD. The responses largely were requests for additional information to justify the requested changes, requests for more detailed recommendations, and requests for descriptions of how the changes would improve the Co-permittees' storm water program and how the improvement would be measured. In the Incomplete Notice, Regional Board staff requested that the County respond by November 30, 2013.

On October 30, 2013, County staff requested an extension of time to respond to the Incomplete Notice. The request was granted orally and confirmed in a letter dated November 7, 2013. The new deadline was December 18, 2013.

The November 7, 2013 letter included a request to meet and confer on the County's anticipated response. County staff was advised that their requested changes to the Monitoring and Reporting Program could be addressed after the adoption of the fifth-term Permit. In that event, Regional Board staff could withdraw requests for information in the Incomplete Notice related to changes to the Monitoring and Reporting Program. This way, efforts to change the fifth-term Permit could proceed separately from efforts to change the Monitoring and Reporting Program.

On December 11, 2013, Regional Board staff met with County staff and other representatives of the Co-permittees. During that meeting Regional Board staff agreed to limit the scope of the October 30, 2013 Incomplete Notice to exclude matters related to the Monitoring and Reporting Program. County staff also outlined their anticipated response to the Incomplete Notice. Subsequent to that meeting, Regional Board staff amended the Incomplete Notice to limit the scope accordingly in a letter dated December 12, 2013.

X. ECONOMIC CONSIDERATIONS

California Water Code Section 13241 requires the Santa Ana Regional Water Quality Control Board to consider certain factors, including economic considerations, in the adoption of water quality objectives. California Water Code Section 13263 requires the Santa Ana Regional Water Quality Control Board to take into consideration the provisions of California Water Code Section 13241 in adopting waste discharge requirements.

In *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal. 4th 613, the California Supreme Court considered whether regional boards must comply with California Water Code Section 13241 when issuing waste discharge requirements under California Water Code Section 13263(a) by taking into account the costs a Co-permittee will incur in complying with the permit's requirements. The Court concluded that whether it is necessary to consider such cost information depends on whether those restrictions meet or exceed the requirements of the federal Clean Water Act. The Court ruled that regional boards may not consider the factors in California Water Code Section 13241, including economics, to justify imposing pollutant restrictions that are less stringent than applicable federal law requires.

California Water Code Section 13377 specifies that discharge permits issued by regional boards must meet the federal standards set by federal law. In effect, Section 13377 forbids a regional board from considering any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act. Similarly, Section 13263 cannot authorize what federal law forbids and cannot authorize a regional board to use compliance costs to justify pollutant restrictions that do not comply with the Clean Water Act. However, when conditions or provisions in an NPDES permit are more stringent than federal law requires, California Water Code Section 13263 requires that the regional board consider the factors described in

California Water Code Section 13241 as they apply to those specific conditions or provisions.

As described in Section VI.E. above, the Regional Board finds that the conditions and provisions of this Order are not more stringent than the minimum federal requirements. Clean Water Act sections 402(p)(3)(B)(ii) and (iii) require MS4 permits to include requirements to effectively prohibit non-storm water discharges into the MS4s; to require controls to reduce the discharge of pollutants in in storm water to the maximum extent practicable; and such other provisions as the USEPA or the State determines appropriate.

The requirements in this Order may be more specific and detailed than those in the federal regulations under 40CFR122.26 or in USEPA guidance, but they are not more stringent. The requirements have been designed to be consistent with and within the federal statutory requirements in Clean Water Act sections 402(p)(3)(B)(ii) and (iii) and the related federal regulations and guidance. Consistent with federal law, all of the conditions and provisions in this Order could have been included in a permit adopted by USEPA in lieu of a permit issued by the State through the regional boards.

The inclusion of numeric Water Quality-Based Effluent Limits in this Order (e.g. WLAs) does not cause this Order to be more stringent than federal law. Federal law authorizes both narrative and numeric effluent limitations to meet state water quality standards. Both are equally allowable and the inclusion of either or both best management practice-based or Water Quality-Based Effluent Limits does not make an NPDES permit more stringent. Therefore, the Regional Board is not required to consider the factors set forth in California Water Code Section 13241.

Similarly, the Regional Board is not required to consider the factors in California Water Code Section 13241 to adopt permit requirements for the effective prohibition on the discharge of non-storm water discharges into the MS4; or for controls to reduce the discharge of pollutants in storm water to the MEP; or other provisions that the Regional Board has determined appropriate. These general requirements are mandated by federal law.

This Order includes monitoring and reporting requirements that are designed to demonstrate that the Co-permittees are complying with the municipal storm water requirements of the Clean Water Act. Clean Water Act Section 308(a) and 40 CFR122.41(h), (j) through (l); 122.44(i); and 122.48 require that NPDES permits specify monitoring and reporting requirements. Monitoring and reporting

requirements are also required by 40CFR122.26(d)(1)(iv)(D); 122.26(d)(1)(v)(B); 122.26(d)(2)(i)(F); 122.26(d)(2)(iii)(D); 122.26(d)(2)(iv)(B)(2); and 122.42(c). The Regional Board is also authorized by California Water Code Section 13383 to establish monitoring, reporting, and recordkeeping requirements that implement federal and state laws and regulations through NPDES permits.

Notwithstanding the above, the Regional Board has taken into account economic considerations. In doing so, however, it is not necessary for the Regional Board to perform a Cost-Benefit analysis or other formal economic analyses. Because of the lack of comprehensive or sufficiently-reliable economic data on both costs and benefits, performing a formal economic analysis is not practical at this time. However, the Regional Board will consider what limited economic information is available.

The USEPA, the State Water Resources Control Board, and the regional boards have attempted to evaluate the costs and benefits of municipal storm water programs. The resulting studies show a large variability in reported costs and that there is difficulty in obtaining reliable cost information.

In 1999, the USEPA summarized the conclusions of multiple studies performed to determine the cost of storm water management programs as part of its Phase II expansion of the NPDES storm water program[3]. The USEPA determined that the range of benefits from its Phase II expansion exceeds the range of regulatory costs. As part of their analysis, the USEPA reported that, based on appropriate cost data provided by 26 MS4 operators subject to Phase I, the average annual program costs were $9.08 per household (1998 dollars)[4]. The USEPA also reported that the average annual Phase II program costs were $9.16 per household (1998 dollars), comparable to the per-household costs of the Phase I program.

In 2003, staff of the Los Angeles Regional Water Quality Control Board performed a study of Phase I MS4 program costs[5]. Self-reported cost data provided in the MS4 operators' annual reports was used. The average annual cost in Los Angeles County was estimated to be $12.50 per household (2002 dollars)

[3] Federal Register/Vol. 64 No. 235/Wednesday, December 8, 1999/Rules and Regulations. P. 68791-68792.
[4] USEPA's cost estimates should be regarded as gross indicators of compliance costs, not actual compliance costs. See Government Accountability Office, May 2007. Further Implementation and Better Cost Data Needed to Determine Impact of EPA's Storm Water Program on Communities. GAO-07-479.
[5] Los Angeles Water Quality Control Board, 2005. Review and Analysis of Budget Data Submitted by the Permitees for Fiscal Years 2000-2003. P. 2.

In 2005, the State Water Resources Control Board commissioned a study by the California State University, Sacramento to assess costs of the Phase I MS4 program throughout the state[6]. The annual cost ranged from $18 to $46 per household (2005 dollars). The Fresno-Clovis Metropolitan Area represented the lower end of the range and the city of Encinitas represented the upper end.

For comparison purposes, the per-household cost information above has been adjusted for inflation using the average Consumer Price Index. All values were adjusted to 2013 dollars. The results are shown in Table TR-1 below.

Table TR-1: Comparison of estimates of MS4 program costs (per household)

Study	Reported Value(s)	Inflation-Adjusted Value (2013 dollars)
USEPA, 1999	$9.08 (Phase I) $9.16 (Phase II)	$12.98 (Phase I) $13.10 (Phase II)
Los Angeles Regional Water Quality Control Board, 2003	$12.50	$16.19
State Water Resources Control Board, 2005	$18 to $46	$21.48 to $54.90

A proper economic analysis of the cost of the Phase I program would involve a comparison of the MS4 operators' costs with and without the Phase I program. The result would be the marginal cost. Many of the reported Phase I program costs are not attributed solely to the program. In many cases, program elements such as street sweeping and litter control in general, are services that have been performed by the MS4 operators long before they were required by any Clean Water Act permit.

Therefore, the actual costs of the Phase I program for a Co-permittee is some portion of the reported costs. The State Water Resources Control Board's 2005 study, discussed earlier, estimated that 38% of the reported program costs could

[6] State Water Resources Control Board, 2005. NPDES Stormwater Cost Survey. P. ii.

be fully attributed to the MS4 permits. The remainder was attributed to the costs of pre-existing services provided by the Co-permittees[7]. Similarly, in their 2000 Annual Progress Report, the County of Orange reported that 20% of the program costs could be fully attributed to the MS4 permit[8, 9].

California Water Code Section 13241 includes the need to consider "economic considerations" under certain circumstances. Economic considerations include both the costs of compliance and also the economic benefit of protecting the beneficial uses of waters of the state. There is some information available to estimate the costs of MS4 permits. However, this is often not the same for estimating the benefits of protecting beneficial uses. Some beneficial uses, such as Industrial Process Supply for example, may have their value more readily monetized because there is a well-established market for the resource.

For other beneficial uses, monetizing their value is much more difficult. Certain techniques, such as Willingness to Pay and Travel Cost Analysis, have been employed by the USEPA at a national scale and in local studies in the Santa Ana Region, to value such things as beach recreation (a proxy for Water Contact and Non-Water Contact Recreation beneficial uses). But these techniques are more costly, typically requiring surveys of users or potential users. As the result, they are infrequently employed. However, two studies are useful in this report.

As part of their Phase II expansion of the NPDES program, the USEPA estimated that willingness to pay to improvements in freshwater quality for fishing and boating is approximately $158 to $210 per household (1998 dollars)[10]. Another study, conducted by California State University, Sacramento, reported that the annual household willingness to pay for state-wide clean water is approximately $180 per household (2005 dollars)[11].

Both of the above studies represent efforts to estimate the benefits of protecting beneficial uses. Both of these estimates considerably exceed the annual per-household costs of the MS4 programs summarized in Table TR-1 above[12].

[7] *Ibid*, P. 58.
[8] County of Orange, 2000, 2000 Annual Progress Report, P. 60.
[9] More recent data from the County of Orange is not available because the County no longer reports it.
[10] *Ibid*. P. 68793.
[11] State Water Resources Control Board, 2005. NPDES Storm Water Cost Survey. P. iv.
[12] It is not necessary to adjust these figures for inflation because they can be appropriately compared to costs that occur in the same years (1998 and 2005 respectively).

XI. GENERAL EXPLANATION OF PERMIT REQUIREMENTS

This Order is fundamentally based, in part, on the standard described in Clean Water Act Section 402(p)(3)(B)(iii), requiring "controls to reduce the discharge of pollutants to the maximum extent practicable." Section 402(p)(3)(B)(iii) also requires "such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." Further details on the basis of this Order are provided elsewhere in this Technical Report.

The "maximum extent practicable" ("MEP") standard is the federal technology-based standard that MS4 owners and operators must satisfy to comply with this Order. The regulatory provisions that further detail the MEP standard are found in 40 CFR Sections 122.26(d)(2)(iv) and 122.44(k)(2). Section XII of this Technical Report further explains the requirements of this Order which implement the more detailed regulatory provisions.

Section 301(b)(1)(A) of the Clean Water Act and 40 CFR Section 122.44(a) require that NPDES permits include technology-based effluent limitations. A technology-based effluent limitation is based on the capability of a model treatment method to reduce a pollutant to a certain concentration. Technology-based effluent limitations, in this case the MEP standard, represent the minimum level of control that must be imposed in a permit issued pursuant to Clean Water Act Section 402.

Neither Congress nor the USEPA has specifically defined the term "maximum extent practicable". Rather, the MEP standard is a flexible and evolving standard. Congress established the MEP standard so that administrative bodies would have "the tools to meet the fundamental goals of the Clean Water Act in the context of storm water pollution"[13]. The standard allows permit writers flexibility to tailor permits to the site-specific nature of MS4s and to require a combination of pollution controls that differ in different permits[14].

To provide clarification to the regional water quality control boards, the State Water Resources Control Board's Office of Chief Counsel issued a memorandum dated February 11, 1993 regarding the definition of "maximum extent practicable". In the memorandum, the Office of Chief Counsel interpreted the MEP standard to entail a "serious attempt to comply" and that "practical solutions

[13] Building Industry Ass'n of San Diego County v. State Water Resources Control Board (2004) 124 Cal.App.4th 866, 884.
[14] In re City of Irving, Texas, Municipal Storm Sewer System, (July 16, 2001), 10 E.A.D. 111 (E.P.A.), *6.

may not be lightly rejected". The memorandum states, "[in] selecting BMPs which will achieve MEP, it is important to remember that municipalities will be responsible to reduce the discharge of pollutants in storm water to *the maximum extent practicable*. This means choosing effective BMPs, and rejecting applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive." The memorandum further states that, "[after] selecting a menu of BMPs, it is of course the responsibilities of the discharger to insure that all BMPs are implemented."

This Order includes requirements for the implementation of programs in accordance with 40 CFR Sections 122.26(d)(2)(iv)(A) through (D). In summary, these requirements are intended to implement:

1) control measures to reduce pollutants in runoff from commercial and residential areas;
2) programs to detect and remove illicit discharges and improper disposal into the MS4;
3) programs monitor and control pollutants from certain industrial facilities; and
4) programs to implement and maintain structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites.

All of these programs have been detailed in the Co-permittees' 2003 DAMP and related planning documents. The essential elements of the programs have been synthesized from those documents and incorporated into the requirements of this Order.

This Order also includes numeric design standards for storm water runoff from new development and redevelopment in support of the MEP standard. The inclusion of these numeric design standards is supported by State Water Resources Control Board Order WQ 2000-11. This Order also includes more specific requirements for carrying out the "iterative process" of periodically evaluating and modifying or adding BMPs. These requirements support the MEP standard's evolving and flexible nature.

The Order uses the language "each Co-permittee" or "a Co-permittee" in many provisions to require performance of specific tasks, to accomplish a goal, or to have certain processes or mechanisms. This language is intended to clearly

indicate the responsible party for satisfying the provision. The language is not intended to dictate the specific manner in which the provision must be satisfied.

For example, each Co-permittee may adopt its own specific mechanisms to satisfy a permit requirement or the Co-permittees may collectively develop a uniform mechanism that is adopted by each of them. In the event that a required mechanism is not adopted, this language makes it clear that the Co-permittee lacking the mechanism is responsible for the violation and not the Principal Permittee or the Co-permittees collectively.

The Order has been written to include virtually all of the requirements of the fourth-term permit. As explained above, the Order also incorporates key elements of the 2003 DAMP and its companion documents. In particular, the Order incorporates elements of the 2011 Model Water Quality Management Plan and the Technical Guidance Document. However, the elements are not incorporated verbatim or incorporated by reference. Instead, the Order generally requires that the Co-permittees have effective processes or mechanisms to accomplish various purposes. In most cases, this Order does not dictate an outcome. Where specific outcomes are dictated (e.g. 10 Million “impressions”), they are typically carried over from the previous permit.

The processes and mechanisms required by this Order are based on those described or inferred from the Co-permittees’ existing program. The Co-permittees’ program is largely found in the 2003 DAMP and its companion documents and the LIPs. As explained earlier, Regional Board staff has found that the program, as practiced, is not always documented. In addition, Regional Board staff found through audits that certain important processes or mechanisms were absent from the Co-permittees’ planning documents, were not in place, or were deficient. This Order includes processes and mechanisms that represent an attempt to more fully flesh out the Co-permittees’ programs and address these issues.

The Co-permittees have various plans and programs whose development predates this Order. This Order avoids describing these plans and programs by their names. Instead, this Order requires that the Co-permittees have written plans and programs, and then describes their required elements. This approach avoids the appearance that the contents of those preexisting plans and programs supersede the requirements of this Order. Although many plans and programs certainly exist, they must comply with this Order. In some cases, those plans

and programs will need to be reviewed and updated in order for the Co-permittees to comply with this Order.

The federal NPDES regulations require applicants for MS4 permits to develop a proposed management program (40 CFR Section 122.26(d)(2)(iv)). The management program must include a "comprehensive planning process" and, where necessary, "intergovernmental coordination" for the "duration of the permit". The continued requirement for written plans and programs satisfies the federal requirement for a "proposed management program".

XII. EXPLANATION OF SPECIFIC PERMIT REQUIREMENTS

A. Sections I and II: General Responsibilities

Sections I and II establish the basic responsibilities of all of the Co-permittees, including the Principal Permittee. These Sections are designed to require implementation of the "iterative process". This process includes planning and documentation of program activities, execution, tracking of outcomes, and evaluation through comparison with performance metrics. These requirements are included in this Order pursuant to Clean Water Act Section 402(p)(3)(B)(iii) which, in part, allows the state to include provisions appropriate for the control of pollutants.

These Sections also describe the basic responsibilities for internal and external coordination within and among the Co-permittees respectively. These Sections require maintenance of records and the submission of reports that are adequate to determine compliance. Finally, these Sections require that the Co-permittees establish and maintain adequate legal authority to carry out the responsibilities necessary to comply with this Order.

B. Section III: Discharge Limitations/Prohibitions

Section III emphasizes the Co-permittees' responsibility to effectively prohibit the discharge of illicit/illegal discharges into their MS4s, unless authorized by a separate NPDES permit, or not otherwise prohibited as described. Clean Water Act Section 402(p) forms the basis of the requirements of this Section. MS4 permits (1) "shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers" and (2) "shall require [i] controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering

methods, and [ii] such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." (CWA § 402(p)(3)(B)(ii-iii)).

To satisfy these requirements, Section III expressly requires the Co-permittees to effectively prohibit discharges into the MS4 unless authorized by an NPDES permit. This section also prohibits discharges where pollutants have not been reduced to the MEP, with some exceptions. Section III includes provisions that prescribe programs to reduce allowable non-storm water discharges from both private and public property.

Discharges that are not prohibited are described in Table 2 and are exempt from the non-storm water discharge prohibition. These discharges have been continued from the previous permit with changes. Many of the discharges in Table 2 are listed in 40 CFR 122.26(d)(2)(iv)(B)(1) as being exempt unless "such discharges or flows are identified as significant sources of pollutants" to waters of the U.S.

Table 2 now includes discharges authorized by USEPA pursuant to Sections 104(a) or 104(b) of the Comprehensive Environmental Repsonse, Compensation, and Liability Act ("CERCLA"). These discharges typically consist of short-term, high-volume discharges from groundwater extraction well development or redevelopment or from state-required testing of potable water treatment plants, and occur as part of USEPA-authorized groundwater remediation action under CERCLA.

This Order authorizes the Co-permittees to discharge certain non-storm water subject to limitations and prohibitions. "*De Minimus*" discharges are authorized by this Order, subject to the requirements of NPDES Permit No. CAG998001. The requirements include the need to submit a report of waste discharge in any allowable format, including submittal of a Notice of Intent form. However, the Co-permittees are encouraged to submit these reports of waste discharge in a uniform electronic format.

Additional non-storm water discharges that are not authorized by separate NPDES permits or exempted in Table 2 are authorized by this Order. These include discharges from swimming pools and diversions from waters of the U.S. This Section also includes various limitations and prohibitions which are permitted by 40 CFR Section 122.44. 40 CFR Section 122.44 allows the use of discharge prohibitions, technology-based effluent limitations, and water quality-based effluent limitations. All of the limitations and prohibitions in this Order are

continued from the previous Permit and are derived from the Basin Plan or NPDES permits.

C. Section IV: Receiving Water Limitations

Section IV has been modified to more closely align with the State Water Resources Control Board's precedential orders described in Section VII of this Technical Report. The language of this Section was modified particularly to align with language found in Order No. 99-05.

Receiving water limitations are included in all NPDES permits issued pursuant to CWA section 402. Section 402(p)(3)(B)(iii) of the CWA authorizes the inclusion of "such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants." This requirement gives USEPA or the State permitting authority discretion to determine what permit conditions are necessary to control pollutants. In its Phase I Storm Water Regulations, Final Rule, USEPA elaborated on these requirements, stating that, "permits for discharges from municipal separate storm sewer systems must require controls to reduce the discharge of pollutants to the maximum extent practicable, and where necessary water quality-based controls" (see 55 Fed. Reg. 47990, 47994 (Nov. 16, 1990)). USEPA reiterated in its Phase II Stormwater Regulations, Final Rule, that MS4 "permit conditions must provide for attainment of applicable water quality standards (including designated uses), allocations of pollutant loads established by a TMDL, and timing requirements for implementation of a TMDL."[15] USEPA Region IX has also affirmed the agency's position that MS4 discharges must meet water quality standards in a series of comment letters on MS4 permits issued by various California regional water boards[16].

California Water Code section 13377 requires that NPDES permits include limitations necessary to implement water quality control plans. Both the State Water Board and Regional Water Board have previously concluded that discharges from the MS4 contain pollutants that have the reasonable potential to cause or contribute to excursion above water quality standards. As such, inclusion of receiving water limitations is appropriate to control MS4 discharges.

The inclusion of receiving water limitations is also consistent with the Ninth Circuit Court of Appeal's ruling in *Defenders of Wildlife v. Browner* (191 F.3d

[15] See, e.g., Phase II Stormwater Regulations, Final Rule, 64 Fed. Reg. 68722, 68737.
[16] See, e.g., letter from Alexis Strauss, Acting Director, Water Division, USEPA Region IX, to Walt Pettit, Executive Director, State Water Board, re: SWRCB/OCC File A-1041 for Orange County, dated January 21, 1998.

1159, 1166 (1999)). This ruling shows that the permitting authority has discretion regarding the nature and timing of requirements that it includes as MS4 permit conditions to attain water quality standards.

The Ninth Circuit Court of Appeals recently explained that, "[w]ater quality standards are used as a supplementary basis for effluent limitations [guidelines] so that numerous dischargers, despite their individual compliance with technology based effluent limitations, can be regulated to prevent water quality from falling below acceptable levels" (*NRDC v. County of Los Angeles* (2011) 673 F.3d 880, 886). Receiving water limitations are necessary to protect the beneficial uses of the receiving waters and are included in this Order to ensure that individual and collective discharges from the MS4 do not cause or contribute to exceedances of water quality standards.

The receiving water limitations in this Order consist of all applicable numeric or narrative water quality objectives or criteria, or limitations to implement the applicable water quality objectives or criteria for receiving waters contained in Chapter 4 of the Basin Plan, or in water quality control plans or policies adopted by the State Water Resources Control Board ("State Board"). These include Resolution No. 68-16. Or in federal regulations, these water quality objectives or criteria include, but are not limited to, 40 CFR sections 131.12 and 131.38. The water quality objectives in the Basin Plan and other State Board plans and policies have been approved by USEPA. Combined with the designated beneficial uses, the water quality objectives constitute the water quality standards required under federal law.

The receiving water limitations language in this Order is based on precedential State Board Orders WQ 98-01 and WQ 99-05. This Order includes three main provisions related to receiving water limitations. First, consistent with CWA Section 402(p)(B)(3)(iii) and 40 CFR section 122.44(d)(1), it includes a provision stating that discharges from the MS4 that cause or contribute to an exceedance of receiving water limitations are prohibited. This is also in accord with the State Water Board's finding in Order WQ 98-01 ("The [State Board] agrees that the NPDES permit must prohibit discharges that "cause" or "contribute" to violations of water quality standards."). Second, it includes a provision stating that discharges from the MS4 of stormwater or non-stormwater, for which a Permittee is responsible, shall not cause or contribute to a condition of nuisance[17].

[17] Wat. Code, § 13377 ("the state board or the regional boards shall . . . issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the [CWA], thereto, together with any more stringent effluent standards or limitations

Third, it includes a provision that states that Permittees shall achieve these two prohibitions "through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the storm water management program and its components and other requirements of this Order including any modifications." This third provision elucidates the process by which Permittees are expected to achieve the first two provisions and then outlines the "iterative process" whereby certain actions are required when exceedances of receiving water limitations occur and discharges from the MS4 are implicated.

To implement this "iterative process", Section IV of this Order requires the development of a plan revising the storm water management program and its components to include additional BMPs, an implementation schedule and additional monitoring to address the exceedances; and implementing the revised storm water management program. This protocol also includes assessing the effectiveness of BMPs based in part on monitoring results; and, based on the results of the assessment, taking additional actions such as implementing additional BMPs and/or modifying BMPs to improve their effectiveness. This protocol is consistent with USEPA's expectations for MS4 permits[18].

D. Section V: Implementation Agreement

Section V requires that the Co-permittees have inter-agency and inter-Co-permittee agreements that are necessary to satisfy the requirements of the Order. Various agreements have been reported to exist to carry out certain programs, such as the SSO program. Some agreements may need to be reviewed and updated in order to comply with the Order. Section V is supported by 40 CFR Section 122.26(d)(2)(i) which recognizes that a "series of contracts" may be necessary to comply with an MS4 permit; and by 40 CFR Section 122.26(d)(2)(i)(D), which requires "interagency agreements among coapplicants" for MS4 permit coverage.

E. Section VI: Legal Authority/Enforcement

Section VI largely continues requirements that the Co-permittees secure and maintain the legal authority to control the discharge of pollutants according to the requirements of this Order. In summary, 40 CFR 122.26(d)(2)(i) requires

necessary to implement waste quality control plans, or for the protection of beneficial uses, or to prevent nuisance").

[18] See, e.g., USEPA 2002 memorandum, "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs."

applicants for MS4 discharges to demonstrate adequate legal authority that enables them to: control the contribution of pollutants from industrial activity; prohibit illicit discharges; control spills, dumping, or disposal of materials other than storm water; control the contribution of pollutants between MS4s through interagency agreements; require compliance with ordinances, permits, contracts, or orders; and carry out inspection, surveillance, and monitoring procedures necessary to determine compliance. Section VI is intended to support the requirements of 40 CFR 122.26(d)(2)(i).

This Order describes requirements but does not grant the Co-permittees any authorities that may be necessary to comply. The Co-permittees typically secure this authority through their municipal ordinances. All of the Co-permittees are reported to have adopted model water quality ordinances to comply with past versions of this Order. These water quality ordinances include measures to enforce compliance through inspections and sanctions if necessary.

This Order, and past versions, requires the Co-permittees to impose a series of effective, progressive sanctions to compel compliance with regulatory requirements related the control of discharges of pollutants to their MS4s. This Order adds new requirements for the Co-permittees to track and evaluate challenges to their authority. Where a valid challenge is discovered, the Co-permittees must report it along with a plan to make their authority adequate.

F. Section VII: Illicit Discharges, Illicit Connections, and Illegal Dumping; Litter, Debris and Trash Control

Section VII includes requirements intended to cause the Co-permittees to effectively prohibit illicit discharges and illicit connections (“ID/IC”) and to detect and remove improper disposal to MS4s in accordance with 40 CFR 122.26(d)(2)(iv)(B). Illicit discharges are defined in the Glossary of this Order and exclude discharges that are authorized under an NPDES permit. As noted there, the definition provided in the Glossary comes from 40 CFR 122.26(b)(2).

In its 1990 rulemaking, USEPA explained that the illicit discharge detection and elimination program requirement was intended to begin to implement the Clean Water Act’s provision requiring permits to “effectively prohibit non-storm water discharges.” (55 Fed.Reg. 47990, 47995.) Discharges in Table 2 of this Order are not illicit discharges. Illicit connections are not defined in this Order but are conveyances for illicit discharges.

Section VII clarifies the Co-permittees’ responsibilities with respect to illegal dumping (or improper disposal), which was described briefly in the previous

permit. The Co-permittees' responsibility is limited to illegally dumped material that has the potential to result in a discharge of pollutants to an MS4. This Order also clarifies that Sanitary Sewer Overflows ("SSOs") are a sub-class of illicit discharges.

Section VII describes requirements for programs to address illicit discharges, illicit connections, and illegal dumping. These requirements are based on the Co-permittees' current ID/IC program, the "Countywide Area Spill Control Program", and State Water Resources Control Board Order No. 2006-0003-DWQ, "Statewide General Waste Discharge Requirements for Wastewater Collection Agencies" (Order No. 2006-0003-DWQ). Except for general requirements for IDICs as a whole, this Order does not create new SSO requirements for Co-permittees already subject to Order No. 2006-0003-DWQ.

Section VII requires that the Co-permittees initiate source investigations based on objective and subjective dry-season monitoring results. Source investigations are triggered by subjective observations and statistical thresholds for hydrology and pollutant parameters. The thresholds are established for each monitoring station based on ongoing collections of data. According to the Co-permittees, these statistical thresholds have been developed based on control charts, which are used to identify extreme outliers in a collection of monitoring data. Extreme outliers are monitoring results that fall outside an established number of standard deviations for the data set. These extreme values may indicate the occurrence of an illicit discharge or illicit connection. Their occurrence is a trigger for source investigations. Consequently, they function as numeric action levels.

The approach required by Section VII and practiced by the Co-permittees during the previous permit term to triggering source investigations represents an application of statistical theories for quality control[19]. Applying theories of quality control, the variation in pollutant concentrations in water quality data sets is attributed to "common causes" and "special causes". Applied to runoff quality control, special causes are identifiable, discrete events that can be corrected to improve water quality. Common causes are essentially random noise where there are no specific events that can be identified and addressed to improve water quality. Source investigations may be useful for addressing special causes, but are unlikely to be effective at addressing common causes.

In practice, control charts and similar statistical tools identify extreme outliers that may be well above water quality standards. These extreme outliers trigger

[19] E.g. Deming, W.E. (1975) On probability as a basis for action*, The American Statistician*, 29(40, p. 146-152; Wheeler, D. J. & Chambers, D. S. (1992*) Understanding Statistical Process Control*, ISBN 0-945320-13-2

source investigations that are performed to identify and eliminate their special causes. As special causes are eliminated, the variation in water quality should lessen over time. New extreme outliers can then be identified and investigated. Each successive round of investigations should eliminate more special causes, reduce variation, and improve water quality. At some point though, source investigators may not be able to identify special causes even though pollutant levels continue to exceed water quality standards. At that point, exceedances may be the result of common causes and require a different approach.

Examples where this pollutant behavior could occur are where pollutants are from ubiquitous sources, such as pathogens, nutrients, or litter. In these examples, source investigations would be useful to resolve discrete events, such as sewage spills, regular fertilization work by a single or group of influential dischargers such as nurseries or golf courses, or litter from scheduled festivals or other public gatherings. But source investigations would not be useful to address more random events such as pathogen, nutrient, or litter pollution caused by the collective actions of numerous independent individuals within a monitored watershed. Other more preventative BMPs, such as public education, might be more effective for common causes.

The use of control charts and similar statistical tools allows the permittees to methodically use source investigations to identify and eliminate special causes of water quality standard exceedances. At the same time, the Co-permittees can avoid using source investigations on common causes, which may be more effectively addressed with more general, preventative BMPs.

Section VII also includes specific requirements for a program to reduce and/or eliminate the discharge of trash and debris to waters of the U.S. The program must include an objective evaluation of measures employed for this purpose. Those measures include ‘soft measures’ such as public education and litter collection, and ‘hard measures’ such as trash booms and structural controls. The Co-permittees are not expected to evaluate each measure individually unless doing so would be practical and would provide useful information.

Section VII includes new requirements that effectively require that the Co-permittees formally evaluate new technologies for the control of trash and debris. An evaluation is not necessarily required to be objective. Subjective factors, such as a structural control’s ease of accessibility and maintenance, may also be considered, consistent with the MEP standard. The Principal Permittee must demonstrate that formal evaluations are occurring, and report them in the Annual Progress Report. This requirement is intended to cause the Co-permittees to actively consider new technologies, share information on those technologies, and

in some situations, to provide a means for feedback to vendors to improve products. This requirement is not intended to cause the Co-permittees to develop formal standards or processes by which vendors must demonstrate the efficacy of their products; the Co-permittees may rely on other objective third-party sources of information for this purpose.

G. Sections VIII, IX, and X: Municipal Inspections of Construction, Industrial, and Commercial Sites

Sections VIII, IX, and X continue earlier requirements for inspections of construction, industrial and commercial sites within each Co-permittees' jurisdiction with some modifications. The requirements of these Sections are supported by 40 CFR Sections 122.26(d)(2)(iv)(D), 122.26(d)(2)(iv)(C), and 122.26(d)(2)(iv)(A), which require programs to implement control measures for pollutants in runoff from construction, industrial, and commercial sites respectively. Certain other relevant control measures for these sites (e.g. public education) are described in other Sections of this Order.

The scope of what constitutes a construction site has not been changed in Section VIII. However, Co-permittees are now only required to inspect construction sites whose actual or expected duration exceeds two weeks. This modification has been made recognizing that many construction projects may begin and conclude without being subject to a rain event and before Co-permittees' staff can inspect them. This modification is intended to allow Co-permittees to prioritize projects that have a longer duration. The Co-permittees must necessarily track all construction sites in order to identify projects whose duration exceeds two weeks and consequently require inspection.

Sections IX and X both require that the Co-permittees maintain inventories of industrial and commercial sites. This, and past, versions of NPDES Permit No. CAS618030 do not provide narrative definitions to distinguish between "industrial" and "commercial" businesses. However, there is a need to provide some guidance to the Co-permittees on how to classify businesses in their jurisdictions.

Some common definitions describe "industrial" as referring to a business involved in the manufacture of goods whereas "commercial" is a term referring to a business whose sole motivation is gaining profit. In this sense, "industrial" is a sub-category of "commercial" sites. Other common definitions cast "industrial" and "commercial" as similarly overlapping categories: "industrial" businesses engage in manufacturing goods (for sale) while "commercial" businesses engage

in the sale or trade of goods. For the purposes of this Order, these common definitions are workable and there is no need for the creation of regulatory definitions in this Order.

In keeping with common definitions of “industrial” and “commercial” businesses, the list of activities that guide the Co-permittees’ development of their commercial business inventory has been modified. The list has been placed in alphabetical order. “Transportation, storage, or transfer of pre-production plastic pellets, powders, or grindings” has been replaced with “Transportation services for passengers, parcels, or freight”. This category excludes business that manufacture products from plastic pellets, powders, or grindings and properly places them in the Co-permittees’ industrial inventory. The new category will also include transportation services for passengers and a wide variety of goods, including plastics.

This Order continues requirements for industrial and commercial facilities to be classified into three categories: “high-priority”, “medium-priority”, and “low-priority”. For both industrial and commercial sites, “high-priority” sites must be inspected once per year; “medium-priority” sites must be inspected once every two years; and “low-priority” sites must be inspected once per permit term (5 years). This Order continues the previous permit’s criteria for distributing the Co-permittees’ inventory of sites among these categories with some modifications.

The previous permit provided criteria for categorizing some industrial sites in the “high-priority” category but otherwise left the Co-permittees’ significant discretion. The Co-permittees developed further guidance in the 2003 DAMP. The permit criteria and the 2003 DAMP guidance determined the distribution of industrial sites among the priority categories; this subsequently determined the industrial inspection burden each Co-permittee bears.

For commercial sites, the previous permit prescribed a minimum priority distribution: 10% were to be “high-priority; 20% were to be “medium-priority”; and the remainder was, by default, “low-priority”. Additional criteria was described that would cause some sites to be moved into higher priority categories. This prescriptiveness was triggered by the findings of audits during the third-term permit where certain Co-permittees were found to be exercising their discretion to minimize their inspection burden in violation of the MEP standard. The basis of the prescribed distribution was the “best professional judgment” of Regional Board staff who were also experienced site inspectors.

In their Report of Waste Discharge, the Co-permittees have requested changes to the priority distributions for both industrial and commercial sites. The principal

basis of this request was analyses of self-reported inspection outcomes. The Co-permittees' analyses conclude that their inspections are "demonstrating consistent high levels of compliance from year to year".

For construction sites, the Co-permittees reported that the percentage of inspections resulting in their staff finding a violation has been consistently less than 10%. For industrial and commercial sites, "consistent high levels of compliance" means 78% to 89% compliance. The Co-permittees give some credit to their inspection programs, but also credit new requirements in the Construction General Permit, adopted during the previous permit term, and published guidance from CASQA.

The Co-permittees have implicitly established site "compliance" as a performance indicator for their inspection programs. This performance indicator is flawed. Inspections cannot detect "compliance" with great certainty; they can only detect "noncompliance" with certainty. Assuming that an inspector could determine that a site is incompliance exaggerates the scope of the inspector's observations. An inspector can know what violations are discovered; but they cannot know what violations they have not. Inspectors are unlikely to discover every instance of noncompliance in a single inspection. Inspections are observations that amount to a snapshot in time of a site's condition. Even if an inspector could conclude that a site is in absolute compliance during a single inspection, site conditions can change and that conclusion may be short-lived.

Inspection outcomes can be influenced by the manner in which sites are selected, in how the inspection is carried out, and how it is recorded. This influence can go either way in terms of how it affects "levels of compliance". Inspections are not completely unbiased activities and inspection outcomes are a poor indication of the effectiveness of an inspection program.

There are several ways that inspections are biased. First, the site selection may be purposefully biased to increase or decrease the chance of discovering violations. For example, the criteria in the permit is intended to prioritize sites that are expected to pose a greater threat to water quality, possibly due to a greater likelihood of having violations. Second, the manner of the inspection can introduce bias. Whether or not Co-permittees choose to provide prior notice to the site operators will increase or decrease the likelihood of discovering violations. Additionally, how the inspection is documented will also introduce bias. An inspector may choose to not record a discovered violation if it was quickly remedied during the inspection. Or, when entered into the Co-permittees database, either the discovery of the short-lived violation or the outcome of compliance may be recorded, thereby affecting the overall program outcomes.

These and other factors negatively influence the validity and reliability of the Co-permittees' stated measure of effectiveness (percent compliance/non-compliance) for their overall inspection programs. Nonetheless, this Order provides some relief for the Co-permittees' inspection burden, but not on the basis provided by the Co-permittees.

The regulatory burden that this Order places on the Co-permittees is not fully described by 'inspection frequencies' or even the total number of inspections. The regulatory burden is better described by the total expected number of inspections over the permit term *and* the level of effort needed for each inspection.

The total expected number of inspections is calculated using the inspection frequencies, the total number of facilities, and how facilities are distributed among the priority categories (high, medium, and low). The level of effort is not easily measured, but can be characterized by the type of inspection. For the sake of discussion, there are two types: "inspection from vehicle" and "personal visit". Inspections from vehicles are essentially patrols that typically take significantly less time and effort than personal visits.

The previous permit did not dictate the type of inspection directly. The type of inspection was dictated indirectly by the DAMP. The DAMP describes the inspection protocols and those protocols became mandatory through their incorporation by reference in the previous permit. The DAMP protocols indicate that all inspections were to be by personal visits.

As with the previous permit, this Order does not dictate the type of inspection. But it also does not incorporate the DAMP protocol. The result is that this Order gives the Co-permittees substantial discretion to amend their protocol and select the type of inspection that is suitable to the individual characteristics of a site.

The Co-permittees have recommended that the type of inspection be dictated by the site's priority ranking. This is inappropriate. A high-priority site with a history of past violations benefits from the deterrent effect and education of a personal visit, but a cursory and incomplete inspection of any site by any method has little value. Alternately, a site that invites access, is easily visible from a vehicle, and has no observed violations is generally suitable for an inspection from a vehicle. A site's priority ranking does not necessarily indicate if the site has characteristics that make it suitable for an inspection from a vehicle.

The regulatory relief that this Order provides for both industrial and commercial site inspections is reasonable and proportional to the degree of compliance reported by the Co-permittees in the Annual Progress Reports. According to the

report of waste discharge, the Co-permittees performed 25,622 commercial and 10,937 industrial site inspections over the permit term. As shown in Table TR-2 below, the previous permit required that the Co-permittees should have performed an expected 22,810 commercial and 9,486 industrial inspections[20]. The actual number of inspections performed over the past permit term exceeds the expected number.

This accomplishment indicates that the Co-permittees *collectively* have the resources to comply with the previous permit in both terms of number of inspections and level of effort. However, collective effort is not the measure used to determine compliance. Audits and reviews of individual Co-permittees and their reports show that a few have not complied either with the number of inspections, their distribution among the priority categories, or both. In cases where inspections were not correctly distributed among the priority categories, the principal cause appeared to be insufficient information management systems to direct inspection resources; not insufficient personnel or attention. This suggests that the inspection burden is problematic for some Co-permittees. However, evidence of widespread hardship on the Co-permittees has not been provided. Therefore only a moderate amount of regulatory relief is appropriate.

This Order changes the previous permit's commercial site distribution from 10% high-priority, 20% medium-priority, and 70% low-priority to one that more closely resembles a Pareto distribution or, more commonly the "80-20 rule". This distribution applies to many situations and was roughly approximated by the previous permit's distribution. A precise application of a Pareto distribution over three categories results in a 4%, 16%, and 80% distribution. This Order adjusts this distribution slightly for ease of use and requires commercial sites to be distributed as 5% high-priority, 15% medium-priority, and 80% low-priority[21].

To demonstrate the regulatory relief from industrial and commercial facility inspections that this Order provides, Regional Board staff compared the expected number of inspections that would be required under the requirements of this Order and Co-permittee's proposed Options 1 and 2. The related requirements were applied to the last permit term's reported industrial and commercial inventory to calculate the expected number of inspections that would have been required over the previous 5-year term. This allows a comparison of the inspection burden produced by the requirements of this Order and the Co-permittees' Options 1 and 2. This is a backwards-looking comparison and does

[20] The term "expected number of inspections", like with any "expected" value described in this Order, is used as a measure of predicting the anticipated inspection burden. The calculation of an "expected" value is a planning tool that describes outcomes under different circumstances; it is not a technique for measuring compliance.
[21] This adjustment increases the number of expected inspections by 2% versus without the adjustment.

not predict the inspection burden in the future. But it is useful to illustrate the degree of regulatory relief each scenario could provide.

The comparison is shown in Table TR-2 below in terms of numbers of inspections. The comparison does not take into consideration the reduction in level of effort caused by allowing some inspections to occur from a vehicle. This cannot be calculated without knowing which sites have the characteristics appropriate for an inspection from a vehicle. The grey columns in Table TR-2 also show the percent change relative to the expected total inspections that were necessary to comply during the previous permit.

Table TR- 2: Comparison of the number Expected Inspections

Site Type	Reported inspections over 5-years (2008-2013)	Expected inspections over 5-years (per previous permit's requirements)	Expected inspections over 5-years (per this Order's requirements)	Expected inspections over 5 years (Option 1)	Expected inspections over 5 years (Option 2)
Commercial	25,622	22,810	18,114 (26% decrease)	15,251 (51% decrease)	13,418 (57% decrease)
Industrial	10,937	9,486	9,486 (no change)	1,036 (89% decrease)	5,181 (45% decrease)
Total	36,559	32,296	27,600 (15% decrease)	16,287 (50% decrease)	18,599 (42% decrease)

Table TR-2 shows that, based on the annual inventory reported over the previous permit's term, Option 1 requires the least number of total expected commercial and industrial site inspections, reducing them by 50% over the previous permit. Option 1 proposes that many lower-priority sites would be inspected on an as-needed basis. Since the number of 'as-needed' inspections is not known, the total number of expected inspections over the permit term cannot be reliably estimated under Option 1. However, the *minimum* number of total expected inspections under Option 1 would be 16,287. Option 2 reduces the number of expected inspections by 42% over the previous permit. In comparison, this Order reduces the number of expected inspections by 15%.

Additional reductions in the regulatory burden under this Order and Options 1 and 2 are achieved by allowing the Co-permittees to perform inspections by vehicle, reducing the level of effort. Reductions in the regulatory burden caused by this improved flexibility cannot be reliably measured. Reductions in the total number of expected inspections are more easily measured.

Considering the degree of compliance that the Co-permittees have achieved over the past permit term does not demonstrate widespread hardship that deserves the relief that either Option 1 or Option 2 would provide. This Order provides a reasonable degree of regulatory relief by decreasing the number of expected inspections by approximately 15% and by allowing inspections from vehicles.

For construction sites, this Order also provides regulatory relief by limiting inspections to those construction sites that have an expected or actual duration of two weeks. As with commercial and industrial sites, this Order now also allows inspections from vehicles. Although difficult to measure, both of these permit modifications allow regulatory relief that is proportional to the Co-permittees' apparent ability to comply.

H. Section XI: Residential Program

40 CFR Section 122.26(d)(2)(iv)(A) requires, in part, that applicants for MS4 permits employ structural and source control measures to reduce pollutants from residential areas. The previous permit describes a separate public education and enforcement program for residential areas. The requirements largely overlapped with requirements in public education and illicit discharges/illicit connections. Residential areas will continue to be addressed in this Order through more general requirements in Public Education and elsewhere. Specific requirements have been removed in this Order so that the Co-permittees can prioritize water quality issues based on feedback gained through the iterative process. This Order reserves Section XI as a placeholder so that there is general continuity between the organization of the previous permit and this one.

I. Section XII: New Development (Including Significant Redevelopment)

The requirements of Section XII are intended to satisfy 40 CFR Section 122.26(d)(2)(iv)(A)(2) to reduce the discharge of pollutants from areas of new development and significant redevelopment. Section XII also includes a requirement that is intended to advance work to retrofit existing flood control facilities to remove pollutants as required by 40 CFR Section 122.26(d)(2)(iv)(A)(4). 40 CFR Section 122.26(d)(2)(iv)(A) requires, in part, the

applicants for MS4 permits provide both “structural and source control measures to reduce pollutants from runoff from commercial and residential areas”.

Section XII has been expanded to incorporate synthesized elements of the 2011 Model Water Quality Management Plan and its accompanying Technical Guidance Document. Requirements regarding the sizing of structural treatment controls, LID prioritization, Hydrologic Conditions of Concern, and classification of “priority projects”, which require project Water Quality Management Plans (“WQMPs”), and “non-priority projects” have been retained in this Order with modifications.

40 CFR Section 122.26(d)(2)(iv)(A)(2) requires, in part, that the Co-permittees’ management program include “a description of planning procedures including a comprehensive master plan to develop, implement, and enforce controls to reduce the discharge of pollutants from [MS4s] which receive discharges from areas of new development and significant redevelopment.” Section XII of this Order includes requirements for the Co-permittees to address these planning requirements in part through their existing planning procedures.

The State of California has delegated land use planning authorities to the counties and incorporated cities and seldom is involved in local land use and development decisions. California Government Code Sections 65000 *et seq.* generally establishes a framework for local planning procedures, but cities and counties adopt their own unique responses to the issues that they face.

At the broadest levels, the Co-permittees develop General Plans and Specific Plans. These and other land-use planning mechanisms fit within the meaning of “planning procedures” and “comprehensive master plan[s]” used in 40 CFR 122.26(d)(2)(iv)(A)(2). Because each Co-permittee generally has their own land use planning authorities and related procedures, requirements pertaining to planning procedures are best addressed at the local level; the Principal Permittee may develop guidance, but cannot compel implementation by the other Co-permittees. Consequently, Section XII requires that the Co-permittees each address their planning procedures through the General Plan update process, Specific Plan process, and others on an opportunistic basis.

The Co-permittees have broad authority to regulate activities within their communities. The scope of regulated activities and the manner in which they are regulated can vary among Co-permittees. The intent of Section XII in this Order and the past has been to cause the Co-permittees to exercise their authority so that the potential water quality impacts of past and future urban development are minimized. The challenge has been how to best identify that subset of projects,

from the varied universe of projects that each Co-permittee regulates, which have a significant potential to impact water quality, and to develop a process that efficiently and effectively addresses those impacts.

In order to better address the challenge of identifying appropriate projects, clarifying language has been added to Section XII.

- Subsection XII.B. makes it clear that Co-permittees must consider the whole of the project in classifying a project as a priority or non-priority project.
- In Subsection XII.B.5., projects consisting of the replacement, upgrade, or installation of dry utilities, sanitary sewer, or water supply distribution lines in existing transportation rights of way have been excluded from "redevelopment projects" that are priority projects. This is because the scope of such projects is too narrow to afford opportunities to include structural treatment control BMPs.
- The language of Subsection XII.B.5. has been modified to allow a Co-permittee to permit the continued use of structural treatment controls installed as part of a previously-approved WQMP when a portion of the site is redeveloped. This allowance does not apply if the old WQMP was not properly approved or implemented.
- In Subsection XII.M., language has been included to allow Co-permittees to exclude projects that do not affect areas that are exposed to storm water, or which are not sources of urban runoff, from being considered non-priority projects.

The previous permit defines categories of projects for which the Co-permittees' approval requires the preparation of a project WQMP. The Co-permittees have sought to limit this requirement to projects that are subject to "discretionary approval". This term has not been defined by the Co-permittees but is presumed to have the same meaning as "discretionary action" under CEQA. The strict application of the term under CEQA would essentially allow one Co-permittee to permit a project without a WQMP, whereas the same project in another city would require a WQMP due to local preferences and permitting idiosyncrasies[22]. Whatever the meaning, the Co-permittees' application of the term must not be used to contradict the requirements of this Order or to undermine the MEP standard. As such, the term "discretionary" has been omitted with respect to new development projects in this Order.

[22] Leon, Jorge, July 7, 2000, Post-Hearing Brief, The Cities of Bellflower, Burbank, et al. v. California Regional Water Quality Control Board et al., File Nos. A-1280; A1280(a); A-1280(b), State Water Resources Control Board.

Section XXII of this Order requires new developments that are regulated by the Co-permittees to employ source-control, site-design and structural treatment controls to remove pollutants from urban runoff. This Order is intended to provide the Co-permittees with a method to address the water quality impacts of new development consistent with the requirements of CEQA and 40 CFR Section 122.26(d)(2)(iv)(A). These requirements are intended to address projects that may have an impact on water quality.

New development projects are classified into two types: priority and non-priority projects. Priority projects must employ source-control, site-design, and structural treatment controls. Non priority projects must employ source-control and site-design controls, but do not have to employ structural treatment controls unless practicable. A non-priority project may be required to use off-site structural treatment controls if available. Priority projects are differentiated from non-priority projects by the categories shown in Subsection XII.B.5. of this Order.

For priority projects, Co-permittees must have a Water Quality Management Plan ("WQMP") prepared. The project WQMP is intended to accomplish several purposes. First, the project WQMP documents the rationale behind the selection of structural treatment controls. Second the WQMP functions as an enforcement mechanism to provide for the proper construction, operation and maintenance of structural treatment controls for both the project proponent and their successors and assigns over the life of the project. For some larger projects, the project WQMP can serve as a planning document for the design, construction, and funding of regional and sub-regional structural treatment controls. As such, it is important that subsequent WQMPs and non-priority project plans be consistent with the larger project WQMP. It is also important that project WQMPs be protected against loss or damage in a manner that is commensurate with the expected duration of the project.

This order promotes regional and sub-regional structural treatment controls essentially by permitting their use where they have been planned for according to the requirements of this Order. In the absence of a planned or proposed structural treatment control facility, structural treatment controls must be on-site for a project. Regardless of the location of the structural treatment controls, all priority projects must have source and site-design controls. Even when there is an offsite structural treatment control available for a project, that project may be required to employ certain pretreatment controls in order to protect the offsite facility from requiring an unusual level of maintenance or from experiencing premature failure. This order anticipates that the operator of the offsite facility

will establish pretreatment criteria for new developments that discharge into the facility.

This order requires the Co-permittees to establish a program for the improvement of project WQMPs. The Co-permittees must have written technical guidance for the preparation of project WQMPs. The 2011 Model WQMP and its accompanying Technical Guidance Document are expected to serve this purpose. These documents may require some modifications in order to comply with this Order. However, since this Order no longer incorporates the documents by reference, the Co-permittees may make the necessary changes independently, without the Executive Officer's approval. In a similar way, resulting project WQMP process improvements may also be made independently. However, all changes are governed by the requirements of this Order.

1. Hierarchy for Structural Treatment Controls

This Order maintains the hierarchy for the selection of structural treatment controls for priority projects that was prescribed in the previous permit. In order to communicate this clearly, this Order establishes terminology to categories and subcategories of structural treatment controls. This terminology is defined in the Glossary of the Order and is explained here.

The hierarchy requires the greatest preferential consideration for retention LID best management practices. Retention LID BMPs are a subcategory of LID BMPs where the design capture volume is either infiltrated into the ground; used for irrigation, process water, or other purposes; or is evaporated or evapotranspirated. Co-permittees are responsible for demonstrating in the project WQMP that retention LID BMPs, located either on or off-site, are given priority consideration according to this Order's requirements, before considering any of the subsequent categories of structural treatment controls in the hierarchy.

The second category of structural treatment controls that must be considered are biotreatment control BMPs. As indicated by the name, biotreatment control BMPs are a subcategory of LID BMPs that principally remove pollutants through a combination of infiltration, evapotranspiration, biological uptake or transformations, or degradation. While a significant portion of the design capture volume is typically infiltrated or evapotranspirated, this is incidental and no particular portion must be treated in either manner. After passing through a biotreatment control BMP and partly evaportranspirating and infiltrating, the remaining portion of the design capture volume is typically discharged from the

site. Where retention LID BMPs are infeasible, biotreatment control BMPs must be used onsite or offsite where feasible.

This Order requires that biotreatment control BMPs be designed to treat 1.5 times the design capture volume. This requirement is based on the findings of Appendix D, BMP Performance Guidance, to the Ventura County Technical Guidance Manual for Storm Water Quality Control Measures (Manual Update 2011)[23]. In summary, the Ventura County Technical Guidance Manual found that biotreatment control BMPs that were sized to treat 1.5 times the design capture volume could provide equivalent or better reductions in loads compared to retention LID BMPs for all pollutants of concern. The Regional Board recognizes that the Ventura County study was based on local hydrologic and soil conditions. The Co-permittees have been invited to estimate a similar factor using local conditions for biotreatment control BMPs in Orange County, but have not done so.

Structural treatment controls that employ retention as a treatment mechanism rank the highest in the hierarchy established by this Order and the previous permit. In a well-designed and properly-operating facility, pollutants in storm water are not discharged into surface waters, making retention the most reliable treatment mechanism among those used in structural treatment controls. Since retention LID BMPs employ retention as the sole mechanism for pollutant removal, they are given the highest priority in the hierarchy. Biotreatment control BMPs employ retention on an incidental basis. But the retained portion of the design capture volume is significant and, by using the 1.5 factor, may be comparable to the volume of retention LID BMPs. Consequently, biotreatment control BMPs are ranked second in the hierarchy.

The last category of structural treatment controls in this Order's hierarchy are non-LID BMPs. These structural treatment controls principally use filter media such as perlite, zeolite, sand, or some proprietary or non-proprietary media to physically remove pollutants in storm water. The media may develop microbial communities in biofilms that coat portions of the media. Biofilms can assist in removing pollutants through biological uptake and transformation, but these are incidental mechanisms and the biofilm may even adversely affect the hydraulic performance of the facility.

This Order does not require that a single structural treatment control BMP be used to treat the design capture volume for a drainage area on a priority project

[23] Available at: www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/ventura_ms4/VenturaTGM/Ventura%20Stormwater%20TGM%20Final%207-13-11.pdf

site. A series of structural treatment controls may be used if necessary. The selection and sizing of controls must correspond with this Order's hierarchy. For example, if a retention LID BMP cannot treat the entire design capture volume, the remaining portion may be treated in a biotreatment control BMP. If is infeasible for both the retention LID and biotreatment control BMP to treat the entire design capture volume, then a non-LID BMP may be employed to treat the remaining portion. Under extremely limited circumstance should a site treat the design capture volume or any portion thereof using a non-LID BMP without having demonstrated in the WQMP that the volume could not have been treated using a BMP higher up on the hierarchy. The only circumstance where this could occur is where an off-site LID BMP will be used.

Subsection XII.H. of this Order establishes a specific protocol for selecting non-LID BMPs. This protocol largely carries over from the previous permit. It requires that the Co-permittees categorize non-LID BMPs by type and then assign a performance rating of "high", "medium", and "low" to each category relevant to a variety of expected pollutants. In response to Regional Board staff observations of convenient mis-categorizations, this Order requires that BMP categories include only those controls that employ the same principal of operation; use similar treatment mechanisms; and which can reasonably be expected to exhibit generally similar performance in the removal of pollutants. The rating must be based on the best available objective evidence and include field performance test data that is specific to the BMP.

The non-LID BMP selection protocol also requires that project types be related to various pollutants which can be reasonable expected to be found in urban runoff from those project types. Co-permittees must select non-LID BMPs that provide for either a "medium" or "high" level of treatment for those projects. Numeric performance thresholds must be used to distinguish the levels of treatment. The performance ratings for Non-LID BMPs must be reviewed bi-annually so that they are supported by the best available information.

Structural treatment control BMPs are storm water infrastructure. Like other infrastructure, these facilities may pose environmental hazards such as flooding, providing habitat for disease vectors, creating nuisances such as odors or midges, adversely affecting groundwater or soil remediation efforts, or presenting physical hazards to people, nearby structures, or traffic. This Order establishes an obligation on the Co-permittees to mitigate these potential environmental hazards to an acceptable level consistent with the requirements of CEQA.

This Order also requires that structural treatment controls substantially conform to published and generally-accepted engineering design criteria. These

requirements are related to hazard mitigation because, in many cases, engineering design criteria have been established to address potential environmental hazards. Minor deviation from published design criteria is generally acceptable and may be done to accommodate LID BMPs at a project site. However, unnecessary deviation is not acceptable.

2. Integration of Project WQMPs into the Development Application Process

This Order establishes a procedure for the integration of project WQMPs into the development application process. This procedure is derived from the 2011 Model WQMP and furthers the effort to "develop, implement, and enforce controls to reduce the discharge of pollutants from [MS4s] which receive discharges from areas of new development and significant redevelopment" down to the project-level according to 40 CFR 122.26(d)(2)(iv)(A)(2).

This Order requires that project WQMPs be developed in two phases. In the first phase, a preliminary project WQMP must be prepared prior to a project's development application being regarded as complete according to the Permit Streamlining Act. The preliminary project WQMP must be approved before the project is approved by the Co-permittees' decision-making body.

The purpose of preparing a preliminary project WQMP prior to the development application being complete is to promote consideration of structural treatment controls as early in the development approval process as possible. Structural treatment controls often compete for space with other structural elements of a project such as building footprints, utilities, and landscaping. As such, they should be given equal consideration so that they can be integrated into a site in the most economical manner possible. The preliminary project WQMP should be sufficiently detailed to demonstrate that adequate consideration has been given to the sizing, location, type of structural treatment control and the related BMP hierarchy, such that it can be reasonably expected to be constructible and to operate as intended.

Once the development application is complete, a project is typically approved after environmental review occurs under CEQA. It is important that structural treatment controls be described in the circulated CEQA document. This circulation helps to educate the public on how the Co-permittee addresses the potential water quality impacts of the project and how the potential environmental hazards of structural treatment controls are addressed. For this purpose, the Co-permittees are encouraged to also describe their related inspection and enforcement programs. Where applicable, the circulated document is a useful

compliance monitoring tool for the Regional Board and other interested agencies such as the California Coastal Commission and the Department of Fish and Wildlife.

The second phase of WQMP development begins after project approval. During this phase, additional project details are developed, including details on source-control, site-design, and structural treatment controls. Because multiple departments can be working on developing separate aspects of a project, there is potential for inconsistencies to develop between different project plans and the preliminary project WQMP. This has the potential to affect BMP selection, the likelihood that a structural treatment control will be built, or the likelihood that it will function as intended. This Order requires that the Co-permittees enforce substantial conformance between project plans and preliminary and final project WQMPs. At the end of the second phase, a final project WQMP is approved and the project is approved to initiate construction.

3. Non-Priority Projects

This Order identifies all other projects as “non-priority projects”. Certain non-priority projects must employ source control and site design BMPs. The approach to defining non-priority projects which require BMPs is narrower than the previous permit. These non-priority projects include those that include modifications or improvements that are or affect areas that are, exposed to storm water or which may be sources of urban runoff.

The previous permit required source control and site design BMPs regardless of the risk of storm water pollution. Due to the broad range of projects subject to the Co-permittees’ approval, this inclusive approach challenged projects that would occur entirely indoors or whose scope was too narrow to offer opportunities to incorporate the required BMPs in a practicable way. This Order requires a narrower group of non-priority projects employ source control and site design BMPs and, as with the previous permit, that the selection of those BMPs be documented in a Non-Priority Project Plan.

This Order does not require non-priority projects to employ structural treatment controls. But some kinds of site design BMPs bear a strong resemblance to structural treatment controls. In some cases, they could be modified in a practicable way to substantially conform to published and generally-accepted engineering design criteria. Where such opportunities occur, this Order requires that the Co-permittee pursue them.

As indicated earlier, a non-priority project may be required to use an off-site structural treatment control BMP where it is available. This may occur in situations where the non-priority project lies within a larger plan of development that was subject to a WQMP. This may also occur where a city or other public entity has constructed or plans to construct a regional or sub-regional structural treatment control.

J. Section XIII: Public Education

Section XIV of the Order requires that the Co-permittees implement an effective public education program. The requirements of Section XIV are based on 40 CFR Sections 122.26(d)(2)(iv)(A)(6), (B)(6), and (D)(4). Public education has been a core element of the Co-permittees' storm water program for over a decade.

Section XIV is intended to raise public awareness of pollution in urban runoff and to take action to reduce that pollution. The changes to the requirements in this Order have been largely influenced by USEPA's document "Getting in Step: A Guide for Conducting Watershed Outreach Campaigns"[24]. Changes were also made to generally support the effective execution of public education campaigns described in the Co-permittee's report of waste discharge received on October 4, 2013.

This Order retains the objective requirement for the Co-permittees to achieve 10 Million impressions annually. The subject audience has been refined. The subject audience is now termed the "general audience" which is defined as residents that are school age and up, and commercial and industrial establishments. The Co-permittees are required to create specific messages for sub-groups within the general audience. The Co-permittees are required to perform a statistically valid survey on the general audience to evaluate how well the purposes of the program have been achieved.

In addition, this Order now requires that the Co-permittees initiate public education campaigns that address a minimum of three high-priority pollution issues during the term of the permit. Other than to initiate campaigns on three issues, this Order does not specify any particular milestones or other performance metrics for those campaigns. Instead, the Co-permittees must

[24] USEPA. 2003. Getting in Step: A Guide for Conducting Watershed Outreach Campaigns. EPA 841-B-03-002. [http://www.epa.gov/owow/watershed/outreach/documents /getnstep.pdf [PDF - 3.27 MB - 136 pp]]. U.S. Environmental Protection Agency, Office of Water, Washington, DC

identify goals and performance metrics. The Co-permittees must permit public input on the overall campaigns, including the goals and performance metrics.

The scale of the three issues (permit area, watershed, or city) has been left to the discretion of the Co-permittees. Each scale does not necessarily have to involve the same set of issues. In the most complex form, each city could elect to focus on a unique set of issues, resulting in over 75 different public education campaigns. In its simplest form, the Co-permittees would initiate three campaigns over the entire permit area.

This Order defines “target audiences” for addressing the three high-priority pollution issues. The target audience includes persons believed to have the greatest influence on the selected pollution issues. The Co-permittees have the discretion to select both the pollution issues and the target audiences but must document their rationale for their selection in a written plan for the public education program.

K. Section XIV: Municipal Facilities

Section XIV has been rewritten to incorporate key elements of Section 5 of the 2003 DAMP. This includes the development of an inspection program for fixed facilities and field activities, following Integrated Pest Management, Pesticide, and Fertilizer Guidelines, and staff training. Objective requirements found in Section XIV of the previous permit have also been largely retained. The programs described in Section are required by 40 CFR 122.26(d)(2)(iv)(A)(3), (A)(4) [retrofit], (A)(5) and (A)(6).

L. Section XV: Municipal Construction Projects and Activities

Section XV retains all of the requirements of the previous permit to comply with the requirements of the Construction General Permit (NPDES Permit No. CAS000002). In the absence of Section XV, the Co-permittees would still be required to comply with the Construction General Permit. The inclusion of storm water runoff from construction sites in this Order consolidates permitting efforts for construction sites and discharges of urban runoff from MS4s. The language of Section XV has been modified to minimize conflicts with the requirements of the Construction General Permit regarding the submittal of a report of waste discharge to obtain coverage, and notices to terminate coverage. Language has been added to emphasize that the post-construction BMP requirements of this Order prevail over those in the Construction General Permit.

M. Section XVI: Training Programs

Section XVI largely reorganizes the requirements of the previous permit with some modifications. The requirements of Section XVI are supported by 40 CFR 122.26(d)(2)(iv) which requires, in part, that applicants for MS4 permits describe staff available to implement their storm water program. In order for staff to be effective in implementing the Co-permittees' storm water programs, staff need to be aware of their employer's obligation to reduce the discharge of pollutants to the MEP and their duties to help fulfill that obligation. Section XVI contains requirements appropriate to fulfill this need. These requirements are included in this Order according to Clean Water Act Section 402(p)(3)(B)(iii) which, in part, establishes the MEP standard and allows the state to include provisions appropriate for the control of pollutants.

Section XVI describes personnel that must receive training and a minimum training curriculum for certain groups of personnel. Refresher training must be given once every two years instead of once each year; initial training for new employees must still be given within 6 months of hire. Refresher training frequencies have been reduced because existing employees have accumulated training and experience during the past few permit terms. A significant body of institutional knowledge has likely been developed to reinforce the storm water programs and to justify reducing the intensity of the training program.

The scope of personnel requiring training has been expanded to more generally include "staff, contractors, and vendors whose duties or responsibilities directly or indirectly affect the Co-permittees' capacity to satisfy the requirements of this Order". For some Co-permittees, this may mean that additional personnel will require training. Subsection XVI.B. establishes a minimum baseline of subject matter for training for all affected personnel and additional subject matter for certain personnel. But generally, the training "must be commensurate with the duties and responsibilities of the affected personnel".

Section XVI also now requires that the Co-permittees employ objective methods to individually evaluate trained personnel. It also now requires that training records be maintained for a minimum of three years. A registry or similar mechanism is also required largely to facilitate tracking and reporting for the Principal Permittee and to permit training records to follow staff that change employment between different Co-permittees. The training program must be reviewed and updated annually to achieve continual improvement. The Co-permittees may implement a single training program, individual programs, or some hybrid of the two. Therefore, the review and update may occur collectively,

coordinated by the Principal Permittee, or be performed individually by each Co-permittee according to how the training program is implemented.

N. Section XVII: Notification Requirements

Section XVII continues the previous permit's requirements for the Co-permittees to report within 24-hours, sites or incidents that pose an imminent threat to human health or the environment. The initial report must be followed by a written report in 5 business days. Section XVII clarifies that the written report is to be submitted 5 business days after the initial report.

Section XVII now incorporates quarterly reporting requirements that were located in Section VI of the previous permit. This move consolidates these more-frequent reporting requirements, relative to the Annual Progress Report, and is intended to make them easier to locate for the reader.

O. Section XVIII: Total Maximum Daily Load Implementation

The waste load allocations (WLAs) and related requirements for adopted and approved TMDLs have been included in this Order. These WLAs and requirements are to be included in this Order according to the related implementation plans described in the Basin Plan. Federal regulations require that NPDES permits contain WQBELs consistent with the assumptions and requirements of all available WLAs (40 CFR Section 122.44(d)(1)(vii)(B)).

This Order provides several pathways to complying with the TMDL-related requirements of Section XVIII. These pathways are dependent on the condition of the receiving water and the status of the TMDLs' compliance deadline. Unless a future compliance deadline in specified in Appendices A through G, all WLAs and requirements therein must be complied with immediately unless the Co-permittees elect to develop a plan to comply with the WLA as described below.

WLAs are essentially mechanisms to attain water quality standards and to avoid causing or contributing to exceedances of water quality standards. Consequently, the process to meet the WLAs or develop plans to meet the WLAs is intended to also satisfy the process to comply with water quality standards. However, meeting the WLAs and complying with water quality standards are independent requirements that are not equivalent. Provisions in both Subsections IV.D. and XVIII.C. are included in this Order to establish the relationship between the two processes; compliance with the process in Subsection XVIII.C. satisfies the process in Subsection IV.D.

If discharges from the responsible Co-permittees' MS4s meet the WLAs, the responsible Co-permittees must continue implementing their storm water programs in order to maintain attainment of the WLAs. The responsible Co-permittees must also implement a monitoring program that must be developed according to MRP R8-2014-0002. The monitoring program must necessarily include efforts to establish whether or not discharges from MS4s continue to meet WLAs. The "iterative process" must continue to be implemented, however, so long as WLAs and water quality standards are met, the process will focus on improving the efficiency of the Co-permittees' efforts to comply.

If discharges from the responsible Co-permittees' MS4s do not meet the WLAs and the compliance deadline has passed, or compliance must be achieved immediately (where no deadline is specified), responsible Co-permittees will be regarded as being in violation of this Order unless they have initiated efforts to develop and implement a plan to meet the WLAs. The effort to develop and implement a plan to meet the WLAs begins with the submittal of a notice to the Executive Officer of the Co-permittee's intent to develop the plan. The plan must be developed and implemented according to the requirements in Subsection XVIII.C. Failure to comply with the requirements of Subsection XVIII.C. will nullify the effort to develop and implement a plan to comply with the WLA and immediate compliance with the WLA will be required by default.

The failure to comply with the requirements of Subsection XVIII.C. will not subject Co-permittees to enforcement action. Alternately, the Executive Officer will notify the Co-permittees in writing that they have defaulted on the requirements of Subsection XVIII.C. and must comply with WLAs. Subsequently discharges which have occurred in violation of the WLA(s) will be subject to enforcement action. However, notification of default by the Executive Officer is a courtesy and will not be a prerequisite to enforcement action. Maintaining compliance, or an immediate return to compliance, with Subsection XVIII.C. will serve as an alternative to immediate compliance with WLAs during the development phase of a plan.

Once a plan to meet the WLAs has been finalized and approved by the Executive Officer, it must be implemented according to Provision XVIII.D. The requirements of those plans become WQBELs in lieu of immediate compliance with WLAs. Failure to implement the plan will subject the responsible Co-permittee(s) to enforcement action whether or not discharges are known to exceed WLAs.

Development of a plan to meet the WLAs in lieu of immediate compliance with WLAs is optional. A Co-permittee may choose to develop a plan whether or not

discharges are meet the WLAs. If a Co-permittee is developing a plan, or a plan is approved, compliance with Subsection XVIII.C., or the WQBELs which have been developed within an approved plan, respectively serves in lieu of immediate compliance with WLAs. This Order places higher priority on the development of plans for WLAs that are being violated by requiring the submittal of a draft plan 12 months earlier than plans for WLAs that are not known to be violated.

All plans to comply with WLAs are subject to the "iterative process". This process allows the Co-permittees to improve the effectiveness of BMPs based on water quality monitoring data analysis and objective performance metrics, including the WLAs. If, despite compliance with the WQBELs in the plan, discharges continue to exceed WLAs, the "iterative process" requires improvements to the plan. Improvements may also be made in the interest of cost-effectiveness provided that water quality will not be compromised and the MEP standard is satisfied. The content of the plans is controlled and, except for inconsequential grammatical and technical changes, is subject to the approval of the Executive Officer.

Co-permittees may also submit a plan that does not propose new BMPs or modifications of existing BMPs. Provision XVIII.C.2.g. requires that such a plan include objective evidence that there is a trend in pollutant loads or concentrations indicating that WLAs can be attained without further intervention. All plans are subject to public review prior to the approval of the Executive Officer.

The Regional Board submits an Integrated Report to the USEPA to comply with the reporting requirements of CWA Sections 303(d), 305(b), and 314. The Integrated Report list the attainment status of water bodies relative to water quality standards. According to USEPA guidance, water bodies are placed in one of five categories of "attainment status" in the Integrated Report[25]. Water bodies in Category 5 indicate that at least one beneficial use is not being supported or is threatened and a TMDL is required. These water bodies are placed in on the 303(d) list.

Water bodies in Category 4 indicate that at least one beneficial use is not being supported or is threatened but a TMDL is not needed. Impaired water bodies may be placed in Category 4a if a TMDL has been adopted and approved. Impaired water bodies may be placed in Category 4b if other pollution control requirements required by a local, state or federal authority are stringent enough

[25] USEPA, 2005. Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act.

to implement applicable water quality standards within a reasonable period of time. Water bodies may be placed in Category 4c if the failure to meet an applicable water quality standard is not caused by a pollutant, but caused by other types of pollution.

Impaired water bodies can be included in Category 4b if there are acceptable "pollution control requirements" required by a local, state or federal authority stringent enough to implement applicable water quality standards within a reasonable period of time (e.g. a compliance date is set). When evaluating whether a particular set of pollution controls are "requirements", the USEPA considers a number of factors. These include:

1) The authority (local, state, federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing state or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls);
2) Existing commitments made by the sources and completion or soon-to-be-completed implementation of the controls (including an analysis of the amount of actual implementation that has already occurred);
3) The certainty of the dedicated funding for the implementation of the controls; and
4) Other relevant factors as determined by USEPA depending on case-specific circumstances.[26]

Impaired water bodies can be included in Category 4c if the failure to meet an applicable water quality standard is not caused by a pollutant, but is caused by other types of pollution. Pollution is defined in the Clean Water Act as "the mad-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water". (Clean Water Act Section 502(19) In some cases, pollution does not result from a pollutant and a TMDL is not required. These causes may include segments impaired solely due to lack of adequate flow, stream channelization or hydro-modification. In these situations, there may be water quality management actions that can address the causes of the impairment, but a TMDL may not be required for their implementation.

In specific cases, implementation of plans to comply with WLAs and other TMDL requirements may demonstrate that TMDLs are not necessary for impaired water

[26] Ibid

bodies. This conclusion must be supported by analytical documentation that demonstrates that technology-based effluent limitations required by the Clean Water Act; more stringent effluent limitations required by state, local, or federal authority; and/or other pollution control requirements required by local, state, or federal authority are stringent enough to satisfy water quality standards within a reasonable period of time. This would change the attainment status to Category 4b or 4c.

The water bodies placed in Category 4b or 4c of the Integrated Report must show a record that they are attaining water quality standards or supporting the identified beneficial uses, or will attain water quality standards or support identified beneficial uses in a reasonable period of time. This will allow the water bodies to be appropriately removed from the 303(d) List.

P. Section XIX: Program Effectiveness Assessments

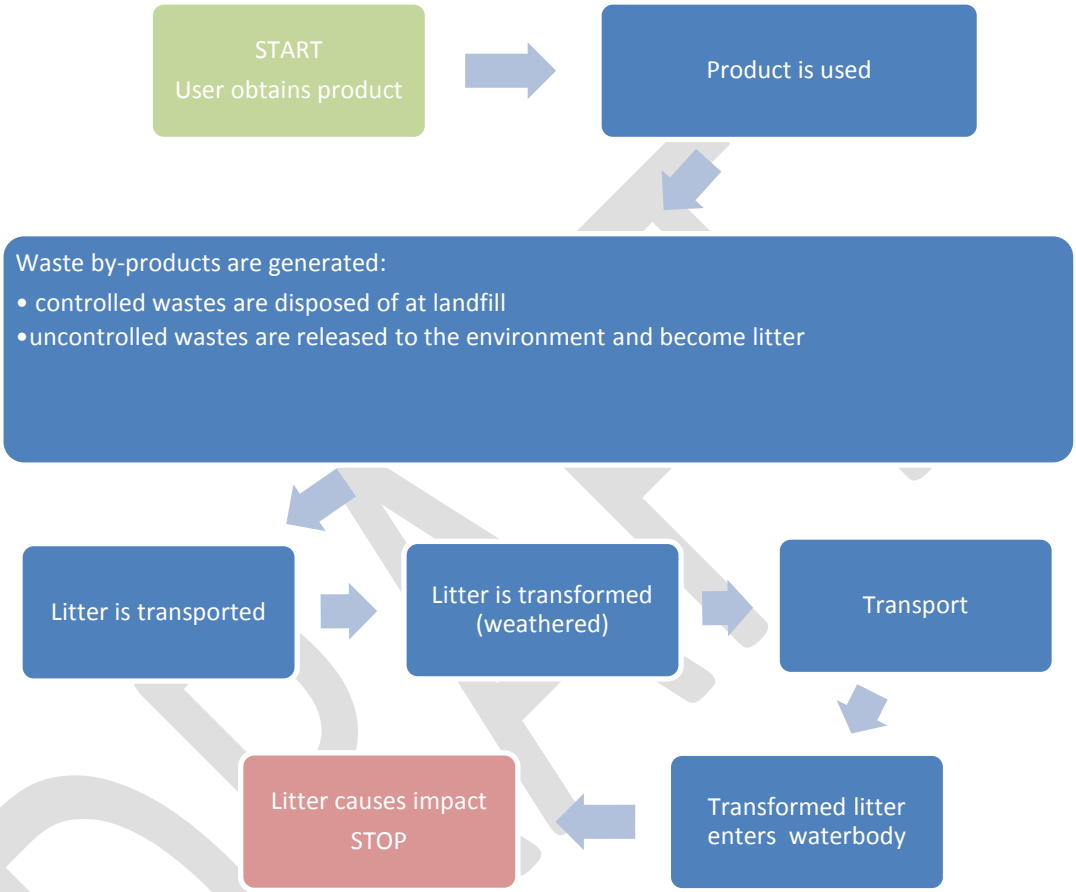
Section XIX of the previous permit contained provisions the allowed revisions to the DAMP and controlled its content. Because the DAMP is no longer incorporated by reference into this Order and the Co-permittees can generally amend the DAMP and other related planning documents, the previous permit's requirements in Section XIX are not necessary. The previous content of Section XIX has been replaced with requirements for the performance of Program Effectiveness Assessments. The rationale for this change has been provided earlier in this Technical Report in Section VIII.C. above.

Section XIX requires that each Co-permittee have a program in place to objectively assess the effectiveness of best management practices employed in each of the elements of their storm water programs. Each Co-permittee's program must be documented in writing. The Principal Permittee is tasked with developing a model program effectiveness assessment. These requirements set the expectation that common features of each of the Co-permittees' programs will generally be assessed in a similar way, but that there is no requirement that a completely uniform set of methods will be applied across each program. But each of the Co-permittees' programs must have the elements described in Section XIX.C.

The first required element are conceptual generalized models of pollution process(es). The development of conceptual models is the first step in developing more detailed quantitative models and eventually to developing solutions. They establish and communicate a baseline of understanding of a process. They can help identify parts of a process that are not well understood.

And they can help identify opportunities where interventions or best management practices may be effective in getting a desired outcome. An example of a conceptual generalized model is provided below:

Figure 2: Example of a Conceptual Generalized Model for Litter Pollution



An examination of the example model above may reveal certain things:

- *Flaws may be discovered in the model*. This example model assumes that controlled wastes will never become litter.
- *Opportunities may be realized*. For example, examining this assumption, a program manager learns that certain public waste cans are more prone to falling over or releasing trash on windy days.
- *New best management practices are developed.* Specifications are developed for new waste can purchases and old waste cans are phased out.
- *And new performance measures are applied*. The phase-out project is tracked as percent complete.

The required second element is an inventory of best management practices and where in the pollution process they are applied. This establishes a baseline condition and sets the context for monitoring and reporting results. Placing best management practices in relation to the pollution process can help identify imbalances and gaps. An imbalance may occur where BMPs disproportionately focus on prevention OR treatment of pollution. A gap may occur where there is a missed opportunity to implement a BMP in the pollution process.

The third element is a system to objectively measure the performance of the best management practices or groups of practices. This will include using performance measures prescribed by this Order and measures that will need to be developed by the Co-permittees. While the performance measures prescribed by this Order are enforceable if not achieved, performance measures developed by the Co-permittees will not be enforceable. However, failure to implement the "iterative process" when voluntary performance measures are not achieved will subject the Co-permittees to enforcement.

The final element is to evaluate the validity of the program. This element involves considering if the performance measures are genuinely relevant to what they are intended to measure. It also involves evaluating if the method used to measure outcomes is also valid. As part of this element, Co-permittees are encouraged to develop "S.M.A.R.T." goals. S.M.A.R.T. goals are goals that are Specific, Measurable, Attainable, Realistic, and Timely.

For example, the Co-permittees could establish the following performance metric: *Annually increase the proportion of new volunteers for coastal clean-up events.* This metric is a S.M.A.R.T. goal because it specifically relates to a target audience and events; with baseline data, it can be measured; it is realistic; and can be measured annually. The goal will logically require a combination of tactics to be realized, such as social media targeted at past participants and their friends and associates, along with traditional media favored by target demographics. But the goal permits broad experimentation without the threat of enforcement action if it is not achieved.

Q. <u>Section XX: Fiscal Analysis</u>

Section XX continues all of the requirements of the previous permit unchanged in substance with one modification. It has been re-written in a manner designed to make it clear that three fiscal years must be reported: the previous, current, and future years. A requirement has been added so that fiscal reports conform to USEPA reporting guidance if such guidance becomes available.

R. Sections XXI and XXII: Provisions and Permit Modification

Section XXI establishes procedures for public review and comment on any reports that are submitted according to this Order's requirements and which are subject to the Executive Officer's approval. Section XXI grants the Executive Officer the authority to review and approve changes to the Monitoring and Reporting Program, subject to public review and comment.

Section XXI no longer requires that the Co-permittees implement the DAMP or other related, previously-approved plans or reports, except for those that are described as needing approval from the Executive Officer elsewhere in this Order. As discussed earlier, the DAMP and other previously-approved plans or reports, constitute all or a large part of written plans, procedures, or programs required elsewhere in this Order. They are still necessary to demonstrate compliance with various requirements, although they may need to be updated or revised.

Section XXI continues the previous permit's requirements to report enforcement actions or discharges that may have an impact on human health and the environment and certain activities on land or facilities outside of the Co-permittees' jurisdiction that may be contributing pollutants to waters of the U.S.

No changes have been made to the language of Section XXII.

S. Section XXIII: Permit Expiration and Renewal

Section XXIII establishes the expiration date of this Order. However, Provision XXIV.R. establishes that this Order will continue in full force and effect past its expiration date until a new permit is issued or the Regional Board rescinds this Order. Section XIII states that this Order is effective 50-days after the date of its adoption except where the Regional Administrator of the USEPA has objections. The previous Order is also withdrawn at that time. However, the Regional Board retains the authority to enforce the previous Order for any violations of its provisions or conditions at the time it was in effect.

T. Section XXIV: Standard Provisions

Section XXIV has been modified to incorporate standard provisions consistent with State Board policies regarding the preparation of NPDES permits. Standard Provisions apply to all NPDES permits according to 40 CFR Section 122.41.

Dischargers must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR Section 122.42.

U. Appendices B through H

Appendices B through H contains WLAs and requirements for 6 TMDLs that are applicable to the permit area. The WLAs and requirements have been selected from those identified in the adopted TMDLs based on their applicability to the Co-permittees and their appropriateness to the Co-permittees' discharges.

Appendices B through H do not provide instruction on *how* the WLAs will be complied with. That instruction is located in Section XVIII of the Order. Appendices B through H are references containing *what* must be complied with.

Appendices B through H are subject to change during the term of this Order. In order to make changes, this Order may be modified, revoked, or issued as described in Finding 7 and Subsection XXII.A. of the Order. Appendices B through H in particular may be amended in order to incorporate any requirements imposed upon the Co-permittees though the TMDL process. This process may result in new TMDLs or modifications to existing TMDLs.

V. Appendix A

Appendix A is a table showing which Co-permittees discharge into watersheds for which TMDLs have been adopted. Many Co-permittees discharge into more than one watershed. The table does not identify what portions of what cities drain into the watersheds. For some cities, their entire area may drain into a single watershed. For others, only a small portion may drain into another watershed.

This apportioning affects the level of responsibility (e.g. cost sharing) that each Co-permittee may assume for compliance with WLAs and other TMDL requirements. However, this apportioning is a matter that is addressed among the Co-permittees. The inclusion of the table in Appendix A is intended to identify the respective responsibilities of the Co-permittees to comply with WLAs and other TMDL requirements. It is not intended to indicate their level of responsibility.

The cities of Fountain Valley, Garden Grove, Huntington Beach, Villa Park, and Westminster are not shown in Appendix A. These Co-permittees do not discharge to waters for which there is an adopted TMDL.

Appendix A makes certain clarifications regarding the Nutrient TMDL, Fecal Coliform TMDL, and the Coyote Creek Metals TMDL. Appendix H shows that the cities of Laguna Hills and Laguna Woods contribute discharges for which pollutants are controlled by the Nutrient TMDL and the Fecal Coliform TMDL. These cities were not noted in these TMDLs at the time of their adoption. This is because the City of Laguna Woods was incorporated in 1999, at about the same time that these TMDLs were adopted in 1999 and 2000 respectively. In the case of the City of Laguna Hills, the City annexed its portion located in the Santa Ana Region in 2000. As the result of this timing, both cities were inadvertently omitted from the Nutrient and Fecal Coliform TMDLs. Prior to incorporation or annexation, the areas of both cities were under the control of the County and still discharged into the Newport Bay watershed. Appendix A recognizes that the responsible parties have changed and clarifies that the responsible parties for these discharges are the cities of Laguna Hills and Laguna Woods.

For the Coyote Creek Metals TMDL, the table in Appendix A differs from the USEPA's TMDL[27]. This TMDL includes Table 7-1 which lists the cities in the San Gabriel Watershed by watershed sub-basin, including the Coyote Creek watershed. Appendix A reiterates that list but adds the City of Stanton and removes the City of Garden Grove. The City of Yorba Linda is shown in Appendix A conditionally.

The City of Stanton has been added because a review of County watershed maps shows that a small portion at its northern edge, bound by Beach Boulevard, Starr Street, and Fern Avenue (estimated at less than one acre) drains into the Coyote Creek watershed[28]. The same watershed maps show that the City of Garden Grove does not drain into the Coyote Creek watershed.

The City of Yorba Linda drains partly towards the Coyote Creek watershed. However, Orange County Water District has reported that this flow is diverted away from the Coyote Creek watershed and to the Santa Ana River by a gate located in the fore bay to Miller Retarding Basin located at the southwest corner of the intersection of East Orangethorpe Avenue and North Miller Street. When open, the gate allows flow to continue down Carbon Creek where it may enter

[27] The Coyote Creek Metals TMDL is formally known as the "Total Maximum Daily Loads for Metals and Selenium: San Gabriel River and Impaired Tributaries" and is available at: http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/San%20Gabriel%20River%20Metals%20TMDL/final_sangabriel_metalstmdl_3-27-07.pdf

[28] The County's watershed map is available at: http://ocwatersheds.com/civicax/filebank/blobdload.aspx?BlobID=10612

Coyote Creek. Although the City of Yorba Linda is shown in Appendix A, the City is only subject to the Coyote Creek Metals TMDL requirements if flows are allowed to enter Coyote Creek.

XIII. Monitoring and Reporting Program

Monitoring and Reporting Program ("MRP") No. R8-2014-0002 is an attachment to Order No. R8-2014-0002. It contains requirements for both water quality monitoring and for program effectiveness assessments. The water quality monitoring requirements include requirements for the development of a Water Quality Monitoring Plan. The Water Quality Monitoring Plan must address monitoring to address illicit discharges/illicit connections, water quality standards attainment or non-attainment; and compliance with waste load allocations.

The Co-permittees have been implementing a water quality monitoring program for several decades. This program, in one form or another, has served multiple purposes beyond compliance with MS4 Permits requirements. This Order essentially requires re-documentation of the current program and provides the Co-permittees with an opportunity to make improvements in the process. Certain limitations to those improvements are established by requirements in the MRP. However, the Executive Officer is authorized to amend the MRP, particularly if important program improvements are hindered by the MRP. The newly-documented program will be subject to review and approval by the Executive Officer.

The requirements in this Order and the MRP for effectiveness assessments are consistent with 40 CFR 122.42(c)(1), which requires reports of the "status of implementing the components of the storm water management program that are established as permit conditions." This includes use of the "iterative process" as well as other "management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants" as described in Clean Water Act Section 402(p)(3)(B)(iii).

The MRP contains requirements for both dry-weather and wet-weather monitoring as part of a Water Quality Monitoring Plan. The dry-weather monitoring requirements are based on the requirements of 40 CFR 122.26(d)(1)(iv)(D), (d)(1)(v)(B), and (d)(2)(iv)(B). The wet-weather monitoring requirements are based on the requirements of 40 CFR 122.269d)(2)(iii), (d)(2)(iii)(A) and (d)(2)(iii)(A)(1) through (4); and 40 CFR 122.21(g)(7)(i) through (ii). Requirements related to

monitoring and reporting pollutant loads are consistent with 40 CFR 122.26(d)(2)(iii)(B) and (d)(2)(v).

The MRP requirements allow the Co-permittees to use monitoring work performed by others to substitute for work required by the MRP. The MRP requirements also allow the Co-permittees to supplement their own monitoring work with work performed by others to improve any related analyses. The substituted or supplemental monitoring work must meet the requirements of the MRP in order to be valid. The MRP has been written with the intent of encouraging the Co-permittees' participation in state-wide, national, regional, or local monitoring programs in order to avoid duplication of work, improve related analyses of monitoring results, promote cooperation among other NPDES permitees and other institutions interested in water quality, and generally strengthen the body of scientific and technical knowledge of water quality. In this spirit, Provision XXI.B.2. of the Order requires the Co-permittees to make the results of field and laboratory analyses available to the public.

The State Water Resources Control Board ("State Board") adopted Resolution No. 2012-0012, which approves exceptions to the California Ocean Plan for certain discharges into Areas of Special Biological Significance ("ASBS'"). Resolution No. 2012-0012 became effective on March 20, 2012. Attachment B to the Resolution established limitations on point source storm water discharges to ASBS'. Among the Co-permittees, the City of Newport Beach is affected by Resolution No. 2012-0012. This Order requires the City of Newport Beach to comply with the Resolution, including monitoring of its discharge. The Monitoring and Reporting Plan must incorporate this monitoring effort.

The State Board has also adopted the Water Quality control Plan for Enclosed Bays and Estuaries of California – Part 1 Sediment Quality. This Plan became effective on August 25, 2009. The MRP includes requirements for the Co-permittees to monitor sediments in enclosed bays or estuary receiving waters consistent with this Plan.

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