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ATTACHMENT F – FACT SHEET

As described in Part II of the Order, the Los Angeles Water Board incorporates this Fact Sheet as findings of the Los Angeles Water Board supporting the issuance of the Order. This Fact Sheet sets forth the principal facts and the significant factual, legal, methodological, and policy and technical rationale that serve as the basis for the requirements of the Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility and the Dischargers.

Table F-1. Facility Information

WDID No.[1]	Various (see Table 2 and Table 3 of the Order)
Dischargers	The Los Angeles County Flood Control District (LACFCD), the County of Los Angeles, the 85 incorporated cities within the coastal watersheds of Los Angeles County, the Ventura County Watershed Protection District (VCWPD), the County of Ventura, and the 10 incorporated cities within Ventura County (see Table 2 and Table 3 of the Order)[2]
Name of Facility	Municipal Separate Storm Sewer Systems (MS4s)[3] within the coastal watersheds of Los Angeles and Ventura counties
Facility Contacts, Titles, Addresses, and Phone Numbers	Available through the Stormwater Multiple Application and Report Tracking System (SMARTS)[4] at https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.xhtml
Mailing Addresses	Refer to SMARTS
Billing Addresses	Refer to SMARTS
Type of Facility	Large Municipal Separate Storm Sewer System (MS4)
Major or Minor Facility	Major
Discharge Points	Locations throughout the Los Angeles Region
Discharge Description	Stormwater and Non-Stormwater Discharges
Receiving Waters	Various (see Part II.A of this Fact Sheet)

[1] WDID No. stands for "Waste Discharge Identification" Number, which is a unique identifier given to a specific facility and regulatory measure (e.g., NPDES permit). In the case of the Order, each Discharger has a unique WDID number associated with its coverage under the Order.

[2] Note that the cities of Palmdale and Lancaster, though in Los Angeles County, are not within the coastal watersheds of Los Angeles County and, therefore, are not under the jurisdiction of the Los Angeles Water Board. These two cities are under the jurisdiction of the Lahontan Water Board.

[3] See Attachment A of the Order for definitions of terms, acronyms, and abbreviations used in the Order, including this Fact Sheet and all other attachments.

[4] SMARTS provides a platform where dischargers, regulators, and the public can enter, manage, and view stormwater data including permit applications and compliance and monitoring data associated with NPDES permits for stormwater discharges issued by the State of California. SMARTS is compliant with U.S. EPA's Cross-Media Electronic Reporting Rule, which sets requirements for electronic reporting of NPDES permit-related submittals.

Receiving Water Type	Inland surface waters, estuarine waters, and marine waters, including but not limited to, lakes, rivers, estuaries, lagoons, harbors, bays, beaches, and the Pacific Ocean

A. Dischargers

The 99 municipalities listed in Table 2 and Table 3 of the Order are the owners and/or operators[5] of Municipal Separate Storm Sewer Systems within the Los Angeles Region (hereinafter Facility or MS4). For the purposes of the Order, the entities listed in Table 2 and Table 3 of the Order are hereinafter referred to separately as "Permittees" and jointly as the "Dischargers." References to "discharger" or "permittee" or "co-permittee" or "municipality" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Dischargers or Permittees herein.

References to "Los Angeles County MS4 Permittees" or "Los Angeles County Permittees" refer to LACFCD, the County of Los Angeles, and the 85 incorporated cities within Los Angeles County, excluding Lancaster and Palmdale which are not within the Los Angeles Water Board's jurisdiction. References to "Ventura County MS4 Permittees" or "Ventura County Permittees" refers to VCWPD, the County of Ventura, and the 10 incorporated cities within Ventura County. Furthermore, reference to "Los Angeles Region" is defined per California Water Code section 13200(d) as follows: "Los Angeles region, which comprises all basins draining into the Pacific Ocean between the southeasterly boundary, located in the westerly part of Ventura County, of the watershed of Rincon Creek and a line which coincides with the southeasterly boundary of Los Angeles County from the ocean to San Antonio Peak and follows thence the divide between San Gabriel River and Lytle Creek drainages to the divide between Sheep Creek and San Gabriel River drainages."

B. Discharges

Information about the Facility's stormwater and non-stormwater discharges to waters of the United States is summarized in Table F-1 above. Permittees were previously regulated by (1) Order No. R4-2010-0108 and National Pollutant Discharge Elimination System (NPDES) Permit No. CAS004002, effective on July 8, 2010, (2) Order No. R4-2012-0175 and NPDES No. CAS004001, effective on December 28, 2012, and (3) Order No. R4-2014-0024 and NPDES No. CAS004003, effective on March 28, 2014. Attachment A of the Order lists definitions, abbreviations, and acronyms of terms used in the Order and all other attachments. Attachment B of the Order provides a map depicting each major Watershed Management Area (WMA), its subwatersheds, and the major receiving waters therein to which the Facility discharges. Attachment C of the Order depicts the major MS4-related infrastructure within the Los Angeles Region and monitoring locations for Ventura County Permittees.

C. Permit Scope

The Order regulates discharges of stormwater and non-stormwater from the Permittees' MS4s. Section 122.26(b)(8) of title 40 of the Code of Federal Regulations (CFR)[6] defines an MS4 as "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade

[5] Owner or operator means the owner or operator of any facility or activity subject to regulation under the NPDES program (40 CFR § 122.2).

[6] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

channels, or storm drains): (i) [o]wned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) [d]esigned or used for collecting or conveying storm water; (iii) [w]hich is not a combined sewer; and (iv) [w]hich is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

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

Non-stormwater discharges consist of all discharges through an MS4 that do not originate from precipitation events. Non-stormwater discharges through an MS4 are prohibited unless authorized under a separate NPDES permit; authorized by U.S. EPA pursuant to Sections 104(a) or 104(b) of CERCLA; composed of natural flows; the result of emergency firefighting activities; or conditionally exempted in the Order.

A permit issued to more than one Permittee for MS4 discharges may contain separate stormwater management programs for particular Permittees or groups of Permittees. (40 CFR § 122.26(d)(2)(iv)). Given LACFCD's and VCWPD's limited land use authorities, they are not subject to the Industrial/Commercial Facilities Program and the Planning and Land Development Program. However, as owners and operators of a MS4, LACFCD and VCWPD remain subject to the Public Information and Participation Program, Illicit Discharge Detection and Elimination Program, Public Agency Activities Program, and Construction Program. LACFCD and VCWPD are also subject to all other requirements of the Order, including but not limited to the discharge prohibitions, receiving water limitation provisions, TMDL provisions, monitoring and reporting provisions, and standard provisions.

D. Rationale for Issuance of a Regional Phase I MS4 Permit

The Los Angeles Water Board retains the discretion as the permitting authority to determine whether to issue permits for discharges from MS4s on a system-wide or jurisdiction-wide basis. Clean Water Act section 402(p)(3)(B)(i) and implementing regulations at 40 CFR section 122.26, subdivisions (a)(1)(v), (a)(3)(ii), and (a)(3)(iv) allow the permitting authority to issue permits for MS4 discharges on a system-wide or jurisdiction-wide basis taking into consideration a variety of factors. Such factors include the location of the discharge with respect to waters of the United States, the size of the discharge, the quantity and nature of the pollutants discharged to waters of the United States, and other relevant factors. Federal regulations at 40 CFR section 122.26(a)(3)(ii) identify a variety of possible permitting structures, including one system-wide permit covering all MS4 discharges or distinct permits for appropriate categories of MS4 discharges including, but not limited to, all discharges owned or operated by the same municipality, located within the same jurisdiction, all discharges within a system that discharge to the same watershed, discharges within a MS4 that are similar in nature, or

for individual discharges from MS4s. Consistent with CWA 402(p)(3)(B)(i), the Los Angeles Water Board is issuing the Order for its entire Los Angeles Region.

Additionally, the Los Angeles Water Board is issuing the Order to implement the State Water Board's guiding principles for MS4 permit development by all regional water boards, which is provided in Order WQ 2015-0075.[7] Specifically, the State Water Board declared:

"Phase I MS4 permits should (1) continue to require compliance with water quality standards in accordance with our Order WQ 99-05; (2) allow compliance with TMDL requirements to constitute compliance with receiving water limitations; (3) provide for a compliance alternative that allows permittees to achieve compliance with receiving water limitations over a period of time as described above; (4) encourage watershed-based approaches, address multiple contaminants, and incorporate TMDL requirements; (5) encourage the use of green infrastructure and the adoption of low impact development principles; (6) encourage the use of multi-benefit regional projects that capture, infiltrate, and reuse storm water; and (7) require rigor, accountability, and transparency in identification and prioritization of issues in the watershed, in proposal and implementation of control measures, in monitoring of water quality, and in adaptive management of the program."

The application of these principles on a region-wide basis results in improved consistency and uniformity, where warranted, in Phase I MS4 permit requirements, while providing Permittees the flexibility to tailor their implementation through watershed management programs in consideration of socio-economic, land use, and geographic characteristics.

Two of the three Phase I MS4 permits issued by the Los Angeles Water Board, including Los Angeles County and the City of Long Beach, already incorporate these principles. With regard to Ventura County MS4 Permittees, the previous Order, No. R4-2010-0108, was structured as a single permit whereby all 12 Permittees were assigned uniform requirements, with additional requirements for the Principal Permittee. With the issuance of the Los Angeles County MS4 Permit (Order No. R4-2012-0175) as amended by State Water Board Order WQ 2015-0075, the Los Angeles Water Board created a new permitting framework based on Watershed Management Areas to address MS4 discharges and water quality protection in the region. This framework

[7] On April 21, 2021, the Los Angeles County Superior Court issued a final judgment in the case of Natural Resources Defense Council, Inc. and Los Angeles Waterkeeper v. State Water Resources Control Board and California Regional Water Quality Control Board, Los Angeles Region (Super. Ct. Los Angeles County, No. BS156962 (NRDC)). At issue was plaintiffs' challenge to the adequacy of the Water Boards' antidegradation analysis in the 2012 Los Angeles County MS4 Order. The trial court ruled that the Water Boards' antidegradation analysis for any high quality waters was not supported by adequate findings. In furtherance of the judgment, the court will issue a writ ordering the State Water Board to set aside Order WQ 2015-0075. As of June 1, 2021, the court has not issued the writ and the State Water Board has taken no action to set aside Order WQ 2015-0075. As such, Order WQ 2015-0075 remains in effect and relevant to the analysis of many of the matters discussed herein. Even if Order WQ 2015-0075 is ultimately set aside, the trial court's ruling was based solely on the antidegradation analysis for high quality waters and did not call into question the propriety of the State Water Board's other holdings on the 2012 Los Angeles County MS4 Permit. Because these holdings have not been disturbed by the NRDC case, and because these holdings address matters relevant to the Regional MS4 Order, this Fact Sheet continues to cite and discuss Order WQ 2015-0075, as appropriate, for matters other than antidegradation concerning high quality waters.

intended to provide a comprehensive and integrated strategy toward water resource protection, enhancement, and restoration within a hydrologically defined drainage basin or watershed while considering watershed specific characteristics in order to develop and implement a cost-effective program to achieve compliance. The Ventura County Permittees' reapplication package supported the inclusion of the Watershed Management Program as an optional alternative compliance pathway in Ventura County. Additionally, the reapplication package assumed that the future permit would follow the structure of the Los Angeles County MS4 Permit in Order No. R4-2012-0175 and therefore, the Permittees framed their proposals for changes to the permit accordingly. As a result, the Los Angeles Water Board finds that the framework and principal elements of a MS4 permit need not differ between counties and/or Permittees in the Los Angeles Region. A Regional Phase I MS4 Permit, which incorporates a watershed-based approach, provides regional consistency, while allowing Permittees the opportunity to customize their stormwater management programs considering unique watershed characteristics.

The Los Angeles Water Board also considered the nature of most Permittees' MS4s, which comprise a large interconnected system particularly in Los Angeles County where the discharges from these entities frequently commingle in the MS4 prior to discharge to receiving waters. Additionally, the City of Long Beach, which was previously regulated under its own permit, is geographically located at the base of 4 out of 10 of the watersheds within Los Angeles County and therefore has frequent commingling of its MS4 discharges with MS4 discharges of upstream Permittees in these watersheds.

The Los Angeles Water Board also considered the location of discharges and the nature of the receiving waters (see 40 CFR 122.26(b)(4)(iii) and (b)(7)(iii)). For example, while the MS4s in Los Angeles and Ventura County do not interconnect, they do discharge to some shared receiving waters (e.g., Malibu Creek, Santa Monica Bay, Santa Clara River). The City of Thousand Oaks (within Ventura County) and the City of Agoura Hills (within Los Angeles County) both discharge to Malibu Creek. Likewise, the cities of Ventura (within Ventura County) and Santa Clarita (within Los Angeles County) both discharge to Santa Clara River. The same is true within Ventura County where for example, the City of Ojai and the City of Ventura, both discharge to receiving waters in the Ventura River Watershed. Having one permit for MS4 discharges to the same receiving waters across Los Angeles and Ventura Counties allows to the Board to address water quality in a consistent manner.

Further necessitating a watershed framework is the requirement to implement 45 largely watershed-based TMDLs in the Order. Most Permittees have already established jurisdictional groups on a watershed or subwatershed basis for TMDL implementation. (See Attachment J of the Order for a matrix of these TMDLs and Permittees by WMA.) Some of the TMDLs apply to both Los Angeles County and Ventura County Permittees for the reason discussed above. These TMDLs also address multiple watersheds and the jurisdictional areas of multiple Permittees. Having separate permits makes implementation of the TMDLs more cumbersome.

Based on an evaluation of these factors, the Los Angeles Water Board determined that, because of the complexity and networking of the MS4 within the Los Angeles Region, that one system-wide permit is appropriate. In order to provide individual Permittees with specific requirements, the Order regulates the MS4 discharges of all 99 Permittees with some sections devoted to universal requirements for all Permittees. Some sections are devoted to distinct requirements for Los Angeles County Permittees and Ventura County Permittees and other sections devoted to requirements specific to each WMA,

including TMDL implementation provisions. This structure is supported by section 402(p) of the Clean Water Act and 40 CFR sections 122.26, subdivisions (a)(1)(v), (a)(3)(ii), and (a)(3)(iv). A single permit will ensure consistency and equitability in regulatory requirements within the Los Angeles Region, while watershed-based requirements within the single permit will provide flexibility to tailor permit provisions to address distinct watershed characteristics and water quality issues. Additionally, an internal watershed-based structure comports with the Los Angeles Water Board's Watershed Management Initiative and its watershed-based TMDL requirements. Watershed-based requirements will help promote watershed-wide solutions to address water quality problems, which in many cases are the most efficient and cost-effective means to address stormwater and urban runoff pollution. Further, watershed-based requirements may encourage collaboration among permittees to implement regional integrated water resources approaches such as stormwater capture and re-use to achieve multiple benefits.

II. FACILITY DESCRIPTION

A. Description of Receiving Waters and Watershed Management Areas

The area under the jurisdiction of the Los Angeles Water Board (Los Angeles Region) is 4,447 square miles in size. It contains 120 miles of coastline, 18,839 acres of lakes, and 1,704 miles of rivers and streams. Major Watershed Management Areas in the Los Angeles Region are shown on Figure B-1 of Attachment B of the Order and described below.

B. Geographic Coverage and Watershed Management Areas

The municipal stormwater and non-stormwater discharges from the MS4 enter receiving waters in the major Watershed Management Areas of the Ventura River Watershed; Miscellaneous Ventura County Coastal Watersheds; Santa Clara River Watershed; Calleguas Creek Watershed; Santa Monica Bay Watershed, including Malibu Creek Subwatershed, Ballona Creek Subwatershed, and Marina del Rey Subwatershed; Dominguez Channel and Greater Los Angeles and Long Beach Harbors Watershed, including Machado Lake Subwatershed; Los Angeles River Watershed; San Gabriel River Watershed; and Los Cerritos Channel and Alamitos Bay Watershed. The receiving waters within these WMAs include those identified in Tables 2-1, 2-1a, 2-3, 2-3a, 2-4, 2-4a, and Appendix 1 Table 1, Table A2-1, Table A2-3 and Table A2-4 of the *Water Quality Control Plan – Los Angeles Region* (*Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*), and other unidentified tributaries to these surface waters.

The Order defines WMAs consistent with the delineations used by the Los Angeles Water Board. Permittees included in each of the major WMAs are listed in Attachment J of the Order. Maps depicting each WMA, its subwatersheds, and the major receiving waters therein are included in Attachment B of the Order.

Ventura River Watershed Management Area. The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles (150,400 acres), which is located within the western Transverse Ranges (the only major east-west mountain ranges in the continental U.S.) (Attachment B Figure B-2). From the upper slopes of the Transverse Ranges, the surface water system in the Ventura River watershed generally flows in a southerly direction to an estuary, located at the mouth of the Ventura River. Groundwater basins are highly interconnected with the surface water system and are recharged or depleted

according to surface flow conditions. The surface waters that drain the watershed have very steep gradients, ranging from 40 feet per mile at the mouth to 150 feet per mile at the headwaters. Precipitation in the watershed varies widely and mostly occurs as rainfall during a few storms between November and March. Summer and fall months are typically dry. Although snow occurs at higher elevations, melting snowpack does not sustain significant runoff in warmer months. The unpredictable weather pattern, coupled with the steep gradients throughout most of the watershed, result in high flow velocities with most runoff reaching the ocean.

Land use in the watershed is predominantly open space with a mix of residential, agriculture, commercial and industrial uses along the mainstem of the river. The MS4s of the incorporated cities of Ojai and Ventura along with unincorporated areas of Ventura County discharge to the Ventura River system. Residents and agricultural interests in this watershed are entirely dependent on local surface water and groundwater and there is no connection to the State Water Project to deliver imported water.

Migratory steelhead trout ascend upstream in the Ventura River and into San Antonio Creek and may utilize areas above the Robles Diversion Dam via a fish passageway. A limited resident population of rainbow trout occurs above Robles Diversion Dam and in San Antonio Creek and the lower Ventura River. Multiple interested agencies, including Ventura County and other entities, have recognized the potential for the restoration and enhancement of steelhead populations in the Ventura River through the removal of Matilija Dam, which is in the upper watershed and blocks access to a large area of prime spawning habitat.

Wetlands are found at the Ventura River estuary as well as along the river and bordering lakes. The wetland at the mouth of the Ventura River is considered a significant biological resource by Ventura County due to its ability to provide habitat for thousands of biota that include endangered, rare, or threatened species. The mainstem of the river as well as San Antonio Creek are also listed as significant biological resources due to their use by steelhead trout. “Critical” condor habitat exists in three areas in Ventura County, including Matilija Creek.

Water quality in the upper reaches is good but quality in the lower reaches is influenced by a combination of municipal wastewater discharges, agricultural activities, livestock, MS4 discharges, and oil industry discharges among other sources of pollutants. Excessive algae occurs at many locations and most water quality problems involve eutrophication. Total Maximum Daily Loads (TMDLs) have been established (as required by the federal Clean Water Act) to address water quality impairments due to trash, nutrients, eutrophic conditions and algae in the watershed.

Stakeholders in the watershed have formed several long-range water planning groups and have developed Integrated Regional Water Management (IRWM) Plans under Propositions 50 and 84. These Plans address the future water needs of each IRWM Region in terms of reliability of the water supply, improvement to water quality (including implementing TMDLs), increases in habitat and open space (additionally serving as areas for recharge of stormwater), and replacement of water-related infrastructure as needed. The stakeholders also propose projects to help implement the Plan’s goals; applicants may pursue funding through a variety of sources including grant funding available through bond programs. Ventura County Permittees within this watershed also participated in the development of a Storm Water Resource Plan pursuant to Water Code section 10563 et seq. in order to be eligible to apply for state funding for stormwater and dry weather runoff projects to improve water quality.

Miscellaneous Ventura County Coastal Watershed Management Area. The Miscellaneous Ventura County Coastal WMA is composed of four separate coastal drainage areas located between the Los Angeles Water Board's boundary with the Central Coast Water Board and the Ventura River, Santa Clara River, Calleguas Creek, and Santa Monica Bay WMAs (Attachment B Figure B-3). The drainage areas are typified by beaches, small coastal streams, coastal lakes, and harbors such as Ventura Harbor, Channel Islands Harbor, and Port Hueneme. The WMA encompasses an area that historically consisted of extensive coastal wetlands that were connected to the Pacific Ocean. Many unique habitats, including coastal wetlands and lagoons, such as McGrath Lake and Ormond Beach Wetlands, and the nearby coastal dunes remain in the WMA. They are identified as significant biological resources by Ventura County. These areas provide habitats for many fish, birds, invertebrates, sea lions, and other marine and estuarine species

Land use in this WMA trends heavily to either open space or urban uses. The MS4s of the incorporated cities of Port Hueneme, Oxnard, and Ventura along with unincorporated areas of Ventura County discharge to these miscellaneous Ventura County Coastal Watersheds. Some of these waterbodies receive runoff from urban areas through sizable drains and pollutants associated with MS4 discharges will be found. The water quality problems found in the harbors in the WMA generally involve elevated bacteria, metals, and legacy pesticides. While residents and commercial/agricultural interests in this WMA utilize some local groundwater, they are highly dependent on imported water.

Channel Islands Harbor: Channels Islands Harbor is located south of the Santa Clara River and is in the immediate vicinity of considerable residential development and some agricultural land. Kiddie Beach and Hobie Beach, near the mouth of the harbor, are on the 2014/2016 Clean Water Act section 303(d) list due to impairment by indicator bacteria.

Port Hueneme Harbor: Port Hueneme Harbor is a medium-sized deep-water harbor located in Ventura County, north of Mugu Lagoon. The construction of most of the harbor was completed in 1975. A U.S. Navy Construction Battalion historically operated part of it. The rest of the harbor serves as a commercial port operated by the Oxnard Harbor District. Two endangered bird species may use the harbor, the California Brown Pelican, and the California Least Tern. The harbor is on the 2014/2016 Clean Water Act section 303(d) list for DDT and PCBs in fish/shellfish tissue. The DDT and PCB impairments in fish/shellfish tissue are being addressed through an action other than a TMDL (i.e., dredging).

Ventura Marina: Ventura Marina is a small craft harbor located between the mouths of the Ventura and Santa Clara Rivers. It is home to numerous small boats and two boatyards. The "Ventura Keys" area of the marina is a residential area situated along three canals. The marina is surrounded by agricultural land and a large unlined ditch drains into the Keys area. The marina and Ventura Keys area are on the 2014/2016 Clean Water Act section 303(d) list for indicator bacteria. In 2018, the Los Angeles Water Board re-evaluated the 303(d) listing for Ventura Keys and concluded that the waterbody should remain on the 303(d) list. The area around the jetties is listed as impaired for DDT and PCBs. The nearby Arundell Barranca is an open drain carrying mostly agricultural, commercial, and residential runoff, which flows into the marina.

McGrath Lake: McGrath Lake is a small brackish waterbody located just south of the Santa Clara River. The lake is located partially on State Parks land and partially on privately-owned oilfields in current production. A number of agricultural ditches drain into the lake. The MS4 does not discharge into McGrath Lake. A state beach is located off the coastal side of the lake. The habitat around the lake is quite unique and it is utilized by a large number of overwintering migratory birds. The lake is on the 2014/2016 Clean Water Act section 303(d) list for several legacy pesticides.

Open Coastline: A major feature of the coastline north of Mugu Lagoon is Ormond Beach and Ormond Beach Wetlands. The ocean immediately off the coast was part of the Bight '03, Bight '98, and the 1994 Southern California Bight Regional Monitoring Program. The Ormond Beach Wetlands has been extensively characterized as part of a wetlands restoration planning process being led by the Coastal Conservancy. The Ormond Beach Task Force was formed in 1993 and meets as needed to address issues and projects that may affect the beach and wetlands. Major ongoing activities include work by U.S. EPA to characterize and clean up the Halaco Superfund site adjacent to Ormond Beach Wetlands and wetlands restoration planning being undertaken by the State Coastal Conservancy. Additionally, the open coastline has numerous beaches. Several of these were historically listed on the 303(d) list as impaired due to bacteria. The Los Angeles Water Board re-evaluated these listings in 2019 and, based on the data analysis, recommended removing Ormond Beach, Peninsula Beach, Point Mugu Beach, Port Hueneme Beach Park, Rincon Parkway Beach, San Buenaventura Beach and Surfer's Point at Seaside (also known as Seaside Park Beach) from the 303(d) list. The Los Angeles Water Board recommended keeping Rincon Beach on the 303(d) list due to an ongoing bacteria impairment.

TMDLs have been developed for many of the impairments in the Miscellaneous Ventura County Coastal Watersheds. TMDLs in effect include those for bacteria at Kiddie Beach and Hobie Beach, bacteria at McGrath Beach, and PCBs, pesticides, and sediment toxicity at McGrath Lake.

Santa Clara River Watershed Management Area. The Santa Clara River and its tributaries drain a watershed area of 1,620 square miles (1,036,800 acres) (Attachment B Figure B-4). At approximately 100 miles (161 kilometers) in length, the Santa Clara River is the largest river system in southern California that remains in a relatively natural state. The river originates on the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean between the cities of Ventura and Oxnard. Santa Clara River Reaches 1, 2, 3, 4A, 4B and major tributaries Santa Paula, Sespe and Piru Creeks are in Ventura County. Santa Clara River Reach 5 lies between Ventura County and Los Angeles County. Santa Clara River Reaches 6, 7, 8 and major tributaries Castaic, San Francisquito, and Bouquet Canyon Creeks are in Los Angeles County. About 40% of the watershed, the Upper Santa Clara River, is in Los Angeles County and about 60% of the watershed, the Lower Santa Clara River, is in Ventura County.

Land use in the watershed is predominately open space, most of which is National Forest or condor sanctuary. Residential, agriculture, and some industrial land uses occur along the mainstem. Portions of the MS4s of the incorporated cities of Santa Clarita, Fillmore, Santa Paula, Ventura and Oxnard and unincorporated areas of both counties discharge to the Santa Clara River system.

Significant biological resources described in Ventura County's General Plan include the extensive patches of high-quality riparian habitat that are present along the length of the river and its tributaries. Also considered significant are areas such as the wetlands found at the Santa Clara River estuary, along the river, and bordering lakes. One of the largest of Santa Clara River's tributaries, Sespe Creek, contains most of the Santa Clara River's remnant run of the steelhead trout. Piru and Santa Paula Creeks, two other tributaries of the Santa Clara River, also support good habitat for steelhead, although both contain barriers to migration. Additionally, the Santa Clara River has populations of unarmored three-spined stickleback (endangered), Santa Ana sucker, arroyo toad, and California least Bell's vireo. San Francisquito Canyon, Placerita Canyon, Soledad Canyon, Castaic, and Elizabeth Canyon Creeks are smaller tributaries that all provide valuable habitat. The Santa Clara River also serves as an important wildlife corridor. A lagoon exists at the mouth of the river and supports a large variety of wildlife.

Various reaches of the Santa Clara River are on the 2014/2016 Clean Water Act section 303(d) list of impaired water bodies for pesticides, metals, indicator bacteria, salts, and trash, among other pollutants. The elevated bacterial indicator densities are causing impairment of the REC-1 and REC-2 designated beneficial uses for the Santa Clara River Estuary and Reaches 3, 5, 6, and 7. The Estuary is also listed for toxaphene and residual amounts of other legacy pesticides (ChemA) in fish tissue. The excessive levels of chloride are impairing the AGR and GWR designated beneficial uses of Santa Clara River Reaches 3, 4A, 4B, 5 and 6. The trash in Lake Elizabeth is causing impairments to the WARM, WILD, RARE, REC-1 and REC-2 designated beneficial uses. TMDLs have been developed for these impairments in the watershed.

Stakeholders within the area under the jurisdiction of the Los Angeles Water Board have formed several long-range water planning groups and have developed IRWM Plans under Propositions 50 and 84. Stakeholders in the Los Angeles County portion of the Santa Clara River Watershed joined together to develop the IRWM Plan for the Upper Santa Clara River. They work closely with the IRWM group in the lower watershed, led by the Watersheds Coalition for Ventura County, which has a Santa Clara River Watershed Committee for IRWM Plan implementation in that watershed. Permittees within this watershed also participated in the development of a Storm Water Resource Plan pursuant to Water Code section 10563 et seq. in order to be eligible to apply for state funding for stormwater and dry weather runoff projects to improve water quality.

Calleguas Creek Watershed Management Area. Calleguas Creek and its major tributaries: Revolon Slough, Conjeo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi, drain a watershed area of 343 square miles (219,520 acres) in southern Ventura County and a small portion of western Los Angeles County (Attachment B Figure B-5). The northern boundary is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains. Land uses vary throughout the watershed. Urban development is generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area. The surrounding Oxnard Plain supports a large variety of agricultural crops. The lagoon borders on an Area of Special Biological

Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Various reaches of the Calleguas Creek Watershed are on the 2014/2016 Clean Water Act section 303(d) list of impaired water bodies for ammonia, chlordane, chloride, legacy pesticides, metals, bacteria, nutrients, and trash, among other pollutants.

Stakeholders within the area under the jurisdiction of the Los Angeles Water Board have formed several long-range water planning groups and have developed IRWM Plans under Propositions 50 and 84. Permittees within this watershed also participated in the development of a Storm Water Resource Plan pursuant to Water Code section 10563 et seq. in order to be eligible to apply for state funding for stormwater and dry weather runoff projects to improve water quality.

Santa Monica Bay Watershed Management Area. The Santa Monica Bay Watershed Management Area encompasses an area of 414 square miles (264,960 acres) (Attachment B Figure B-6). Its borders reach from the crest of the Santa Monica Mountains on the north and from the Ventura-Los Angeles County line to downtown Los Angeles. From there it extends south and west across the Los Angeles plain to include the area east of Ballona Creek and north of the Baldwin Hills. A narrow strip of land between Playa del Rey and Palos Verdes drains to the Bay south of Ballona Creek. The WMA includes several subwatersheds, the two largest being Malibu Creek to the northwest and Ballona Creek to the south. The Malibu Creek area contains mostly undeveloped mountain areas, large acreage residential properties, and many natural stream reaches, while Ballona Creek is predominantly channelized and drains a highly developed watershed.

Many of the Santa Monica Bay beaches are identified on the 2014/2016 Clean Water Act section 303(d) list of impaired water bodies for indicator bacteria. Santa Monica Bay offshore and nearshore is on the 2014/2016 Clean Water Act section 303(d) list of impaired water bodies for trash, DDTs, PCBs, arsenic, and mercury. The elevated bacterial indicator densities during both dry and wet weather are causing impairments of the REC-1 and REC-2 designated beneficial uses of the Santa Monica Bay beaches. The debris and elevated concentrations of DDT and PCBs are causing impairments to the IND, NAV, REC-1, REC-2, COMM, EST, MAR, BIOL, MIGR, WILD, RARE, SPWN, SHELL, and WET designated beneficial uses of the Santa Monica Bay. One of the impacts in marine habitats is sediment contamination and damage to marine life that the contaminants cause when they are released from the sediment (through natural fluctuations or through disturbance of the sediment) into the food chain. Bioaccumulation of DDT in white croaker, Dover sole, and California brown pelicans are well-known examples of the impacts caused by sediment contamination.

Malibu Creek subwatershed: The Malibu Creek subwatershed drains an area of about 109 square miles (69,760 acres) (Attachment B Figure B-6a). Approximately two-thirds of this subwatershed lies in Los Angeles County and the remaining third lies in Ventura County. Much of the land is part of the Santa Monica Mountains National Recreation Area and is under the purview of the National Parks Service. The watershed borders the eastern portion of Ventura County to the northwest and the Los Angeles River watershed to the east. Major tributaries include Cold Creek, Lindero Creek, Las Virgenes Creek, Medea Creek, and Triunfo Creek. The Malibu Creek watershed also includes lakes such as Lake Sherwood, Westlake Lake, Malibou Lake, and Lake Lindero. Located at the end of and receiving flows from

Malibu Creek is the 40-acre Malibu Lagoon. The Malibu Creek subwatershed land uses are 88% open space, 3% commercial/light industry, 9% residential, and less than 1% public.

Malibu Lagoon supports two important plant communities, the coastal salt marsh and coastal strand, and is an important refuge for migrating birds (over 200 species of birds have been observed). Perennial streams in Malibu Canyon support oak and riparian woodlands. Malibu Creek is also the southernmost watercourse in California where steelhead trout continue to spawn in relatively large numbers.

The Malibu Creek Watershed is on the 2014/16 Clean Water Act section 303(d) list of impaired water bodies for bacteria, nutrients, selenium, sulfates, sediment/siltation, and trash. Elevated bacterial indicator densities are causing impairment of the REC-1 and REC-2 designated beneficial uses of Malibu Creek, Malibu Lagoon, and the adjacent beaches. Excess nutrients and sedimentation/siltation are causing impairments to the REC-1, REC-2, WARM, COLD, EST, MAR, WILD, RARE, MIGR, and SPWN designated beneficial uses of waterbodies in the Malibu Creek Watershed. Selenium is causing impairments to the WARM designated beneficial uses of waterbodies in the Malibu Creek Watershed. Trash is causing impairments to the REC-1, REC-2, WARM, COLD, MIGR, WILD, RARE, SPWN, and WET designated beneficial uses of the waterbodies in the Malibu Creek Watershed.

Marina del Rey subwatershed: The Marina del Rey subwatershed is approximately 2.7 square miles (1,728 acres) located adjacent to the mouth of Ballona Creek (Attachment B, Figure B-6b). The Marina del Rey subwatershed is highly developed at 80%; the remaining 20% is split between water and open/recreation land uses.

Marina del Rey is on the 2014/2016 Clean Water Act section 303(d) list for bacteria and sediment concentrations of copper, lead, zinc, DDT, PCBs, chlordane, and sediment toxicity. The elevated bacterial indicator densities are causing impairment of the REC-1 and REC-2 designated beneficial uses at Marina del Rey Harbor Mothers' Beach and back basins. The toxic pollutants are causing impairments to the REC-1, MAR, WILD, COMM, and SHELL designated beneficial uses of the Marina del Rey Harbor.

Ballona Creek subwatershed: Ballona Creek and its tributaries drain a subwatershed of about 128 square miles (81,920 acres) (Attachment B, Figure B-6c). Ballona Creek is the largest drainage tributary to Santa Monica Bay and discharges to the ocean adjacent to the entrance of the Marina del Rey Harbor. The watershed boundary extends in the east from the crest of the Santa Monica Mountains southward and westward to the vicinity of central Los Angeles and thence to Baldwin Hills. Tributaries of Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous other storm drains. Ballona Creek is concrete lined upstream of Centinela Boulevard. All of its tributaries are either concrete channels or covered culverts. The channel downstream of Centinela Boulevard is trapezoidal composed of grouted rip-rap side slopes and an earth bottom. The urbanized areas of Ballona Creek account for 80% of the watershed; the partially developed foothill and mountains make up the other 20%.

The watershed encompasses an area that historically consisted of extensive wetlands. The current-day Ballona Wetlands are located near the mouth of the

creek and represents one of the few remaining regionally significant coastal wetlands along Santa Monica Bay. The complex of wetlands is a mixture of habitats dominated by coastal salt marsh; several special status species are supported there including Belding's Savannah Sparrow. In 2004, the State of California acquired ownership of this remaining wetland area (600 acres (243 hectares) in total).

Ballona Creek and Ballona Creek Estuary are on the 2014/2016 Clean Water Act section 303(d) list for trash, toxicity, bacteria, historic pesticides, PCBs, PAHs, and metals. The Ballona Creek Wetlands is on the 2014/2016 Clean Water Act section 303(d) list for trash, exotic vegetation, habitat alterations, and reduced tidal flushing. Trash is causing impairments to the REC-1, REC-2, WARM, WILD, EST, MAR, RARE, MIGR, SPWN, COMM, WET, and COLD designated beneficial uses of Ballona Creek. The metals, pesticides, PCBs, and PAHs in sediments and dissolved copper, dissolved lead, and dissolved zinc, are causing impairments to the REC-1, REC-2, EST, MAR, WILD, RARE, MIGR, SPWN, COMM, and SHELL designated beneficial uses of Ballona Creek Estuary, Ballona Creek, and Sepulveda Channel. The elevated bacterial indicator densities are causing impairment of the REC-1, LREC-1, and REC-2 designated beneficial uses of Ballona Creek, Sepulveda Channel, and Ballona Estuary. The excess sediment and invasive non-native vegetation are causing impairments to the EST, MIGR, RARE, REC-1, REC-2, SPWN, WET, and WILD designated beneficial uses of the Ballona Creek Wetlands.

Dominguez Channel and Greater Harbor Waters Watershed Management Area. The Dominguez Channel and Los Angeles/Long Beach Harbors Watershed Management Area (Dominguez WMA) is in the southern portion of the Los Angeles Basin (Attachment B Figure B-7). It covers an area of approximately 121 square miles (77,440 acres). Los Angeles Harbor is 7,500 acres and the Long Beach Harbor is 7,600 acres; together they have an open water area of approximately 8,128 acres. Along the northern portion of San Pedro Bay is a natural embayment formed by a westerly extension of the coastline which contains both harbors, with the Palos Verdes Hills the dominant onshore feature. The 15-mile-long Dominguez Channel drains a densely urbanized area to Inner Los Angeles Harbor. Despite its industrial nature, contaminant sources, disrupted wetlands habitat, and low flushing ability, the inner harbor area supports diverse fish and benthic populations and provides a protected nursery area for juvenile fish. The California least tern, an endangered species, nests in one part of the harbor complex. Some wetlands persist in the Machado Lake area. The outer part of both harbors (the greater San Pedro Bay within the breakwaters) has been less disrupted and supports a great diversity of marine life and a large population of fish. It is also open to the ocean at its eastern end and receives much greater flushing than the inner harbors.

Various reaches of the Dominguez WMA are on the 2014/2016 Clean Water Act section 303(d) list of impaired water bodies for metals, DDT, PCBs, PAHs, historic pesticides, coliform, and sediment toxicity. The elevated bacteria indicator densities are causing impairments to the SHELL, REC-1, and REC-2 designated beneficial uses of Los Angeles Harbor. The elevated levels of metals and organics are causing impairments to beneficial uses designated in these waters to protect aquatic life, including MAR and RARE. In addition, the elevated levels are causing impairments in the estuaries, which are designated with SPWN, MIGR, and WILD beneficial uses. Dominguez Channel also has an existing designated use of WARM and the Los Angeles River Estuary has the

designated use of WET. Beneficial uses associated with human use of these waters that are impaired due to the elevated concentrations of metals and organics include REC-1, REC-2, IND, NAV, COMM, and SHELL.

Machado Lake subwatershed: Machado Lake is a subwatershed of the Dominguez Channel Watershed (Attachment B, Figure B-7a). Wilmington Drain discharges into Machado Lake from the north; the channel is concrete lined from its origin south of Sepulveda Boulevard (between Normandie and Vermont Avenues) to where it crosses under the Harbor Freeway north of Lomita Boulevard. South of this point it changes to a soft bottom with natural side banks to where it empties into Machado Lake. Habitat in this part of the drain includes mature riparian woodland, riparian scrub, freshwater marsh, and weedy vegetation. The area is well-utilized by birds

Machado Lake is listed on the 2014/2016 Clean Water Act section 303(d) list for trash, nutrients, PCBs and historic pesticides. Trash, nutrients and toxic pollutants are causing impairments to the WARM, WET, RARE, WILD, REC-1 and REC-2 designated beneficial uses of Machado Lake. TMDLs have been adopted by the Los Angeles Water Board for trash, nutrients, PCBs and pesticides for Machado Lake. The point sources of trash and nutrients into Machado Lake are stormwater and non-stormwater discharges from the MS4. Stormwater discharges occur through the following sub-drainage systems: Drain 553, Wilmington Drain, Project 77/510, and Walteria Lake Retention Basin.

Los Angeles River Watershed Management Area. The Los Angeles River Watershed Management Area drains a watershed of 824 square miles (527,360 acres) (Attachment B Figure B-8) in Los Angeles County and a small portion of south eastern Ventura County. Approximately 1.2 acres of Simi Valley, which is in Ventura County, drains to the Los Angeles River Watershed and is mainly undeveloped. The Los Angeles River WMA is one of the largest in the Los Angeles Region and is also one of the most diverse in terms of land use patterns. Approximately 324 square miles of the watershed are covered by forest or open space land including the area near the headwaters, which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The remainder of the watershed is highly developed. There are approximately 205 miles of engineered channels within the Los Angeles River Watershed. A 6.8-mile (11-kilometer) long reach in the narrows area (in the middle portion of the river system), where ground water rises into the streambed, is mostly unlined along the stream bottom and provides natural habitat for fish and other wildlife in an otherwise concrete conveyance. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. Major tributaries to the river in the San Fernando Valley are the Pacoima Wash, Tujunga Wash (both drain portions of the Angeles National Forest in the San Gabriel Mountains), Burbank Western Channel, and Verdugo Wash (both drain the Verdugo Mountains). From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by rail yards, freeways, and major commercial and government buildings. The river is hydraulically connected to the San Gabriel River Watershed by the Rio Hondo through the Whittier Narrows Reservoir. Flows from the San Gabriel River and Rio Hondo merge at this reservoir during larger flood events and thus flows from the San Gabriel River Watershed may impact the Los Angeles River. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas. The Los Angeles River tidal prism/estuary begins in Long Beach at

Willow Street and runs approximately three miles before joining with Queensway Bay. The channel has a soft bottom in this reach with concrete-lined sides.

A number of lakes are also part of the Los Angeles River WMA, including Legg Lake, Peck Road Park, Belvedere Park, Hollenbeck Park, Lincoln Park, and Echo Park Lakes as well as Lake Calabasas. These lakes are heavily used for recreational purposes.

Various reaches and lakes within the Los Angeles River WMA are on the 2014/2016 Clean Water Act section 303(d) list of impaired water bodies for trash, nitrogen compounds and related effects (ammonia, nitrate, nitrite, algae, pH, odor, and scum), metals (copper, cadmium, lead, zinc, aluminum and selenium), bacteria, and historic pesticides. Beneficial uses impaired by trash are REC-1, REC-2, WARM, WILD, EST, MAR, RARE, MIGR, SPWN, COMM, WET and COLD. The excess nitrogen compounds are causing impairments to the REC-1, REC-2, WARM, COLD, and WILD beneficial uses. Excess metals and historic pesticides are causing impairments to the WILD, RARE, WARM, WET, and GWR beneficial uses. Elevated indicator bacteria densities are causing impairments to the REC-1 and REC-2 beneficial uses.

San Gabriel River Watershed Management Area. The San Gabriel River Watershed (SGR WMA) receives drainage from a 689-square mile (440,960 acre) area of eastern Los Angeles County (Attachment B, Figure B-9). The main channel of the San Gabriel River is approximately 58 miles long. Its headwaters originate in the San Gabriel Mountains with the East, West, and North Forks. The river empties to the Pacific Ocean at the Los Angeles and Orange Counties boundary in Long Beach. The main tributaries of the river are Big Dalton Wash and Little Dalton Wash, San Dimas Wash, Walnut Creek, San Jose Creek, Fullerton Creek, and Coyote Creek. Part of the Coyote Creek subwatershed is in Orange County and is under the authority of the Santa Ana Water Board.[8] A number of lakes and reservoirs are also part of the SGR WMA, including Puddingstone Reservoir. Land use in the watershed is diverse and ranges from

[8] The Orange County portion of the Coyote Creek subwatershed comprises 86 square miles. MS4 discharges within the Orange County portion of the Coyote Creek subwatershed are within the jurisdiction of the Santa Ana Water Board and are not covered by the Order. These MS4 discharges, which drain into Coyote Creek, eventually reach the San Gabriel River within the boundaries of the Los Angeles Water Board's jurisdiction. Sources of MS4 discharges from Orange County to the San Gabriel River include the following. The Orange County Flood Control District (OCFCD) owns and operates the Los Alamitos Retarding Basin and Pumping Station (Los Alamitos Retarding Basin). The Los Alamitos Retarding Basin is within the San Gabriel River Watershed and is located adjacent to the Los Angeles and Orange County boundary. The majority of the 30-acre Los Alamitos Retarding Basin is in Orange County; however, the northwest corner of the facility is in Los Angeles County. Stormwater and non-stormwater discharges, which drain to the Los Alamitos Retarding Basin, are pumped to the San Gabriel River Estuary (SGR Estuary) through pumps and subterranean piping. The pumps and discharge point are in Los Angeles County. The OCFCD pumps the water within the Los Alamitos Retarding Basin to the SGR Estuary through four discharge pipes, which are covered by tide gates. The discharge point is located approximately 700 feet downstream from the 2nd Street Bridge in Long Beach. The total pumping capacity of the four pumps is 800 cubic feet per second (cfs). There is also a 5 cfs sump pump that discharges nuisance flow continuously to the SGR Estuary though a smaller diameter uncovered pipe. The discharge from the Los Alamitos Retarding Basin is covered under the Orange County Municipal NPDES Storm Water Permit (NPDES Permit No. CAS618030, Santa Ana Regional Water Quality Control Board Order No. R8-2009-0030), which was issued to the County of Orange, Orange County Flood Control District and Incorporated Cities on May 22, 2009. The Orange County MS4 Permit references the San Gabriel River Metals and Selenium TMDL (Metals TMDL). The waste load allocations listed in the Metals TMDL for Coyote Creek are included in the Orange County MS4 Permit. However, the Orange County MS4 Permit does not contain the dry weather copper waste load allocations assigned to the Estuary.

predominantly open space in the upper watershed to urban land uses in the middle and lower parts of the watershed.

The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the Los Angeles Coastal Plain, before becoming a soft bottom channel once again near the ocean in the City of Long Beach. Flow in these lower reaches is dominated by effluent from several municipal wastewater treatment facilities and MS4 discharges.

Various reaches and lakes of the SGR WMA are on the 2014/2016 Clean Water Act section 303(d) list of impaired water bodies due to bacteria, trash, nitrogen, phosphorus, historic pesticides, PCBs, and metals (copper, lead, selenium, and zinc). Beneficial uses impaired by trash are REC-1, REC-2, WARM, COLD, and WILD. Metals and historic pesticides loadings are causing impairments of the WILD, WARM, COLD, RARE, EST, MAR, MIGR, SPWN, WET, MUN, IND, AGR, GWR, and PROC beneficial uses. The excess nitrogen and phosphorus are causing impairments to the REC-1, REC-2, WARM, COLD, and WILD beneficial uses. Elevated indicator bacteria densities are causing impairments to the REC-1 and REC-2 beneficial uses.

Los Cerritos Channel and Alamitos Bay Watershed Management Area. The Los Cerritos Channel is concrete-lined above the tidal prism and drains a small but densely urbanized area of east Long Beach (Attachment B, Figure B-10). The watershed covers an area of approximately 37 square miles (23,680 acres) out of which 5 square miles (3,200 acres) is Alamitos Bay. The Los Cerritos WMA is located between the Los Angeles and San Gabriel Rivers and drains to the same general area as the San Gabriel River. There is also a minor hydraulic connection between the lower San Gabriel River and Los Cerritos Channel due to the location of a power plant intake within the Long Beach Marina; the discharge from this facility is into the San Gabriel River estuary. The Los Cerritos Channel's tidal prism starts at Anaheim Road and connects with Alamitos Bay through the Marine Stadium; the wetlands connect to the Channel a short distance from the lower end of the Channel. The wetland, and portion of the channel near the wetland, is an overwintering site for a great diversity of birds despite its small size. An endangered bird species, the Belding's Savannah Sparrow, may nest there and an area adjacent to the wetlands is a historic least tern colony site. A small marina is located in the channel, which is also used by rowing teams and is a popular fishing area. Alamitos Bay is composed of the Marine Stadium, a recreation facility built in 1932; Long Beach Marina; a variety of public and private berths; and the Bay proper. A small bathing lagoon, Colorado Lagoon located entirely in Long Beach, has a tidal connection with the Bay and is used by overwintering migratory birds. The majority of land use in this WMA is high density residential.

Los Cerritos Channel is on the 2014/2016 Clean Water Act section 303(d) List of impaired water bodies for metals (copper, zinc, and lead), trash, ammonia, pH, chlordane, and bacteria. Alamitos Bay is on the 2014/2016 Clean Water Act section 303(d) List of impaired water bodies for bacteria and dissolved oxygen. Beneficial uses impaired by these constituents in the Los Cerritos Channel include WILD, REC2 and WARM.

Middle Santa Ana River Watershed Management Area. The Middle Santa Ana River Watershed Management Area (MSAR WMA) covers approximately 488 square miles (312,320 acres) and lies mostly in San Bernardino and Riverside counties; however, a small part of Los Angeles County is also included. The area of Los Angeles County, which lays in the MSAR WMA, includes portions of the cities of Pomona (12.3 square miles), Claremont (8.4 square miles), and Diamond Bar (0.7 square miles) and unincorporated Los Angeles County (12.3 square miles). The MSAR WMA is comprised of three subwatersheds. The subwatershed that includes portions of Pomona and Claremont is the Chino Basin Subwatershed. Surface drainage from Pomona and Claremont is generally southward toward San Antonio Creek, which is tributary to Chino Creek, which feeds into the Prado Flood Control Basin.

Various reaches of the MSAR WMA, including Chino Creek, are listed on the 2014/16 Clean Water Act section 303(d) list for bacteria. Elevated bacterial indicator densities are causing impairments of the REC-1 and REC-2 beneficial uses for the Santa Ana River Reach 3, Chino Creek Reaches 1 and 2, Mill Creek (Prado Area), Cucamonga Creek Reach 1, and Prado Park Lake.

The Santa Ana River Watershed is a major WMA within the Santa Ana Water Board jurisdiction. However, 30.5 square miles of the Santa Ana River Watershed falls within the Los Angeles Water Board's jurisdiction and therefore will be addressed in the Order except as follows. Per an agreement between the Los Angeles Water Board and the Santa Ana Water Board dated May 31, 2013, the Santa Ana Water Board is designated as the regulator of discharges of bacteria by the cities of Claremont and Pomona through their MS4s to receiving waters within the Santa Ana River Watershed addressed by the Middle Santa Ana River Watershed Bacterial TMDL.[9] Per this agreement, both the Santa Ana Water Board and Los Angeles Water Board have the authority to enforce the terms of any MS4 permit issued to the cities of Claremont and Pomona if the MS4 discharges occur with the Los Angeles Water Board's geographic jurisdiction.

C. Description of the Permittees' MS4s

The Permittees' MS4s, like many MS4s in the nation, are based on regional floodwater management systems that use both natural and altered water bodies to achieve flood management goals. Most Permittees' MS4s comprise a large interconnected system used by multiple municipalities. This extensive system conveys stormwater and non-stormwater across municipal boundaries where it is commingled within the MS4 and then discharged to receiving water bodies.

The area covered under the Order contains an extensive drainage network that serves incorporated and unincorporated areas in every Watershed Management Area within the Los Angeles Region. The Los Angeles Region comprises all basins draining into the Pacific Ocean between the southeasterly boundary, located in the westerly part of Ventura County, of the watershed of Rincon Creek and a line which coincides with the southeasterly boundary of Los Angeles County from the ocean to San Antonio Peak and follows thence the divide between San Gabriel River and Lytle Creek drainages to the divide between Sheep Creek and San Gabriel River drainages. (California Water Code § 13200(d)). Maps depicting the major drainage infrastructure within the area covered under the Order are included in Attachment C. Rough estimates based on GIS data and other information from Permittees indicate that the Los Angeles Region has

[9] Attachment D to Order No. R8-2013-0043.

an over 7,300-mile subsurface network of MS4 infrastructure (including main storm drain lines, lateral lines, and culverts). Table F-2 below provides approximated information on the extent of select Permittees' MS4-related infrastructure based on available information carried over from the previous permits, information provided by Ventura County Permittees upon request, GIS data, and annual reports.

Table F-2. Select Permittees' MS4-Related Infrastructure[10]

Permittee	Area (Square Miles)	Catch Basins	Storm Drain Length (miles)	Open Channel Length (miles)
Ventura County Watershed Protection District	8.9	0	59.5	219
Ventura County	32.4	1421	35.6	0.01
Camarillo	19.86	1521	60	5.78
Fillmore	3.2	208	18.2	5
Moorpark	12.5	737	57.0	0
Ojai	4.4	172	4.1	6
Oxnard	27.1	3644	167.3	10.62
Port Hueneme	4.5	234	6.4	3
Santa Paula	5.5	520	18.5	1
Simi Valley	42.3	1783	107.5	3
Thousand Oaks	55.4	3293	205.4	2
Ventura	22.2	1847	139.6	9
Long Beach	47.7	3800	180	49
LACFCD / Los Angeles County	3100	88000	3500	500
City of Los Angeles	469	30000	1600	31
El Monte	10	316	11	0.4
Glendale	30.6	1045	136.7	14.4
Inglewood	9	1157	12	0
Pasadena	26	1050	30	7.3

[10] All numbers in this table are the Permittees' best estimates based on knowledge of their storm drainage system; these estimates do not include all conveyances subject to the definition of an MS4 under federal regulations. Estimates can vary due to definition of terms, and GIS categorization and mapping accuracy. These are subject to change as data is field verified and new infrastructure is constructed or decommissioned by Permittees.

Permittee	Area (Square Miles)	Catch Basins	Storm Drain Length (miles)	Open Channel Length (miles)
Santa Monica	8.3	850	68.3	0.5
Torrance	20	2000	20	3

Additionally, there are numerous stormwater treatment facilities, including stormwater retention basins and stormwater detention basins, within the region. Some examples of existing stormwater treatment facilities include the Santa Monica Urban Runoff Recycling Facility (SMURRF) (City of Santa Monica), Marie Canyon (City of Malibu), and Paradise Cove (City of Malibu). Some examples of existing stormwater retention/detention basins include Oxford Basin (County of Los Angeles), Amie Retention Basin (Torrance), and Louie Pompei Park (Glendora).

Stormwater and non-stormwater are conveyed through the MS4s and ultimately discharge into receiving waters of the Los Angeles Region. MS4s subject to the Order receive stormwater and non-stormwater flows from various sources, including conveyances owned by the Permittees covered by the Order and other public agencies, NPDES permitted discharges, discharges authorized by the U.S. EPA (including discharges subject to a decision document approved pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)), rising ground water, and natural flows.

The volume of stormwater and non-stormwater conveyed through the MS4s can be estimated by looking at impervious area data. Detailed data on impervious area is unavailable for Ventura County Permittees at the time of this permit development. However, per the permit reapplication package (or Report of Waste Discharge, also known as the ROWD), Ventura County has 200,000 acres of developed land. Specific data for Los Angeles County, however, is available through the Safe, Clean Water Program (Measure W) information provided by Los Angeles County and LACFCD and is presented in Table F-3 below.

Table F-3. Los Angeles County Impervious Area

Permittee	Impervious Area (ac)
Agoura Hills	840
Alhambra	2,066
Arcadia	2,361
Artesia	491
Azusa	1,526
Baldwin Park	1,717
Bell	755
Bell Gardens	757
Bellflower	1,936
Beverly Hills	1,290
Bradbury	143
Burbank	3,407

Permittee	Impervious Area (ac)
Calabasas	1,089
Carson	6,432
Cerritos	2,363
Claremont	1,388
Commerce	2,974
Compton	2,855
County of Los Angeles	28,769
Covina	1,757
Cudahy	416
Culver City	1,280
Diamond Bar	2,060
Downey	3,406
Duarte	604
El Monte	2,714
El Segundo	2,059
Gardena	1,982
Glendale	3,939
Glendora	2,160
Hawaiian Gardens	300
Hawthorne	1,903
Hermosa Beach	372
Hidden Hills	235
Huntington Park	1,001
Industry	4,278
Inglewood	2,386
Irwindale	1,164
La Cañada Flintridge	914
La Habra Heights	417
La Mirada	2,275
La Puente	816
La Verne	1,430
Lakewood	2,597
Lawndale	537
Lomita	535
Long Beach	11,150
Los Angeles	87,031
Lynwood	1,351
Malibu	1,035
Manhattan Beach	995
Maywood	407

Permittee	Impervious Area (ac)
Monrovia	1,247
Montebello	2,286
Monterey Park	1,803
Norwalk	2,634
Palos Verdes Estates	603
Paramount	1,586
Pasadena	3,613
Pico Rivera	2,278
Pomona	4,598
Rancho Palos Verdes	1,643
Redondo Beach	1,738
Rolling Hills	282
Rolling Hills Estates	448
Rosemead	1,395
San Dimas	1,467
San Fernando	642
San Gabriel	1,057
San Marino	540
Santa Clarita	8,301
Santa Fe Springs	3,636
Santa Monica	1,903
Sierra Madre	354
Signal Hill	686
South El Monte	1,065
South Gate	2,419
South Pasadena	590
Temple City	1,057
Torrance	5,738
Vernon	2,592
Walnut	1,163
West Covina	3,213
West Hollywood	630
Westlake Village	565
Whittier	2,853
Grand Total	**275,290**

The Order applies to all 99 Permittees within the nine major coastal WMAs under the jurisdiction of the Los Angeles Water Board. These 99 Permittees include 95 cities, two counties, and two flood control districts. The two flood control districts are described in more detail, below, as the nature and scope of their authorities is different from the other 97 Permittees.

D. Description of Flood Control District Permittees

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

LACFCD's system includes the majority of drainage infrastructure within incorporated and unincorporated areas of Los Angeles County in every watershed, including approximately 500 miles of open channel, 3,500 miles of underground drains, and an estimated 88,000 catch basins. Portions of LACFCD's current system were originally unmodified natural rivers and water courses. LACFCD's system conveys both storm and non-stormwater throughout Los Angeles County. Other Permittees' MS4s within Los Angeles County connect and discharge to LACFCD's system.

The Ventura County Watershed Protection District (VCWPD) was formed, in part, to provide for the control and conservation of flood and stormwaters, and for the protection and maintenance of watercourses, watersheds, and life and property within the VCWPD from damage or destruction from storm flows or flooding. The VCWPD was originally established on September 12, 1944 as the "Ventura County Flood Control District." On January 1, 2003, per California Water Code Appendix, Chapter 46, the name was changed to the Ventura County Watershed Protection District to reflect changes in community values, regulatory requirements, and funding opportunities. The change in name also reflected VCWPD's desire to emphasize integrated watershed management and to solve flood control problems with environmentally sound approaches.

VCWPD's system includes infrastructure within incorporated and unincorporated areas of Ventura County in every watershed. VCWPD owns/operates approximately 219 miles of open channel and 60 miles of storm drains.

Unlike other Permittees, including the counties of Los Angeles and Ventura, LACFCD and VCWPD do not own or operate any municipal sanitary sewer systems, public streets, roads, or highways. LACFCD and VCWPD also have no planning, zoning, development permitting or other land use authority over industrial or commercial facilities, or new developments or re-development projects located in any incorporated or unincorporated areas within their service area. Nonetheless, as owners and operators of MS4s, LACFCD and VCWPD are required by federal law to control pollutant discharges into and from their MS4s, including but not limited to the ability to control through interagency agreements among co-Permittees and other owners of MS4s the contribution of pollutants from one portion of the MS4 to another portion of the MS4.

Under Order No. R4-2010-0108, VCWPD was designated the Principal Permittee. However, in the Order, the role of Principal Permittee has been eliminated, since the Order applies to Permittees in both Los Angeles and Ventura Counties. Furthermore, under Order No. R4-2012-0175, LACFCD was prescribed separate requirements for minimum control measures. The Order generally does not include separate requirements for LACFCD or VCWPD; however, it notes where certain provisions do not apply (e.g., provisions relating to the industrial and commercial facilities inspection

programs, planning and land development programs, and new development and re-development projects within their jurisdictional boundaries).

E. Nature of MS4 Discharges as a Source of Pollutants to Receiving Waters and Need for Regulation

Stormwater and non-stormwater discharges consist of surface runoff generated from various land uses, which is conveyed via the MS4 and ultimately discharge to surface waters throughout the region. Discharges of stormwater and non-stormwater through the MS4s within the Los Angeles Region convey pollutants to surface waters.

The quality of stormwater and non-stormwater discharges from MS4s is fundamentally important to public health, the health of the environment, and the quality of life in Southern California. Polluted stormwater and non-stormwater discharges from MS4s are a leading cause of water quality impairment in the Los Angeles Region. Stormwater and non-stormwater discharges are often contaminated with pesticides, fertilizers, fecal indicator bacteria and associated pathogens, trash, oil and other automotive byproducts, and many other toxic substances generated by activities in the urban environment. Water that flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas convey these pollutants through the MS4 directly into receiving waters of the Region.

The water quality impacts and resulting ecosystem impacts and increased public health risks from MS4 discharges that affect receiving waters nationwide and throughout the jurisdiction of the Los Angeles Water Board, including its coastline, are well documented. One of the seminal studies on stormwater impacts was the National Urban Runoff Program (NURP) Study (U.S. EPA 1983), which showed that MS4 discharges from residential, commercial, and light industrial areas contain significant loadings of total suspended solids and other pollutants. The NURP Study also found that pollutant levels from illicit discharges were high enough to significantly degrade receiving water quality, and threaten aquatic life, wildlife, and human health. Many studies since continue to support the conclusions of the NURP Study. The general findings and conclusions of the NURP Study are reiterated in the more recent 2008 National Research Council report “Urban Runoff Management in the United States” as well as in a regional study, “Sources, Patterns and Mechanisms of Storm Water Pollutant Loading from Watersheds and Land Uses of the Greater Los Angeles Area, California,” SCCWRP Technical Report 510 (2007), funded in large part by the Los Angeles Water Board.

Some of the conclusions of the 2007 regional study, which largely remain true today (as demonstrated by an analysis of monitoring data collected under the three previous permit terms), were as follows:

- *Storm water runoff from watershed and land use-based sources is a significant contributor of pollutant loading and often exceeds water quality standards*. High pollutant concentrations were observed throughout the study at both mass emission (ME) and land use (LU) sites. Pollutant concentrations frequently exceeded water quality standards.
- *Storm water Event Mean Concentrations (EMCs), fluxes and loads were substantially lower from undeveloped open space areas when compared to developed urbanized watersheds*. Storms sampled from less developed watersheds produced pollutant EMCs and fluxes that were one to two orders of magnitude lower than comparably sized storms in urbanized watersheds.

Furthermore, the higher fluxes from developed watersheds were generated by substantially less rainfall than the lower fluxes from the undeveloped watersheds, presumably due to increased impervious surface area in developed watersheds.

- *The Los Angeles region contributed a similar range of storm water runoff pollutant loads as that of other regions of the United States*. Comparison of constituent concentrations in storm water runoff from land use sites from this study reveal median EMCs that are comparable to U.S. averages reported in the National Stormwater Quality Database (NSQD; Pitt et al., 2003). Comparison to the NSQD data set provides insight to spatial and temporal patterns in constituent concentrations in urban systems. Similarities between levels reported in the NSQD and this study suggest that land-based concentrations in southern California storm water are generally comparable to those in other parts of the country.
- *Peak concentrations for all constituents were observed during the early part of the storm*. Constituent concentrations varied with time over the course of storm events. For all storms sampled, the highest constituent concentrations occurred during the early phases of storm water runoff with peak concentrations usually preceding peak flow. Although the pattern of an early peak in concentration was comparable in both large and small developed watersheds, the peak concentration tended to occur later in the storm and persist for a longer duration in the smaller developed watersheds. Therefore, monitoring programs must capture the early portion of storms and account for intra-storm variability in concentration in order to generate accurate estimates of EMC and contaminant loading. Programs that do not initiate sampling until a flow threshold has been surpassed may severely underestimate storm EMCs.
- *Highest constituent loading was observed early in the storm season with intra-annual variability driven more by antecedent dry period than amount of rainfall*. Seasonal differences in constituent EMCs and loads were consistently observed at both ME and LU sites. In general, early season storms (October - December) produce significantly higher constituent EMCs and loads than late season storms (April - May), even when rainfall quantity was similar. This suggests that the magnitude of constituent load associated with storm water runoff depends, at least in part, on the amount of time available for pollutant build-up on land surfaces. The extended dry period that typically occurs in arid climates such as southern California maximizes the time for constituents to build-up on land surfaces, resulting in proportionally higher concentrations and loads during initial storms of the season.

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

- *Increased volume and velocity of surface runoff*. There are three types of human-made impervious covers that increase the volume and velocity of runoff: (i) rooftop, (ii) transportation imperviousness, and (iii) non-porous (impervious) surfaces. As these impervious surfaces increase, infiltration will decrease, forcing more water to run off the surface, picking up speed and pollutants.

- *The concentration of pollutants in the runoff*. Certain activities, such as those from industrial sites, are large contributors of pollutant concentrations to the MS4.

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

Studies conducted by the United States Geological Survey (USGS) through its National Water Quality Assessment (NAWQA) program confirm the link between urbanization and water quality impairments in urban watersheds due to contaminated stormwater runoff (USGS, 2001).

Furthermore, the water quality impacts of urbanization and urban stormwater discharges have been examined and described by many researchers and summarized by U.S. EPA in a 1997 publication titled “Urbanization and Streams: Studies of Hydrologic Impacts”. Urbanization causes changes in hydrology and increases pollutant loads which adversely impact water quality and impair the beneficial uses of receiving waters. Increases in population density and imperviousness result in changes to stream hydrology including:

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

The 2016 National Water Quality Inventory (CWA Section 305(b) Report) showed that urban runoff/storm water discharges contribute to the impairment of 49,330 miles of streams, to the impairment of 759,483 acres of lakes, to the impairment of 316 miles of coastal shoreline, and to the impairment of 16,773 square miles of estuaries in the United States.

Permittees in Ventura County and Los Angeles County have conducted monitoring to, among other objectives:

- assess the overall health and trends in receiving water quality;
- assess impacts of MS4 discharges on receiving waters;
- identify sources of pollutants;
- assess compliance with receiving water limitations and water quality-based effluent limitations derived from TMDL waste load allocations; and
- measure and improve the effectiveness of measures implemented to comply with their MS4 permits.

Monitoring by Permittees in the Los Angeles Region indicates that concentrations of pathogen indicators (fecal coliform, total coliform, and enterococcus), heavy metals (such as Pb, Cu, Zn, Cd, As, Ni, Ag) and pesticides (such as diazinon, malathion, lindane, total chlordane) among others exceed water quality standards in receiving waters. Receiving water impacts studies found that stormwater discharges from urban watersheds exhibit toxicity attributable to heavy metals. Bioassessments of the benthic communities showed bioaccumulation of toxicants. Sediment analysis showed higher concentrations of pollutants, such as Pb and PAHs, in urban watersheds than in rural watersheds (2 to 4 times higher). In addition, toxicity of dry weather, non-stormwater flows was observed with the cause of toxicity undetermined. Other studies have documented concentrations of pollutants that exceed water quality standards in storm drains flowing to the ocean during dry weather, and adverse health impacts from swimming near flowing storm drains (LARWQCB, 2020; Haile et al., 1999).

Trash is also a serious and pervasive water quality problem in the Los Angeles Region and statewide. In 2015, during development of the Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) for Trash Provisions and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries (collectively referred to as "the Trash Amendments"), the State Water Board conducted a comprehensive assessment of the impacts of trash on beneficial uses of surface waters throughout the state, including impacts to aquatic habitat and aquatic life, public health, contact and non-contact water recreation, commercial and sport fishing, navigation, and Native American culture.[11] Trash in waterways causes significant water quality problems. Small and large floatables inhibit the growth of aquatic vegetation, decreasing habitat and spawning areas for fish and other living organisms. Wildlife living in rivers and in riparian areas can be harmed by ingesting or becoming entangled in floating trash. Except for large items, settleables are not always obvious to the eye. They include glass, cigarette butts, rubber, and construction debris, among other things. Settleables can be a problem for bottom feeders and can contribute to sediment contamination. Some debris (e.g., diapers, medical and household waste, and chemicals) are a source of bacteria and toxic substances. Floating debris that is not trapped and removed will eventually end up on the beaches or in the open ocean, keeping visitors away from our beaches and degrading coastal waters. Through periodic surface water quality assessments pursuant to Clean Water Act section 305(b) and identification of impaired waters pursuant to Clean Water Act section 303(d), the Los Angeles Water Board has determined that current levels of trash exceed the existing water quality objectives contained in the Basin Plan that are necessary to protect the beneficial uses of many surface waters. Los Angeles Water Board staff regularly observes trash in surface waters throughout the Los Angeles Region. Non-profit organizations such as Heal the Bay, Friends of the Los Angeles River (FoLAR) and others organize volunteer clean-ups periodically and document the amount of trash collected. Significant strides have been made by a number of Permittees in addressing this problem through the implementation of control measures to achieve waste load allocations established in trash TMDLs.

As discussed above, pollutants in stormwater and non-stormwater have damaging effects on both human health and aquatic ecosystems. Water quality assessments

[11] State Water Resources Control Board. Amendment to the Water Quality Control Plan for the Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California: Final Staff Report Appendix A "Trash Background."

conducted by the Los Angeles Water Board have identified impairment of beneficial uses of water bodies in the Los Angeles Region caused or contributed by pollutants in MS4 discharges. As a result of these impairments, there are beach postings, fish consumption advisories, ecosystem and recreational impacts from trash and debris, and toxic conditions for aquatic life, among others. Forty-five TMDLs established by the Los Angeles Water Board and U.S. EPA identify MS4 discharges as one of the pollutant sources causing or contributing to the water quality impairments of the myriad waterbodies addressed by the TMDLs.

The Ventura County Permittees' January 2015 Report of Waste Discharge identifies a number of pollutants of concern in Table 3-25, including indicator bacteria, trash, sedimentation/siltation, pesticides (diazinon, chlorpyrifos, dieldrin, chlordane, DDT compounds, toxaphene, and bifenthrin), minerals (boron, chloride, sulfate, TDS), PCBs, metals (copper, nickel, mercury, aluminum), selenium, nutrients and nutrient related effects (total nitrogen, total phosphorus, algal biomass, algal percent cover, dissolved oxygen), toxicity, and temperature among others. Ventura County Permittees' Annual Reports (2009/2010 – 2018/2019) confirm these pollutants of concern, reporting E. coli, chloride, total dissolved solids (TDS), selenium and metals, including dissolved copper and total aluminum as some of the pollutants in MS4 discharges. Additionally, the Los Angeles Water Board has also identified nutrients, pesticides, heavy metals, and trash as pollutants of concern in various areas of Ventura County and, through TMDL development, has identified MS4 discharges as one of the sources of these pollutants. An analysis of monitoring data relative to TMDL implementation in Ventura County is summarized below.

The Los Angeles Water Board, based on monitoring data collected during the term of Order No. R4-2012-0175 (2012/2013 – 2016/2017) has identified bacteria, nutrients, pesticides, metals, and trash among others as pollutants of concern in various areas of Los Angeles County and, through TMDL development, has identified MS4 discharges as one of the sources of these pollutants. An analysis of monitoring data analysis relative to TMDL implementation in Los Angeles County is also summarized below.

1. Mass Emission Stations

Permittees have historically monitored receiving waters throughout the Los Angeles Region at a set of receiving water monitoring stations referred to as "mass emission stations." These stations were established to assess compliance with the Los Angeles County MS4 Permit and the Ventura County MS4 Permit. The mass emission stations are generally located at the base of watersheds and are intended to monitor the quality of water discharged from large mixed land use areas. Results from the mass emission monitoring are also used to estimate pollutant loads and to analyze long term water quality trends. Monitoring at these stations provides a high-level look at the impacts of MS4 discharges on receiving waters during storm events and during dry weather conditions.

a. Wet Weather Mass Emission Station Monitoring

The table below highlights the frequency that select constituents exceeded wet weather TMDL targets and/or Basin Plan water quality objectives at each mass emission station during the period of the permit terms for Order No. R4-2010-0108 and Order No. R4-2012-0175 from 2009 to 2017. This table shows that bacteria and metals are not achieving objectives during storm events throughout the Los Angeles Region. *E. coli* exceeded TMDL targets and/or Basin Plan objectives in more than 25% of wet weather samples. Additionally,

eight of ten stations had metals that exceeded TMDL targets and/or Basin Plan objectives in more than 25% of wet weather samples. Nutrients had exceedances in two of the ten stations.

Table F-4. Summary of Major Constituents Exceeding TMDL Targets and/or Basin Plan Water Quality Objectives at Mass Emission Stations During Wet Weather Conditions (2009-2017)

Mass Emission Station	Condition	1% - 10% of Samples Exceeded TMDL Target/Basin Plan Objective	11% - 25% of Samples Exceeded TMDL Target/Basin Plan Objective	> 25% of Samples Exceeded TMDL Target/Basin Plan Objective
Ballona Creek	Wet	-	Total Lead	*E. coli*, Total Copper, Total Zinc
Calleguas Creek	Wet	-	-	*E. coli*
Coyote Creek	Wet	-	-	*E. coli*, Total Copper, Total Zinc
Dominguez Channel	Wet	-	Total Lead	*E. coli*, Total Copper, Total Zinc
Los Angeles River	Wet	-	Total Lead	*E. coli*, Total Copper, Total Zinc
Malibu Creek	Wet	-	-	*E. coli*, Total Nitrogen, Total Phosphorus
San Gabriel River	Wet	-	Total Zinc	*E. coli*, Total Copper
Santa Clara River (Lower)	Wet	Nitrate + Nitrite	-	*E. coli*, Total Copper, Total Zinc
Santa Clara River (Upper)	Wet	Total Lead	Total Zinc	*E. coli*, Total Copper
Ventura River	Wet	-	-	*E. coli*

b. Dry Weather Mass Emission Station Monitoring

The table below similarly shows the frequency that the same set of constituents exceeded dry weather TMDL targets and/or Basin Plan water quality objectives at each mass emissions station. *E. coli* exceeded TMDL targets and/or Basin Plan objectives in six of ten stations. Metals exceeded targets and limitations in two of ten stations. Nutrients exceeded targets and limitations in two of ten stations.

Table F-5. Summary of Major Constituents Exceeding TMDL Targets and/or Basin Plan Water Quality Objectives at Mass Emission Stations During Dry Weather Conditions (2009-2017)

Mass Emission Station	Condition	1% - 10% of Samples Exceeded TMDL Target/Basin Plan Objective	11% - 25% of Samples Exceeded TMDL Target/Basin Plan Objective	> 25% of Samples Exceeded TMDL Target/Basin Plan Objective
Ballona Creek	Dry	Total Copper, Total Zinc	*E. coli*	-
Calleguas Creek	Dry	-	*E. coli*	-
Coyote Creek	Dry	-	-	*E. coli*
Dominguez Channel	Dry	-	Total Copper	*E. coli*
Los Angeles River	Dry	-	-	*E. coli*
Malibu Creek	Dry	-	-	Total Nitrogen, Total Phosphorus
San Gabriel River	Dry	-	Nitrate + Nitrite	-
Santa Clara River (Lower)	Dry	-	-	-
Santa Clara River (Upper)	Dry	-	-	-
Ventura River	Dry	-	*E. coli*	-

2. Bacteria

Indicator bacteria (e.g., *E. coli*, total coliform, fecal coliform, and *Enterococcus*) are monitored to indicate the likelihood of pathogens in surface waters. The Los Angeles Water Board's Basin Plan establishes water quality objectives for indicator bacteria to protect water contact recreation (REC-1) and non-contact water recreation (REC-2) beneficial uses. Permittees have monitored bacteria to implement bacteria TMDLs in the Los Angeles Region and to implement beach water quality monitoring requirements under Health and Safety Code sections 115880, 115885, and 115915.

a. Wet Weather Bacteria Monitoring

The tables below summarize wet weather bacteria monitoring at receiving water and outfall monitoring stations. Data from 2012 to 2017 was analyzed for Los Angeles County. Data from 2009 through 2017 was analyzed for Ventura County. Indicator bacteria consistently exceeded water quality objectives at receiving water monitoring stations. In several watersheds, the frequency of samples exceeding objectives was more than 50%. Outfalls have also consistently exceeded applicable *E. coli* effluent limitations. In some watersheds, all outfalls samples exceeded effluent limitations.

Table F-6. Summary of Wet Weather Bacteria Monitoring at Receiving Water Stations

Watershed	TMDL	# of Stations	# of Exceedances	# of Samples	% Exceed
Ballona Creek	Ballona Creek Bacteria TMDL	8	155	203	76%
Dominguez Channel	Los Angeles Harbor Bacteria TMDL	3	164	385	43%
Los Angeles River	Los Angeles River Bacteria TMDL	7	26	45	58%
Los Angeles River	Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL	12	175	330	53%
Malibu Creek	Malibu Creek and Lagoon Bacteria TMDL	14	127	198	64%
Marina del Rey	Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL	13	367	733	50%
Misc. Ventura Coastal Watersheds	Harbor Beaches of Ventura County Bacteria TMDL	2	43	135	32%
San Gabriel River	San Gabriel River Bacteria TMDL	10	48	51	94%
Santa Clara River	Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL	4	30	37	81%
Santa Monica Bay	Santa Monica Bay Beaches Bacteria TMDL	68	1174	3770	31%
Alamitos Bay	(non-TMDL areas)	4	82	149	55%
Calleguas Creek	(non-TMDL areas)	1	21	22	95%
Colorado Lagoon	(non-TMDL areas)	2	27	70	39%
Dominguez Channel	(non-TMDL areas)	2	19	19	100%
Los Cerritos Channel	(non-TMDL areas)	3	18	18	100%
Ventura River	(non-TMDL areas)	1	23	26	88%

Table F-7. Summary of Wet Weather Bacteria Monitoring at Outfall Stations

Watershed	TMDL	# of Stations	# of Exceedances	# of Samples	% Exceed
Ballona Creek	Ballona Creek Bacteria TMDL	2	9	9	100%
Los Angeles River	Los Angeles River Bacteria TMDL	12	17	37	46%
Malibu Creek	Malibu Creek and Lagoon Bacteria TMDL	3	6	6	100%
Marina del Rey	Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL	1	3	3	100%
San Gabriel River	San Gabriel River Bacteria TMDL	12	53	58	91%
Santa Clara River	Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL	11	91	103	88%
Alamitos Bay	(non-TMDL areas)	1	3	3	100%
Dominguez Channel	(non-TMDL areas)	4	9	9	100%
Los Cerritos Channel	(non-TMDL areas)	1	3	3	100%

b. Dry Weather Bacteria Monitoring

The tables below summarize dry weather bacteria monitoring at receiving water and outfall monitoring stations. Data from 2012 to 2017 was analyzed for Los Angeles County. Data from 2009 through 2017 was analyzed for Ventura County. Compared to wet weather, there were fewer exceedances of water quality objectives at receiving water stations. Outfalls consistently exceeded applicable *E. coli* effluent limitations.

Table F-8. Summary of Dry Weather Bacteria Monitoring at Receiving Water Stations

Watershed	Associated TMDL	Weather Condition	# of Stations	# of Exceedances	# of Samples	% Exceed
Ballona Creek	Ballona Creek Bacteria TMDL	Dry	8	950	1763	54%
Dominguez Channel	Los Angeles Harbor Bacteria TMDL	Dry (Winter)	3	159	899	18%
Dominguez Channel	Los Angeles Harbor Bacteria TMDL	Dry (Summer)	3	269	1618	17%
Los Angeles River	Los Angeles River Bacteria TMDL	Dry	25	293	513	57%

Watershed	Associated TMDL	Weather Condition	# of Stations	# of Exceedances	# of Samples	% Exceed
Los Angeles River	Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL	Dry (Winter)	12	59	796	7%
Los Angeles River	Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL	Dry (Summer)	12	170	1507	11%
Malibu Creek	Malibu Creek and Lagoon Bacteria TMDL	Dry	15	346	1447	24%
Marina del Rey	Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL	Dry (Winter)	13	353	1479	24%
Marina del Rey	Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL	Dry (Summer)	13	338	2722	12%
Misc. Ventura Coastal Watersheds	Harbor Beaches of Ventura County Bacteria TMDL	Dry (Winter)	2	21	219	10%
Misc. Ventura Coastal Watersheds	Harbor Beaches of Ventura County Bacteria TMDL	Dry (Summer)	2	26	469	6%
San Gabriel River	San Gabriel River Bacteria TMDL	Dry	10	17	38	45%
Santa Clara River	Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL	Dry	3	0	15	0%
Santa Monica Bay	Santa Monica Bay Beaches Bacteria TMDL	Dry (Winter)	68	938	7839	12%
Santa Monica Bay	Santa Monica Bay Beaches Bacteria TMDL	Dry (Summer)	68	746	14094	5%
Alamitos Bay	(non-TMDL areas)	Dry	4	57	980	6%

Watershed	Associated TMDL	Weather Condition	# of Stations	# of Exceedances	# of Samples	% Exceed
Calleguas Creek	(non-TMDL areas)	Dry	1	1	9	11%
Colorado Lagoon	(non-TMDL areas)	Dry	2	14	475	3%
Dominguez Channel	(non-TMDL areas)	Dry	2	7	12	58%
Los Cerritos Channel	(non-TMDL areas)	Dry	1	2	3	67%
Ventura River	(non-TMDL areas)	Dry	1	1	9	11%

Table F-9. Summary of Dry Weather Bacteria Monitoring at Outfall Stations

Watershed	Associated TMDL	# of Stations	# of Exceedances	# of Samples	% Exceed
Malibu Creek	Malibu Creek and Lagoon Bacteria TMDL	1	1	1	100%
San Gabriel River	San Gabriel River Bacteria TMDL	3	6	17	35%
Santa Clara River	Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL	9	37	60	62%
Los Cerritos Channel	(non-TMDL areas)	1	1	1	100%

3. Metals

Permittees have monitored metals at several receiving water and outfall monitoring stations. This reflects the number of metals TMDLs and metals impairments throughout the Los Angeles Region. Copper, lead, and zinc are the primary metals of concern in the region as concentrations of these metals have exceeded water quality objectives for protection of aquatic life, which are established in the California Toxics Rule (CTR). Zinc and copper have often been identified as "limiting pollutants" in Watershed Management Programs established under the Los Angeles County and City of Long Beach MS4 Permits.

a. Wet Weather Metals Monitoring

The tables below summarize Permittees' wet weather metals monitoring in select watersheds during the previous permit term (2009-2017 in Ventura County and 2012-2017 in Los Angeles County). Copper and/or zinc exceedances were observed at many receiving water stations when monitoring results were compared to CTR acute criteria for both total metals and dissolved metals.

Where outfall monitoring was conducted, many outfalls exceeded applicable effluent limitations for copper and zinc during wet-weather monitoring. Exceedances for these two constituents were observed at outfall stations in Calleguas Creek, Santa Clara River, Los Angeles River, Ballona Creek, San Gabriel River, and Los Cerritos Channel. Lead exceedances were also observed; however, these occurred at a far lower frequency.

Table F-10. Summary of Wet Weather Metals Receiving Water Monitoring Exceeding Criteria by Watershed (Exceedances / Samples)

Parameter	Ballona Creek	Calleguas Creek	Dominguez Channel	Los Angeles River	Los Cerritos Channel	San Gabriel River	Santa Clara River	Ventura River
Cadmium (Total)	--	--	--	3/48	--	--	--	--
Cadmium (Dissolved)	--	--	--	0/42	--	--	--	--
Copper (Total)	104/109	5/24	21/21	64/100	30/30	82/91	17/37	0/26
Copper (Dissolved)	84/109	0/25	--	19/94	30/30	34/91	--	--
Lead (Total)	41/109	0/22	4/21	13/104	16/19	9/91	2/32	0/26
Lead (Dissolved)	0/109	--	--	1/98	6/19	0/91	--	--
Mercury (Total)	--	7/27	--	--	--	--	--	--
Nickel (Total)	--	0/24	--	--	--	--	--	--
Nickel (Dissolved)	--	0/24	--	--	--	--	--	--
Selenium	0/80	--	--	--	--	0/67	--	--
Zinc (Total)	102/109	--	21/21	83/102	19/19	74/93	10/37	0/26
Zinc (Dissolved)	--	0/22	--	20/96	17/19	20/93	--	--

Table F-11. Summary of Wet Weather Metals Outfall Monitoring Exceeding Criteria by Watershed (Exceedances / Samples)

Parameter	Ballona Creek	Calleguas Creek	Dominguez Channel	Los Angeles River	Los Cerritos Channel	San Gabriel River	Santa Clara River	Ventura River
Cadmium (Total)	--	--	--	4/62	--	--	--	--
Copper (Total)	8/9	26/43	0/6	27/65	--	3/7	--	--
Lead (Total)	2/9	--	0/6	1/65	--	0/38	--	--
Mercury (Total)	--	8/26	--	--	--	--	--	--
Nickel (Total)	--	0/43	--	--	--	--	--	--
Selenium	0/2	--	--	--	--	--	--	--
Zinc (Total)	8/9	--	0/6	39/62	--	3/7	--	--

b. Dry Weather Metals Monitoring

The tables below summarize Permittees' dry weather metals monitoring in select watersheds during the previous permit term (2009-2017 in Ventura County and 2012-2017 in Los Angeles County). Compared to wet weather, there were fewer exceedances of dry weather effluent limitations at outfalls and receiving water limitations at receiving water stations. For several constituent and waterbodies, no exceedances were observed.

Table F-12. Summary of Dry Weather Metals Receiving Water Monitoring Exceeding Criteria by Watershed (Exceedances / Samples)

Parameter	Ballona Creek	Calleguas Creek	Dominguez Channel	Los Angeles River	Los Cerritos Channel	San Gabriel River	Santa Clara River	Ventura River
Cadmium (Total)	--	--	--	0/18	--	--	--	--
Cadmium (Dissolved)	--	--	--	0/14	--	--	--	--
Copper (Total)	8/150	0/10	2/10	5/255	4/8	1/34	0/19	0/9
Copper (Dissolved)	1/150	0/10	--	2/251	4/8	0/34	--	--
Lead (Total)	0/150	0/9	0/10	3/164	--	0/31	0/16	0/9
Lead (Dissolved)	0/150	--	--	0/160	--	0/31	--	--
Mercury (Total)	--	0/11	--	--	--	--	--	--
Nickel (Total)	--	0/10	--	--	--	--	--	--
Nickel (Dissolved)	--	0/10	--	--	--	--	--	--
Selenium	0/78	0/10	--	--	--	2/26	--	--
Zinc (Total)	0/150	0/9	0/10	1/225	--	0/35	0/19	0/9
Zinc (Dissolved)	0/150	--	--	0/221	--	0/35	--	--

Table F-13. Summary of Dry Weather Metals Outfall Monitoring Exceeding Criteria by Watershed (Exceedances / Samples)

Parameter	Ballona Creek	Calleguas Creek	Dominguez Channel	Los Angeles River	Los Cerritos Channel	San Gabriel River	Santa Clara River	Ventura River
Cadmium (Total)	--	--	--	--	--	--	--	--
Copper (Total)	1/8	9/17	--	0/2	--	--	--	--
Lead (Total)	0/8	--	--	0/2	--	--	--	--
Mercury (Total)	--	0/9	--	--	--	--	--	--
Nickel (Total)	--	0/15	--	--	--	--	--	--
Selenium	--	0/8	--	--	--	0/4	--	--
Zinc (Total)	0/8	--	--	--	--	--	--	--

4. Nutrients

Permittees have monitored nutrients at several receiving water and outfall monitoring stations in waterbodies with nutrient and nutrient-related impairments. Data from 2012 to 2017 was analyzed for Los Angeles County. Data from 2009 through 2017 was analyzed for Ventura County. Although discharges from municipal wastewater treatment plants (also known as publicly owned treatment works or POTWs) have often been identified as major sources of impairments in some TMDLs, MS4 discharges have been identified as a source of impairment during wet weather and dry weather in several TMDLs. The tables below summarize nutrient monitoring at some select river systems with nutrient TMDLs. Permittees also monitor nutrients in lake systems as there are several lakes in the Los Angeles Region that have nutrient TMDLs.

Table F-14. Summary of Nutrients Receiving Water Monitoring Exceeding Criteria by Watershed (Exceedances / Samples)

Limitation	Calleguas Creek	Los Angeles River	Malibu Creek (Summer)	Malibu Creek (Winter)	Santa Clara River
Ammonia (1 Hr Avg)	0/546	0/57	--	--	1/41
Ammonia (30 Day Avg)	0/511	0/57	--	--	1/35
Nitrate	176/546	1/65	--	--	1/35
Nitrite	1/516	2/57	--	--	--
Nitrate + Nitrite	179/542	5/65	5/13	1/43	--
Total Phosphorus	--	--	12/14	--	--

Table F-15. Summary of Nutrients Outfall Monitoring Exceeding Criteria by Watershed (Exceedances / Samples)

Limitation	Calleguas Creek	Los Angeles River	Malibu Creek (Summer)	Malibu Creek (Winter)	Santa Clara River
Ammonia (1 Hr Avg)	0/108	0/28	--	--	2/38
Ammonia (30 Day Avg)	1/100	0/28	--	--	2/28
Nitrate	0/1	0/21	--	--	--
Nitrite	--	2/21	--	--	--
Nitrate + Nitrite	1/109	1/28	2/2	0/6	0/28
Total Phosphorus	--	--	2/2	--	--

5. Salts

Permittees have monitored for salts at receiving water and outfall monitoring stations in waterbodies with salt impairments. Data from 2012 to 2017 was analyzed for Los Angeles County. Data from 2009 through 2017 was analyzed for Ventura County. The tables below summarize monitoring conducted for the Calleguas Creek Watershed Salts TMDL and Santa Clara River Chloride TMDL.

Both watersheds show continued exceedances of TMDL targets and/or receiving water limitations. The monitoring results for Santa Clara River is separated by the

weather condition at sample collection. Dry weather receiving water and outfall samples exceeded more frequently than wet weather samples. For example, 12 of 19 (63%) dry weather outfall samples exceeded applicable limitations compared to 1 of 60 (2%) wet weather outfall samples.

Table F-16. Summary of Salts Monitoring at Receiving Water Stations

Watershed	Constituent	Weather Condition	# of Stations	# of Exceedances	# of Samples	% Exceed
Calleguas Creek	Boron	--	6	8	34	24%
Calleguas Creek	Chloride	--	6	4	44	9%
Calleguas Creek	Sulfate	--	6	8	36	22%
Calleguas Creek	TDS	--	6	8	44	18%
Santa Clara River	Chloride	Wet	3	9	44	20%
Santa Clara River	Chloride	Dry	3	12	20	60%

Table F-17. Summary of Salts Monitoring at Outfall Stations

Watershed	Constituent	Weather Condition	# of Stations	# of Exceedances	# of Samples	% Exceed
Calleguas Creek	Chloride	--	4	10	24	42%
Calleguas Creek	Sulfate	--	4	1	7	14%
Calleguas Creek	TDS	--	4	7	24	29%
Santa Clara River	Chloride	Wet	8	1	60	2%
Santa Clara River	Chloride	Dry	*	12	19	63%

6. Toxic Pollutants

Toxic pollutants include pesticides, PCBs, PAHs, and metals. Toxic pollutants can bioaccumulate in fish and other aquatic organisms, which is harmful for both the organisms as well as organisms that consume these species (including humans). The Los Angeles Water Board's Basin Plan establishes a narrative water quality objective to address bioaccumulation, which states "Toxic pollutants shall not be present at levels that will bioaccumulate in aquatic life to levels which are harmful to aquatic life or human health." The State Water Board has established Sediment Quality Objectives for enclosed bays and estuaries, which state:

- Pollutants in sediments shall not be present in quantities that, alone or in combination are toxic to benthic communities in bays and estuaries of California;
- Pollutants shall not be present in sediments at levels that will bioaccumulate in aquatic life to levels that are harmful to human health in bays and estuaries of California; and

- Pollutants shall not be present in sediment at levels that alone or in combination are toxic to wildlife and resident finfish by direct exposure or bioaccumulate in aquatic life at levels that are harmful to wildlife or resident finfish by indirect exposure in bays and estuaries of California.

There are several TMDLs addressing impairments due to toxic pollutants in the Los Angeles Region. These TMDLs address impairments in estuaries, harbors, lakes, and other waterbodies where toxic pollutants can accumulate in the sediment. Permittees have been monitoring toxic pollutants in several waterbodies throughout the Los Angeles Region. This monitoring includes sediment monitoring at estuaries, lakes, and bays; stormborne sediment during rain events; and fish tissue monitoring at receiving waters. Data from 2012 to 2017 was analyzed for Los Angeles County. Data from 2009 through 2017 was analyzed for Ventura County. The table below summarizes some of the toxic pollutant monitoring conducted by Permittees. Due to the complexity of toxics TMDLs, which often include interim limitations and the analysis of multiple lines of evidence, it should be noted that the information in the table is a simplification of receiving water conditions.

Table F-18. Summary of Toxic Pollutants Receiving Water Monitoring Exceeding Criteria by Watershed (Exceedances / Samples)

Parameter	Sample Type	Ballona Estuary	Calleguas Creek and Mugu Lagoon	Colorado Lagoon	Dominguez Channel Estuary	Santa Monica Bay
4,4-DDD	Sediment	--	0/66	--	--	--
4,4-DDE	Sediment	--	0/66	--	--	--
4,4-DDT	Sediment	--	1/66	--	--	--
Cadmium	Stormborne Sediment	2/13	--	--	--	--
Chlordane	Fish Tissue	--	--	4/4	--	--
Chlordane	Sediment	--	1/66	10/12	--	--
Chlordane	Stormborne Sediment	14/20	--	--	--	--
Copper	Sediment	--	--	--	3/22	--
Copper	Stormborne Sediment	2/13	--	--	--	--
DDTs	Fish Tissue	--	--	--	4/4	--
DDTs	Sediment	--	--	--	3/22	3/3
DDTs	Stormborne Sediment	14/20	--	11/12	--	--
Dieldrin	Fish Tissue	--	--	2/4	--	--
Dieldrin	Sediment	--	0/66	11/12	--	--
Lead	Sediment	--	--	8/12	3/22	--
Lead	Stormborne Sediment	2/13	--	--	--	--
PAHs	Fish Tissue	--	--	2/4	--	--

Parameter	Sample Type	Ballona Estuary	Calleguas Creek and Mugu Lagoon	Colorado Lagoon	Dominguez Channel Estuary	Santa Monica Bay
PAHs	Sediment	--	--	0/12	1/22	--
PAHs	Stormborne Sediment	5/20	--	--	--	--
PCBs	Fish Tissue	--	--	4/4	--	--
PCBs	Sediment	--	0/66	7/12	2/22	3/3
PCBs	Stormborne Sediment	12/18	--	--	--	--
Silver	Stormborne Sediment	0/13	--	--	--	--
Toxaphene	Sediment	--	0/66	--	--	--
Zinc	Sediment	--	--	8/12	3/22	
Zinc	Stormborne Sediment	2/13	--	--	--	--

F. History of the Previous Permits

Prior to the issuance of the Order, the Los Angeles Water Board issued Permittees in Ventura County, Permittees within the coastal watersheds of Los Angeles County (with the exception of the City of Long Beach), and the City of Long Beach their own respective Phase I MS4 Permits.

Ventura County MS4 Permit

The first MS4 Permit for Ventura County and the incorporated areas therein was Order No. 94-082, issued by the Los Angeles Water Board on August 22, 1994. Between 1994 and 2010, several iterations of this permit were issued. Order No. 94-082 was superseded by Order No. 00-108, issued by the Los Angeles Water Board on July 27, 2000. On May 7, 2009, the Los Angeles Water Board issued Order No. 09-0057, which superseded Order No. 00-108. On July 8, 2010, the Los Angeles Water Board issued Order No. R4-2010-0108, which superseded Order No. 09-0057, to address perceived procedural issues raised by the Building Industry Legal Defense Foundation and others in a petition to the State Water Board.

Prior to the issuance of the Order, Order No. R4-2010-0108 served as the NPDES permit for MS4 stormwater and non-stormwater discharges within the watersheds of Ventura County. The requirements of Order No. R4-2010-0108 applied to the Ventura County Watershed Protection District, County of Ventura, and the cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buenaventura (Ventura), Santa Paula, Simi Valley, and Thousand Oaks.

Working together under the Ventura County MS4 Permit, the VCWPD joined together with the County of Ventura and 10 incorporated cities to form the Ventura Countywide Stormwater Quality Management Program. VCWPD was designated as the Principal Permittee. The Principal Permittee coordinated and facilitated activities necessary to comply with the requirements of Order No. R4-2010-0108 but was not responsible for ensuring compliance of any of the other Permittees. As noted earlier, the designation of

a Principal Permittee has not been carried over from Order No. R4-2010-0108 to the Order.

Los Angeles County MS4 Permit

The first MS4 permit for Los Angeles County and the incorporated areas therein was Order No. 90-079, issued by the Los Angeles Water Board on June 18, 1990. Order No. 96-054 was issued by the Los Angeles Water Board on July 15, 1996, which superseded Order No. 90-079. Order No. 96-054 was superseded by Order No. 01-182, which was issued by the Los Angeles Water Board on December 13, 2001. Order No. 01-182 was amended on September 14, 2006 by Order No. R4-2006-0074, on August 9, 2007 by Order No. R4-2007-0042, on December 10, 2009 by Order No. R4-2009-0130, and on October 19, 2010 and April 14, 2011 pursuant to a peremptory writ of mandate in Los Angeles County Superior Court Case No. BS122724. As discussed below, Order No. 01-182 did not regulate MS4 discharges originating from the City of Long Beach.

On November 8, 2012, the Los Angeles Water Board issued Order No. R4-2012-0175, which superseded Order No. 01-182, as amended. Thereafter, several Los Angeles County MS4 Permittees and environmental organizations filed 37 petitions with the State Water Board challenging various provisions of Order No. R4-2012-0175. On June 16, 2015, the State Water Board adopted Order WQ 2015-0075, which generally upheld Order No. R4-2012-0175 but with a number of revisions to the findings and provisions. Two cities and two environmental organizations subsequently filed three lawsuits (petitions for writ of mandate) against the Los Angeles Water Board and State Water Board challenging various aspects of Los Angeles Water Board Order No. R4-2012-0175 and State Water Board Order WQ 2015-0075. These lawsuits have the following brief background and status:

- Natural Resources Defense Council (NRDC) and Los Angeles Waterkeeper's primary contention is that allowing permittees to implement approved watershed management programs (WMPs) in lieu of strictly complying with receiving water limitations violates federal NPDES anti-backsliding requirements and state and federal anti-degradation requirements. In January 2017, the Los Angeles County Superior Court denied the petition for writ of mandate and upheld Order No. R4-2012-0175. Upon appeal by NRDC and Los Angeles Waterkeeper, on December 24, 2018, the Second District Court of Appeal issued an unpublished, mixed decision.[12] On the anti-backsliding claim, the Court of Appeal affirmed the conclusions of the State Water Board and the trial court that the anti-backsliding provisions did not apply when the 2012 permit authorized WMPs as an alternative means of compliance with receiving water limitations. As for the anti-degradation claim, the Court of Appeal reversed and remanded the trial court's anti-degradation ruling on procedural grounds. The Court of Appeal held that the trial court applied the wrong standard of review, but did affirm that a simple anti-degradation analysis applied to the permit. On remand, the Superior Court ruled that the Water Boards' anti-degradation analysis in Order No. R4-2012-0175 pertaining to high quality waters only was not supported by adequate findings and issued a judgment on April 21, 2021, stating that the court will issue a writ of mandate ordering the Water Boards to set aside Order No. R4-2012-0175. Following issuance of the writ, the Los Angeles Water Board will have 180 days to comply with the court's writ. Alternatively, if the Water Boards file a notice of appeal, they may also file a petition

[12] *Natural Res. Defense Council Inc. et al. v. State Water Res. Control Board et al.* (Dec. 24, 2018) Cal. Court of Appeal, Second Appellate District, Div. Five, Case No. B282016 [nonpub. opn.].

for writ of supersedeas with the Court of Appeal to seek to keep the 2012 permit in effect pending appeal. Unless and until the Los Angeles Water Board supersedes the 2012 permit through issuance of this Order or otherwise acts to set aside the 2012 permit, the 2012 permit remains in effect.[13]

- In two separate but related cases, the cities of Duarte and Gardena challenged various aspects of Order No. R4-2012-0175, including alleging that the Los Angeles Water Board failed to properly consider economic considerations under Water Code section 13241 before imposing numeric effluent limitations (NELs). In September 2019, the Orange County Superior Court issued writs of mandate in both cases requiring the Los Angeles Water Board to set aside all NELs in the 2012 permit and to reconsider the permit in light of the court's ruling. The court ruled that the Water Boards were required to consider costs under Water Code section 13241, as it had determined that incorporation of NELs in the 2012 permit exceeded federal Clean Water Act requirements, and that the Water Boards failed to adequately do so. The court declined to address the cities' other contentions as it found the NEL issue dispositive. The Water Boards disagreed with the court's ruling and appealed the decision. On January 28, 2021, the Court of Appeal issued a unanimous, published decision in the *City of Duarte* case and a companion unpublished decision in the *City of Gardena* case reversing the trial court's rulings in both cases. The Court of Appeal did not decide whether NELs were more stringent than required by federal law. Assuming without deciding that they were more stringent and required considering of the Water Code section 13241 factors, the Court of Appeal concluded that "The Regional Board developed an economic analysis of the Permit's requirements, consistent with Water Code section 13241." (*City of Duarte v. State Water Resources Control Board et al.* (2021) 60 Cal.App.5th 258, *as modified on denial of rehearing* (Feb. 19, 2021); *City of Gardena v. State Water Resources Control Board et al.* (2021) Cal. Court of Appeal, Fourth Appellate Dist., Div. Three, Case No. G058540, *as modified on denial of rehearing* (Feb 19, 2021) [nonpub. opn.].) On April 28, 2021, the California Supreme Court denied the cities' Petitions for Review, leaving the appellate court's rulings in place. The Court of Appeal has directed the trial court to deny the cities' petitions for writ of mandate and to enter judgments in favor of the Water Boards.

The Los Angeles Water Board further amended Order No. R4-2012-0175 on September 8, 2016 (Order No. R4-2012-0175-A01) incorporating provisions consistent with the revised Ballona Creek Watershed Trash TMDL and the revised Los Angeles River Watershed Trash TMDL. Additionally, on July 9, 2018, the Los Angeles Water Board Executive Officer modified Table E-2 of Attachment E (Monitoring and Reporting Program) to Order No. R4-2012-0175 to remove fecal coliform from the freshwater monitoring requirements.

Prior to the issuance of the Order, Order No. R4-2012-0175, as amended, served as the NPDES permit for MS4 stormwater and non-stormwater discharges within the coastal watersheds of Los Angeles County. The requirements of Order No. R4-2012-0175 applied to the Los Angeles County Flood Control District, the unincorporated areas of Los Angeles County under Los Angeles County's jurisdiction, and 84 cities within the coastal watersheds of Los Angeles County except for the City of Long Beach.

[13] *Natural Res. Defense Council, Inc. et al. v. State Wat. Res. Control Bd. et al.*, Los Angeles County Superior Court, Case No. BS156962 (March 29, 2021). Judge Beckloff's ruling did not change the Court of Appeals' anti-backsliding analysis.

City of Long Beach MS4 Permit

The Los Angeles Water Board regulated discharges from the City of Long Beach's MS4 from 1990 through 1999 under the Los Angeles countywide MS4 requirements contained in Order No. 90-079 and Order No. 96-054 issued on June 18, 1990 and July 15, 1996, respectively.

In 1999, the Los Angeles Water Board issued a separate MS4 Permit, Order No. 99-060, to the City of Long Beach for discharges originating from its MS4. Order No. 99-060 was superseded by Order No. R4-2014-0024, which was issued by the Los Angeles Water Board on February 6, 2014. The Los Angeles Water Board amended Order No. R4-2014-0024 on September 8, 2016 (Order No. R4-2014-0024-A01) incorporating provisions consistent with the revised Los Angeles River Watershed Trash TMDL. Additionally, on July 9, 2018, the Los Angeles Water Board Executive Officer modified Table E-2 of Attachment E (Monitoring and Reporting Program) to Order No. R4-2014-0024 to remove fecal coliform from freshwater monitoring requirements.

Order No. R4-2014-0024, as amended, served as the NPDES permit for MS4 stormwater and non-stormwater discharges for the City of Long Beach prior to the issuance of the Order.

Regional MS4 Permit

Except for enforcement purposes, the Order supersedes the previous orders for Permittees in Ventura County, Permittees within the coastal watersheds of Los Angeles County (excepting the City of Long Beach), and the City of Long Beach to cover all Phase I MS4 Permittees within the coastal watersheds of the Los Angeles Region with one regionwide Phase I MS4 Permit (Regional MS4 Permit).

G. Summary of Requirements in Previous Permits

Ventura County

The Ventura County MS4 Permit was last reissued in 2010 as Order No. R4-2010-0108. Order No. R4-2010-0108 expired on July 8, 2015, but was administratively continued pursuant to federal and state regulations. Order No. R4-2010-0108 was organized under the following seven parts and included several attachments. The description below briefly summarizes key permit parts and attachments in Order No. R4-2010-0108.

Part 1 – Discharge Prohibitions

As required by section 402(p)(3)(B)(ii) of the Clean Water Act, Part 1 requires permittees to effectively prohibit non-stormwater discharges into the MS4 and receiving waters, except where such discharges: originate from a State, Federal, or other source for which they are pre-empted from regulating by State or federal law; are covered by a separate NPDES permit or conditional waiver of waste discharge requirements (WDRs) for irrigated lands; are flows from firefighting activities; or fall within one of thirteen categories of flows that are conditionally exempted from the discharge prohibition. These exempted flows fall under certain categories of natural flows and flows incidental to urban activities (i.e., landscape irrigation, sidewalk rinsing). These non-stormwater flows may be exempted so long as they are not a source of pollutants that exceed water quality standards and permittees meet all conditions where specified.

Part 2 – Receiving Water Limitations

Pursuant to State Water Board Order WQ 99-05, Part 2 prohibits discharges from the MS4 that cause or contribute to a violation of water quality standards. In addition, discharges from the MS4 of stormwater or non-stormwater, for which a Permittee is responsible, may not cause or contribute to a condition of nuisance. Part 2.3 requires permittees to comply with receiving water limitations through timely implementation of control measures and other actions to reduce pollutants in the stormwater discharges. If exceedances persist, the Permittee shall ensure compliance with receiving water limitations by following a list of procedures such as submitting a report to the Los Angeles Water Board Executive Officer that describes what additional BMPs are being implemented to address the exceedances. Part 2.4 requires Permittees to annually report the effectiveness of BMPs in reducing exceedances of receiving water limitations.

Part 3 – Stormwater Quality Management Program (SQMP) Implementation

Under Part 3, each Permittee shall, at a minimum, adopt and implement applicable terms of the permit within its jurisdictional boundary. As Principal Permittee, VCWPD shall be responsible for program coordination as described in the permit, as well as compliance with applicable portions of the permit within its jurisdiction. Each Permittee shall also comply with the requirements of 40 CFR section 122.26(d)(2) and implement programs and control measures so as to reduce the discharges of pollutants in stormwater to the maximum extent practicable (MEP) and achieve water quality standards. Part 3 also requires each Permittee to achieve treatment BMP performance standards identified in Attachment C for an 85^{th} percentile 24-hour runoff event.

With regards to TMDLs, Part 3 requires each Permittee to implement programs and measures to comply with TMDL WLAs assigned to MS4 discharges as specified in Part 5. The WLAs are expressed numerically in Part 5 as water quality-based effluent limitations and Permittees are expected to attain the WLAs by implementing BMPs. Additionally, permittees are required to submit an Annual Budget Summary that provides the estimated expenditures to implement the permit for the upcoming report year.

Part 3 also sets forth specific responsibilities of the Principal Permittee and other Permittees such as participation in committee meetings and intra-agency coordination and requirements regarding each Permittee's legal authority.

Part 4 – Special Provisions

Part 4 sets forth provisions for watershed initiative participation, public information and participation program, industrial/commercial facilities control program, planning and land development program, development construction program, public agency activities program, and illicit connections and illicit discharges elimination program. These programs are termed "minimum control measures" and have been in place since the inception of the MS4 NPDES permitting program, as required by federal regulations.

As part of general requirements, Part 4 allows Permittees to propose site-specific Best Management Practice (BMP) Substitution for Los Angeles Water Board Executive Officer approval. Part 4 also sets forth requirements for the Reporting Program in Attachment I.

Part 5 – Total Maximum Daily Load (TMDL) Provisions

As required by 40 CFR section 122.44(d)(1)(vii)(B), the permit incorporated TMDL WLAs, expressed numerically in a manner consistent with the assumptions and requirements of the TMDL from which they were derived. In permit terms, these TMDL WLAs are water quality-based effluent limits. Part 5 requires permittees to comply with applicable WLAs and lists 13 TMDLs applicable to MS4 discharges within Ventura County with the WLAs assigned to MS4 discharges and compliance options.

Part 6 – Definitions

Part 6 includes definitions for terms used within the permit.

Part 7 – Standard Provisions

Part 7 includes standard provisions relating to implementation of the programs required by the permit. Such provisions include, but are not limited to, the duty to comply, the duty to mitigate, inspection and entry requirements, proper operation and maintenance requirements, monitoring and reporting requirements, and the duty to provide information. Most of these provisions are required by 40 CFR sections 122.41 or 122.42 and apply to all NPDES permits.

Attachment A – Watershed Management Areas

Attachment A includes a table that lists the Watershed Management Areas and their respective major surface waterbodies, hydrologic units, Clean Water Act section 303(d) listed pollutants, and permittees.

Attachment B – Pollutants of Concern for Calleguas Creek, Santa Clara River, and Ventura River Watersheds

Attachment B includes pollutants of concern for Calleguas Creek, Santa Clara River, and Ventura River Watershed based on 2003-2007 data from mass emissions stations, receiving water sites, and land use monitoring sites.

Attachment C – Treatment BMP Performance Standards and Effluent Concentrations as Median Values

Attachment C provides treatment BMP performance standards which includes a table of parameters and their respective effluent concentrations for various categories of BMPs.

Attachment D – Critical Sources Categories

Attachment D lists facilities and their Standard Industrial Classification (SIC) codes for critical sources.

Attachment E – Determination of Erosion Potential

Attachment E includes formulas to determine erosion potential.

Attachment F – Monitoring Program

Attachment F has self-monitoring requirements, which include: (1) monitoring of “mass emissions” at three mass emission monitoring stations; (2) monitoring of major outfalls specified in Attachment I; (3) Dry Weather Analytical Monitoring; (4) Aquatic Toxicity Monitoring; (5) Beach Water Quality Monitoring; (6) TMDL Monitoring; (7) Bioassessment; and (8) Special Studies.

Attachment G – Storm Water Monitoring Program's Constituents and Associated Minimum Levels

Attachment G includes a table listing the required stormwater monitoring program constituents and their associated minimum levels.

Attachment H – Storm Water Monitoring Program's Major Outfall Stations

Attachment H includes a table listing the required major outfall monitoring sites and the responsible permittees.

Attachment I – Reporting Program Requirements

Attachment I has reporting requirements where an annual report includes: (1) monitoring of "mass emissions" at three mass emission monitoring stations; (2) monitoring of major outfalls specified in Attachment H; (3) Dry Weather Analytical Monitoring; (4) Aquatic Toxicity Monitoring; (5) Beach Water Quality Monitoring; (6) TMDL Monitoring; (7) Bioassessment; and (8) Special Studies. Permittees are also required to submit an Annual Monitoring Program Report, which answers a set of questions on discharge prohibitions and receiving water limitations. Additionally, Permittees are required to include in their Annual Report answers to a set of questions on the SQMP and special provisions of the Order.

Fact Sheet/Staff Report

The Fact Sheet/Staff Report provides an overview of the Ventura County MS4 Permit and explains the significant factual, legal, methodological, technical, and policy rationale that serve as the basis for the permit requirements.

Los Angeles County

The Los Angeles County MS4 Permit was last reissued in 2012 as Order No. R4-2012-0175 and was amended as described above. Order No. R4-2012-0175 expired on December 28, 2017 but was administratively continued pursuant to federal and state regulations. Order No. R4-2012-0175 is organized under six parts and includes several attachments. The description below summarizes key permit parts and attachments in Order No. R4-2012-0175.

Part III. Discharge Prohibitions

As required by section 402(p)(3)(B)(ii) of the Clean Water Act, Part III requires Permittees to prohibit non-stormwater discharges through the MS4 to receiving waters except for non-stormwater discharges regulated under a separate NPDES permit, temporary non-stormwater discharges authorized by U.S. EPA, authorized non-stormwater discharges from emergency firefighting activities, natural flows, and certain conditionally exempt discharges.

Part IV. Effluent Limitations and Discharge Specifications

Part IV requires each Permittee to comply with technology based effluent limitations by reducing pollutants in stormwater discharges from the MS4 to the maximum extent practicable (MEP). Part IV also requires Permittees to comply with applicable water quality-based effluent limitations (WQBELs) as set forth in Part VI.E of the permit.

Part V. Receiving Water Limitations

Pursuant to State Water Board Order WQ 99-05, Part V prohibits discharges from the MS4 that cause or contribute to a violation of receiving water limitations. In

addition, 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. Part V.3 requires permittees to comply with receiving water limitations through timely implementation of control measures and other actions to reduce pollutants in the discharges. If exceedances persist, the Permittee shall ensure compliance with receiving water limitations by following a list of procedures, such as submitting an Integrated Monitoring Compliance Report to the Los Angeles Water Board Executive Officer that describes what additional BMPs are being implemented to address the exceedances.

Part VI. Provisions

Part VI includes requirements for standard provisions, monitoring and reporting, watershed management programs, stormwater management program minimum control measures (MCMs), and Total Maximum Daily Loads (TMDLs).

Standard provisions include requirements to comply with Attachment D, ensure each Permittee has the necessary legal authority to prohibit non-stormwater discharges through the MS4 to receiving waters, as well as possess adequate legal authority to develop and enforce stormwater and non-stormwater ordinances for its jurisdiction. It also lists responsibilities of Permittees and requires Permittees to conduct a fiscal analysis and report it in their annual report. There are also provisions for public review and Los Angeles Water Board review, permit reopener and modification provisions, and enforcement provisions including enforcement of water quality-based effluent limitations for trash.

The monitoring and reporting provisions require compliance with Attachment E (Monitoring and Reporting Program) and also describe compliance determination for commingled discharges.

The watershed management program provisions in Part VI.C describe a voluntary alternative compliance pathway allowing permittees to individually or collaboratively develop a Watershed Management Program (WMP) or an Enhanced Watershed Management Program (EWMP). The WMP or EWMP allows Permittee(s) the flexibility to customize strategies, control measures, and BMPs to meet the requirements of the permit. Part VI.C describes compliance determination for participation in a WMP or EWMP, timelines for WMP or EWMP development and implementation, requirements to conduct a Reasonable Assurance Analysis (RAA), and provisions for an adaptive management process.

Part VI.D includes general requirements, progressive enforcement and interagency coordination provisions, and six MCMs that are the Public Information and Participation Program (PIPP), Industrial/Commercial Facilities Program, Planning and Land Development Program, Development Construction Program, Public Agency Activities Program, and Illicit Connections and Illicit Discharges Elimination Program (IC/IDE). Part VI.D.4 lists MCM provisions applicable to LACFCD.

Part VI.E includes TMDL provisions including compliance with applicable WQBELs and/or receiving water limitations contained in Attachments L through R, compliance determination for TMDLs, timelines for compliance with U.S. EPA TMDLs, and provisions for compliance with trash TMDLs.

Attachment A – Definitions

Attachment A includes acronyms, abbreviations, and definitions for terms used within the permit.

Attachment B – Watershed Management Area Maps

Attachment B depicts each Watershed Management Area, its subwatersheds, and the major receiving waters.

Attachment C – MS4 Maps by Watershed Management Area

Attachment C depicts the major drainage infrastructure with the area covered under the permit by WMAs.

Attachment D – Standard Provisions

Attachment D includes standard provisions relating to implementation of the programs required by the permit. Such provisions include, but are not limited to, the duty to comply, the duty to mitigate, inspection and entry requirements, proper operation and maintenance requirements, monitoring and reporting requirements, and the duty to provide information. Most of these provisions are required by 40 CFR section 122.41, which applies to all NPDES permits, or section 122.42, which sets forth additional conditions applicable to specified categories of NPDES permits, including MS4 permits.

Attachment E – Monitoring and Reporting Program

Attachment E establishes monitoring, reporting, and recordkeeping requirements. Attachment E allows for an integrated monitoring approach where a Permittee can submit an Integrated Monitoring Program (IMP) or a group of Permittees can coordinate monitoring efforts on a watershed or subwatershed basis to submit a Coordinated Integrated Monitoring Program (CIMP) for Los Angeles Water Board Executive Officer approval. The IMP or CIMP must contain the following elements: (1) receiving water monitoring; (2) stormwater outfall-based monitoring; (3) non-stormwater outfall-based monitoring; (4) new-development/re-development effectiveness tracking; and (5) regional studies. Furthermore, Attachment E specifies monitoring data and annual report submittal timelines and describes key elements to report on.

Attachment F – Fact Sheet

The Fact Sheet provides an overview of the Los Angeles County MS4 Permit and explains the significant factual, legal, methodological, technical, and policy rationale that serve as the basis for the requirements of the permit.

Attachment G – Non-Storm Water Action Levels and Municipal Action Levels

Corresponding to Part III (Discharge Prohibitions) of the permit and non-stormwater outfall monitoring per Attachment E, Attachment G lists non-stormwater action levels for waterbodies. Additionally, Attachment G lists hardness-based action levels for metals. Municipal Action Levels listed in Attachment G apply to stormwater outfall monitoring conducted per Attachment E.

Attachment H – Bioretention/Biofiltration Design Criteria

Corresponding to the Planning and Land Development MCM in the permit, Attachment H describes design specification requirements for bioretention and biofiltration systems.

Attachment I – Developer Technical Information and Guidelines

Attachment I requires Permittees to make available certain reference information and recommended guidelines to the development community. This information may include but is not limited to hydromodification control criteria, low impact development (LID) principles and specifications, and construction BMPs.

Attachment J – Determination of Erosion Potential

Corresponding to the Planning and Land Development MCM in the permit, Attachment J defines erosion potential and provides equations to calculate erosion potential.

Attachment K – Permittees and TMDLs Matrix

Attachment K provides a comprehensive list of TMDLs by Watershed Management Area and the Permittees subject to each TMDL.

Attachment L – TMDL Provisions for the Santa Clara River Watershed Management Area

Attachment L specifies four TMDLs incorporated in the permit with their WQBELs and/or receiving water limitations and compliance options.

Attachment M – TMDL Provisions for Santa Monica Bay Watershed Management Area (including Malibu Creek, Ballona Creek, and Marina del Rey Subwatersheds)

Attachment M specifies 13 TMDLs incorporated in the permit with their WQBELs and/or receiving water limitations and compliance options.

Attachment N – TMDL Provisions for Dominguez Channel and Greater Harbor Waters Watershed Management Area (including Machado Lake Subwatershed)

Attachment N specifies five TMDLs incorporated in the permit with their WQBELs and/or receiving water limitations and compliance options.

Attachment O – TMDL Provisions for Los Angeles River Watershed Management Area

Attachment O specifies seven TMDLs incorporated in the permit with their WQBELs and/or receiving water limitations and compliance options.

Attachment P – TMDL Provisions for the San Gabriel River Watershed Management Area

Attachment P specifies two TMDLs incorporated in the permit with their WQBELs and/or receiving water limitations and compliance options.

Attachment Q – TMDL Provisions for Los Cerritos Channel and Alamitos Bay Watershed Management Area

Attachment Q specifies two TMDLs incorporated in the permit with their WQBELs and/or receiving water limitations and compliance options.

Attachment R – TMDL Provisions for Middle Santa Ana River Watershed Management Area

Attachment R specifies one TMDL incorporated in the permit with its WQBELs and/or receiving water limitations and compliance options.

City of Long Beach

The City of Long Beach MS4 Permit was last reissued in 2014 as Order No. R4-2014-0024 and was amended as described above. Order No. R4-2014-0024 expired on March 28, 2019 but was administratively continued pursuant to federal and state regulations. Order No. R4-2014-0024 is organized under the following eight parts and includes several attachments. The description below summarizes key permit parts and attachments in Order No. R4-2014-0024.

Part III. Discharger Responsibilities

Part III requires the City of Long Beach to comply with provisions in the permit including attachments. It also requires the City of Long Beach to submit complete and timely reports and participate in intra-agency coordination.

Part IV. Discharge Prohibitions

Part IV requires the City of Long Beach to prohibit any discharge of toxic substances from the MS4 into surface waters in concentrations acutely or chronically toxic to animal or plant life. As required by section 402(p)(3)(B)(ii) of the Clean Water Act, Part IV also prohibits non-stormwater discharges through the MS4 to receiving waters except for non-stormwater discharges regulated under an NPDES permit, temporary non-stormwater discharges authorized by U.S. EPA, authorized non-stormwater discharges from emergency firefighting activities, natural flows, and certain conditionally exempt discharges.

Part V. Effluent Limitations and Discharge Specifications

Part V requires the City of Long Beach to comply with technology based effluent limitations by reducing pollutants in stormwater discharges from the MS4 to the maximum extent practicable (MEP). Part V also requires the City of Long Beach to comply with WQBELs as set forth in Part VIII of the permit.

Part VI. Receiving Water Limitations

Pursuant to State Water Board Order WQ 99-05, Part VI prohibits discharges from the MS4 that cause or contribute to a violation of receiving water limitations. In addition, discharges from the MS4 of stormwater or non-stormwater, for which the City of Long Beach is responsible, shall not cause or contribute to a condition of nuisance. Part VI.3 requires the City of Long Beach to comply with receiving water limitations through timely implementation of control measures and other actions to reduce pollutants in the discharges. If exceedances persist, the City of Long Beach shall ensure compliance with receiving water limitations by following a list of procedures such as submitting an Integrated Monitoring Compliance Report to the Los Angeles Water Board Executive Officer that describes what additional BMPs are being implemented to address the exceedances.

Part VII. Provisions

Part VII includes standard provisions, monitoring and reporting requirements, provisions for watershed management programs, and stormwater management program MCMs such as PIPP, Industrial/Commercial Facilities Program, Planning and Land Development Program, Construction Program, Public Agency Activities Program, and IC/IDE Program. Monitoring and reporting provisions require compliance with Attachment E.

Standard provisions include requirements to comply with Attachment D to ensure that the City of Long Beach has the necessary legal authority to prohibit non-stormwater discharges through the MS4, as well as possess adequate legal authority to develop and enforce stormwater and non-stormwater ordinances for its jurisdiction. It also requires the City of Long Beach to conduct a fiscal analysis and discuss it in their annual report. Other provisions include public review and Los Angeles Water Board review provisions, permit reopener and modification provisions, and enforcement provisions including enforcement of trash water quality-based effluent limitations.

The watershed management program provisions in Part VII.C describe a voluntary alternative compliance pathway allowing the City of Long Beach to individually or collaboratively with other MS4 Permittees develop a Watershed Management Program (WMP) or an Enhanced Watershed Management Program (EWMP). The WMP or EWMP allows the City of Long Beach flexibility to customize strategies, control measures, and BMPs to meet the requirements of the permit. It describes compliance determination for participation in a WMP or EWMP, timelines for WMP or EWMP development and implementation, requirements to conduct a Reasonable Assurance Analysis (RAA), and provisions for an adaptive management process.

Part VIII. Total Maximum Daily Loads

Part VIII lists TMDL provisions including compliance determination for TMDLs, timelines for compliance with U.S. EPA TMDLs, and provisions for compliance with trash TMDLs. It also requires the City of Long Beach to comply with applicable WQBELs to implement 9 TMDLs.

Attachment A – Definitions

Attachment A includes acronyms, abbreviations, and definitions for terms used within the permit.

Attachment B – Watershed Management Areas within the City of Long Beach

Attachment B depicts the four WMAs within the City of Long Beach.

Attachment C – City of Long Beach MS4

Attachment C depicts the MS4 within the City of Long Beach.

Attachment D – Standard Provisions

Attachment D includes standard provisions relating to implementation of the programs required by the permit. Such provisions include, but are not limited to, the duty to comply, the duty to mitigate, inspection and entry requirements, proper operation and maintenance requirements, monitoring and reporting requirements, and the duty to provide information. Most of these provisions are required by 40 CFR section 122.41, which applies to all NPDES permits, and section 122.42, which sets forth additional conditions applicable to specified categories of NPDES permits, including MS4 permits.

Attachment F – Fact Sheet

The Fact Sheet provides an overview of the City of Long Beach MS4 Permit and explains the significant factual, legal, methodological, technical, and policy rationale that serve as the basis for the requirements of the permit.

Attachment E – Monitoring and Reporting Program

Attachment E establishes monitoring, reporting, and recordkeeping requirements. Attachment E allows for an integrated monitoring approach where the City of Long Beach can submit an Integrated Monitoring Program (IMP) or the City of Long Beach with other MS4 Permittees can coordinate monitoring efforts on a watershed or subwatershed basis to submit a Coordinated Integrated Monitoring Program (CIMP) for Los Angeles Water Board Executive Officer approval. The IMP or CIMP must contain the following elements: (1) receiving water monitoring; (2) stormwater outfall-based monitoring; (3) non-stormwater outfall-based monitoring; (4) new-development/re-development effectiveness tracking; and (5) regional studies. Furthermore, Attachment E specifies monitoring data and annual report submittal timelines and describes key elements to report on.

Attachment G – Non-Storm Water Action Levels and Municipal Action Levels

Corresponding to Part IV (Discharge Prohibitions) of the permit and non-stormwater outfall monitoring per Attachment E, Attachment G lists non-stormwater action levels for waterbodies. Additionally, Attachment G lists hardness-based action levels for metals. Municipal Action Levels listed in Attachment G apply to stormwater outfall monitoring conducted per Attachment E.

Attachment H – Bioretention / Biofiltration Design Criteria

Corresponding to the Planning and Land Development MCM in the permit, Attachment H describes design specification requirements for bioretention and biofiltration systems.

Attachment I – Developer Technical Information and Guidelines

Attachment I requires the City of Long Beach to make available certain reference information and recommended guidelines to the development community. This information may include but not limited to hydromodification control criteria, LID principles and specifications, and construction BMPs.

Notably, all three previous MS4 permits required outfall and receiving water monitoring for a suite of constituents commonly found in stormwater and non-stormwater discharges and addressed by applicable TMDLs. Therefore, Part II.E of this Fact Sheet summarizes water quality in the Los Angeles Region based on existing monitoring for TMDLs and other categories of pollutants.

H. Permit Applications

1. Ventura County Permittees

On January 9, 2015, 180 days prior to the expiration of Order No. R4-2010-0108, all 12 Ventura County Permittees filed a joint reapplication package also known as a Report of Waste Discharge (ROWD) to apply for renewal of their waste discharge requirements that serve as an NPDES permit to discharge stormwater and authorized and conditionally exempt non-stormwater through their MS4 to surface waters. Specifically, the reapplication package was submitted on behalf of the Ventura Countywide Stormwater Quality Management Program, which consists of the Ventura County Watershed Protection District, the County of Ventura, and the incorporated cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, Ventura, Santa Paula, Simi Valley, and Thousand Oaks.

The Los Angeles Water Board evaluated the Ventura County Permittees' reapplication package and deemed it complete per federal stormwater regulations contained in the U.S. EPA Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems; Final Rule, August 9, 1996 *(61 Fed Reg. 41697)*.

2. Los Angeles County Permittees

By July 3, 2017, 180 days prior to the expiration of Order No. R4-2012-0175 as amended by State Water Board Order WQ 2015-0075 and Los Angeles Water Board Order No. R4-2012-0175-A01, the 86 Los Angeles County Permittees submitted a total of 29 reapplication packages to discharge stormwater and authorized and conditionally exempt non-stormwater through their MS4 to surface waters. Out of the 29 reapplication packages, 19 were submitted by groups of Permittees and 10 were submitted individually.

The Los Angeles Water Board evaluated these 29 reapplication packages and deemed them complete per federal stormwater regulations contained in the U.S. EPA Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems; Final Rule, August 9, 1996 *(61 Fed Reg. 41697)*.

3. City of Long Beach

On October 1, 2018, 180 days prior to the expiration of Order No. R4-2014-0024 as amended by Los Angeles Water Board Order No. R4-2014-0024-A01, the City of Long Beach submitted a reapplication package to discharge stormwater and authorized and conditionally exempt non-stormwater through its MS4 to surface waters.

The Los Angeles Water Board evaluated the City of Long Beach's reapplication package and deemed it complete per federal stormwater regulations contained in the U.S. EPA Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems; Final Rule, August 9, 1996 *(61 Fed Reg. 41697)*.

III. APPLICABLE FEDERAL AND STATE LAWS, REGULATIONS, PLANS, AND POLICIES

The provisions contained in the Order are based on the requirements and authorities described in the Order's Findings and below. These include the federal Clean Water Act and implementing regulations, the California Water Code, and applicable statewide and regional water quality control plans and policies.

A. Municipal Separate Storm Sewer System Requirements

The 1972 Clean Water Act (CWA)[14] established the NPDES Program to regulate the discharge of pollutants from point sources to waters of the United States. However, pollution from stormwater and dry-weather urban runoff was largely unabated for over a decade. In response to the 1987 Amendments to the Clean Water Act, U.S. EPA developed Phase I of the NPDES Storm Water Permitting Program in 1990, which established a framework for regulating municipal, industrial, and construction discharges of stormwater and non-stormwater. The Phase I program addressed sources of stormwater and dry-weather urban runoff that had the greatest potential to

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

negatively impact water quality. In particular, under Phase I U.S. EPA required NPDES permit coverage for discharges from medium and large MS4s with populations of 100,000 or more. Operators of MS4s regulated under the Phase I NPDES Storm Water Program were required to obtain permit coverage for discharges of stormwater and non-stormwater from their MS4s to waters of the United States.

In 1990, pursuant to 40 CFR section 122.26(b)(4), the Los Angeles Water Board designated the MS4s owned and/or operated by the incorporated cities and Ventura County within the watersheds of Ventura County, and by the incorporated cities and Los Angeles County within the coastal watersheds of Los Angeles County as a large MS4 due to the total populations of Los Angeles County and Ventura County and the interconnected nature of the Permittees' MS4s. The total population of the cities and unincorporated areas in Ventura County covered by the Order was approximately 823,318 in 2010 and has increased by approximately 3.3% to 850,967 in 2018 according to the United States Census. The total population of the cities and unincorporated areas in Los Angeles County covered by the Order was approximately 9,505,484 in 2010 and has increased by approximately 2.9% to 9,786,075 in 2018, according to the United States Census.

B. Water Quality Control Plans

The CWA requires the Los Angeles Water Board to establish water quality standards for each water body in its region. Water quality standards include beneficial uses, water quality objectives that are established at levels sufficient to protect those beneficial uses, and an antidegradation policy to prevent degrading high-quality waters unless specific circumstances apply.

1. Water Quality Control Plan - Los Angeles Region

The Los Angeles Water Board's *Water Quality Control Plan - Los Angeles Region* (hereinafter Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Los Angeles Region. Pursuant to CWC Section 13263(a), the requirements of the Order implement the Basin Plan. The beneficial uses applicable to the surface water bodies that receive discharges from the Permittees' MS4 are identified in Chapter 2 of the Basin Plan and generally include Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); Industrial Process Supply (PROC); Ground Water Recharge (GWR); Freshwater Replenishment (FRSH); Navigation (NAV); Hydropower Generation (POW); Water Contact Recreation (REC-1); Limited Contact Recreation (LREC-1); Non-Contact Water Recreation (REC-2); Commercial and Sport Fishing (COMM); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Estuarine Habitat (EST); Preservation of Areas of Special Biological Significance (BIOL); Wildlife Habitat (WILD); Preservation of Rare and Endangered Species (RARE); Marine Habitat (MAR); Wetland Habitat (WET); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); and Shellfish Harvesting (SHELL).

2. Ocean Plan

In 1972, the State Water Board adopted the Water Quality Control Plan for Ocean Waters of California (Ocean Plan). Since the adoption of Order No. R4-2010-0108, Order No. R4-2012-0175, and Order No. R4-2014-0024, the State Water Board adopted various amendments to the Ocean Plan. One of the most recent

amendments that has become effective was adopted on August 7, 2018 to incorporate bacteria provisions and a water quality standards variance policy. OAL approved it on February 4, 2019 and U.S. EPA approved it on March 22, 2019. Additionally, on April 2, 2019, the State Water Board further revised the Ocean Plan through Resolution No. 2019-0015 (incorporating state wetland definition and procedures for discharges of dredged or fill material to waters of the state). OAL approved it on August 28, 2019 and it became effective on May 28, 2020. The Ocean Plan is applicable, in its entirety, to the ocean waters of the State. To protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Pursuant to California Water Code section 13263(a), the requirements of the Order implement the Ocean Plan. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected, which include Industrial Water Supply (IND); Water Contact (REC-1) and Non-Contact Recreation (REC-2), including aesthetic enjoyment; Navigation (NAV); Commercial and Sport Fishing (COMM); Mariculture; Preservation and Enhancement of Designated Areas of Special Biological Significance (ASBS); Rare and Endangered Species (RARE); Marine Habitat (MAR); Fish Migration (MIGR); Fish Spawning (SPWN); and Shellfish Harvesting (SHELL). All MS4 discharges into the Pacific Ocean must protect the existing and designated uses identified in the Ocean Plan and Basin Plan.

3. Inland Surface Waters, Enclosed Bays, and Estuaries Plan (ISWEBE)

Since the adoption of Order No. R4-2010-0108, Order No. R4-2012-0175, and Order No. R4-2014-0024, the State Water Board adopted various provisions, which make up, collectively, the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE) of California. Part 1 Trash Provisions was adopted by the State Water Board on April 7, 2015 through Resolution No. 2015-0019. OAL approved it on December 2, 2015 and U.S. EPA approved it on January 12, 2016. Part 2 Tribal Subsistence Beneficial Uses and Mercury Provisions was adopted by State Board on May 2, 2017 through Resolution No. 2017-0027. OAL approved it on June 28, 2017 and U.S. EPA approved it on July 14, 2017. Part 3 Bacteria Provisions and Variance Policy was adopted by State Board on August 7, 2018 through Resolution No. 2018-0038. OAL approved it on February 4, 2019 and U.S. EPA approved it on March 22, 2019. The State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State was adopted by State Board on April 2, 2019 through Resolution No. 2019-0015. OAL approved it on August 28, 2019 and it became effective on May 28, 2020. The Toxicity Provisions were adopted by the State Water Board on December 1, 2020. The Toxicity Provisions are not yet in effect. The Toxicity Provisions will take effect upon approval by the California Office of Administrative Law for purposes of state law and upon approval by the U.S. Environmental Protection Agency for purposes of federal law. The ISWEBE is applicable to various discharges in the Order.

4. Statewide Trash Provisions

To control trash, the State Water Board on April 7, 2015, adopted an Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) for Trash Provisions and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries. Together, they are collectively referred to as “the Trash Amendments.” The Trash Amendments do the following: (1) establish a narrative water quality objective for trash, (2) establish corresponding applicability, including an exception for those waters within the

jurisdiction of the Los Angeles Water Board for which trash TMDLs are in effect prior to the effective date of the Trash Amendments,[15] (3) establish a prohibition on the discharge of trash, (4) provide implementation requirements for permitted storm water and other discharges, (5) set a time schedule for compliance, and (6) provide a framework for monitoring and reporting requirements. The Los Angeles Water Board is required to implement the new Trash Provisions through NPDES permits issued pursuant to Federal Clean Water Act section 402(p), including MS4 permits. The water quality objective established by the Trash Provisions serves as a water quality standard federally mandated under Clean Water Act section 303(c) and the federal regulations. (33 United States Code section 1312, 40 Code of Federal Regulations section 131.) This water quality standard was specifically approved by U.S. EPA following adoption by the State Water Board and approval by the Office of Administrative Law. Further, the water quality standard expected to be achieved pursuant to the Trash Provisions may allow each waterbody subsequently determined to be impaired by trash to not be placed on the Clean Water Act section 303(d) list, obviating the need for the development of a TMDL for trash for each of those waterbodies. (33 United States Code section 1313(c); 40 Code of Federal Regulations section 130.7.). In those cases, the specific actions that will be carried out by the Permittee substitute for some or all the actions that would otherwise be required consistent with a waste load allocation in a trash TMDL. (40 Code of Federal Regulations section 122.44, subdivision (d)(1)(vii)(B).) The Trash Amendments are applicable to various discharges in the Order and the Order implements the Trash Amendments.

5. Sediment Quality

In 2008, the State Water Board adopted the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality Provisions. It is was most recently amended on June 5, 2018 and became effective on March 11, 2019. This plan supersedes other narrative sediment quality objectives and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries. Requirements of the Order implement sediment quality objectives of this plan.

C. National Toxics Rule (NTR) and California Toxics Rule (CTR)

U.S. EPA adopted the National Toxics Rule (NTR)[16] 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, U.S. EPA adopted the California Toxics Rule (CTR).[17] 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 was most recently amended on November 15, 2018 to withdraw the freshwater criteria for lead applicable to certain waters of California because the State of California adopted, and the U.S. EPA approved a site-specific objective for lead for the Los Angeles River and its tributaries.

[15] The exception includes the following watersheds and waterbodies: Los Angeles River Watershed, Ballona Creek, Malibu Creek Watershed, Santa Monica Bay Nearshore and Offshore, San Gabriel River East Fork, Revolon Slough and Beardsley Wash, Ventura River Estuary, Machado Lake, Lake Elizabeth, Lake Hughes, Munz Lake, Peck Road Park Lake, Echo Park Lake, Lincoln Park Lake and Legg Lake.

[16] 40 CFR § 131.36.

[17] Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, (65 Federal Register 31682-31719 (May 18, 2000)), adding 40 CFR § 131.38.

(*83 Fed. Reg. 52163-52168* (Oct. 16, 2018)). These rules contain federal water quality criteria for priority pollutants. The requirements of the Order are consistent with the NTR (40 CFR section 131.36) and CTR (40 CFR section 131.38).

D. Endangered Species Acts

The 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 (CESA, Fish and Game Code, §§ 2050 to 2089.25) or the federal Endangered Species Act (ESA, 16 U.S.C.A., §§ 1531 to 1544). The requirements of the Order are designed to maintain water quality and prevent a condition of pollution, contamination, or nuisance in waters of the United States. Permittees remain independently responsible for meeting all applicable requirements under CESA and ESA.

E. NPDES Electronic Reporting Rule (e-Rule)

40 Code of Federal Regulations part 127 requires NPDES permittees to electronically report information and also requires authorized states implementing the NPDES program to ensure that the required minimum set of data in part 127, Appendix A, is electronically transferred to U.S. EPA in a "timely, accurate, complete and nationally consistent manner fully compatible with U.S. EPA's national NPDES data system." The rule does not add new reporting requirements on NPDES regulated entities; rather it substitutes paper-based filings with electronic transmission. The State's existing electronic reporting system for stormwater discharges (Stormwater Multiple Application and Report Tracking System (SMARTS)), which is compliant with U.S. EPA's Cross-Media Electronic Reporting Rule (40 Code of Federal Regulations part 3), does not currently accommodate the collection from MS4 dischargers and reporting to U.S. EPA of all applicable Appendix A data in a "nationally consistent manner fully compatible with U.S. EPA's national NPDES data system." Electronic reporting requirements for those data will be implemented when the State develops an approved system. On April 30, 2019, U.S. EPA proposed changes to the NPDES e-Rule, in Appendix A, to update data elements applicable to regulated MS4s to be consistent with existing MS4 regulations. On February 28, 2020, U.S. EPA proposed the "Phase 2 Extension Rule," extending the December 21, 2020 deadline to December 21, 2025 for electronic submittal of annual reports.[18]

F. Monitoring and Reporting

Section 308(a) of the federal CWA, and 40 CFR sections 122.41(h), (j)-(l), 122.41(i), and 122.48, require that all NPDES permits specify monitoring and reporting requirements. Federal regulations applicable to large and medium MS4s also specify additional monitoring and reporting requirements. These monitoring requirements for MS4 discharges are prescriptive and require the permitting agency to include requirements for both stormwater and non-stormwater effluent sampling at representative outfalls, representative receiving water monitoring, sampling of specific pollutants, monitoring at specified intervals (e.g., at least three storm events per year), use of analytical methods specified in 40 CFR Part 136, and use of field collection methods. (40 CFR §§ 122.26(d)(2)(i)(F) & (d)(2)(iii)(D), 122.42(c).) California Water Code Section 13383 authorizes the Los Angeles Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and

[18] 80 Federal Register pp. 64064-64158; 84 Federal Register pp. 18200-182-5; 85 Federal Register pp. 11909-11927.

Reporting Program in the Order requires monitoring, reporting, and recordkeeping requirements that implement the federal and state laws and/or regulations. This Monitoring and Reporting Program is provided in Attachment E of the Order.

G. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in Attachment D of the Order. Permittees must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR section 122.42 provided in Attachment D of the Order. Part VI of the Order also includes various provisions applicable to the Permittees. The rationale for the provisions contained in Part VI of the Order is provided in Part VIII of this Fact Sheet.

H. Antidegradation Policy

Federal regulations at 40 CFR section 131.12 require that state water quality standards include an antidegradation policy consistent with federal requirements. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Where the federal antidegradation policy is applicable, the State Water Board has interpreted Resolution No. 68-16 to incorporate the federal antidegradation policy.[19] The Los Angeles Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16. Resolution No. 68-16 and 40 CFR section 131.12 require that high quality waters be maintained unless degradation is justified based on specific findings. The Los Angeles Water Board finds that the permitted discharges authorized by this Order are consistent with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16, as set forth herein.

In the context of the Order, a federal NPDES permit, compliance with the federal antidegradation policy requires consideration of the following. First, the Los Angeles Water Board must ensure that "existing instream uses and the level of water quality necessary to protect the existing uses" are maintained and protected.[20] Second, if the baseline quality of a waterbody for a given constituent "exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected" through the requirements of the Order unless the Los Angeles Water Board makes findings that: (1) any lowering of the water quality is "necessary to accommodate important economic or social development in the area in which the waters are located"; (2) "water quality adequate to protect existing uses fully" is assured; and (3) "the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control" are achieved.[21] Under this second tier review, the Board may identify the waters for protection through the public process of a permitting action, as it is here. Before allowing any lowering of high quality water, the Board must

[19] State Water Board Order WQ 86-17 *(Fay)*, pp. 16-19.

[20] 40 CFR § 131.12(a)(1). This provision has been interpreted to mean that, "[i]f baseline water quality is equal to or less than the quality as defined by the water quality objective, water quality shall be maintained or improved to a level that achieves the objectives." (State Water Board, Administrative Procedures Update, Antidegradation Policy Implementation for NPDES Permitting, 90-004 (APU 90-004), p. 4.)

[21] 40 CFR § 131.12(a)(2).

conduct an analysis of alternatives that evaluates practicable alternatives that would prevent or lessen the degradation associated with the discharges permitted. In the context of 40 CFR § 131.12(a)(2)(ii), practicable means "technologically possible, able to be put into practice, and economically viable."[22]

The Order must also comply with any requirements of State Water Board Resolution No. 68-16 beyond those imposed through incorporation of the federal antidegradation policy.[23] Resolution No. 68-16 requires findings that any lowering of water quality is "consistent with the maximum benefit to the people of the State" and "will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies" and further that the discharge is subject to "waste discharge requirements which will result in the best practicable treatment or control of the discharge."[24] The baseline quality considered in making the appropriate findings is the best quality of the water since 1968, the year of adoption of Resolution No. 68-16, or a lower level if that lower level was allowed through a permitting or other regulatory action, such as establishing a water quality objective, that was consistent with the federal and state antidegradation policies.[25] The following analysis assumes, without deciding, that the baseline for antidegradation analysis is 1968.[26]

[22] 40 CFR § 131.3(n).

[23] See State Water Board Order WQ 86-17 (*Fay)*, p. 23, fn. 11.

[24] State Water Board Resolution No. 68-16, Resolve 2. Best practicable treatment or control is not defined in Resolution No. 68-16; however, the State Water Board has evaluated what level of treatment or control is technically achievable using "best efforts." (See State Water Board Orders WQ 81-5 (*City of Lompoc*), WQ 82-5 (*Chino Basin Municipal Water District)*, WQ 90-6 (*Environmental Resources Protection Council*).) A Questions and Answers document on Resolution No. 68-16 by the State Water Board states as follows: "To evaluate the best practicable treatment or control method, the discharger should compare the proposed method to existing proven technology; evaluate performance data, e.g. through treatability studies; compare alternative methods of treatment or control; and/or consider the method currently used by the discharger or similarly situated dischargers . . .The costs of the treatment or control should also be considered . . . ." (Questions and Answers, Resolution No. 68-16, State Water Board (Feb. 16, 1995), pp. 5-6.)

[25] APU 90-004, p.4. The baseline for application of the federal antidegradation policy is 1975, which is the date used in 40 CFR § 131.3(e) to define existing uses of a waterbody. For state antidegradation requirements, see also *Asociacion de Gente Unida por el Agua (AGUA) v. Central Valley Water Board* (2012) 210 Cal.App.4th 1255,1270. The baseline for the application of the state antidegradation policy is generally the highest water quality achieved since 1968, the year the policy was adopted.

[26] The baseline may be later than 1968 for two reasons. First, the appropriate baseline is determined by the date on which a policy establishing the level of water quality to protect was effective. (Resolution 68-16, Resolve 1.) The Region's Basin Plan has been updated and amended several times since 1971, when it was first adopted, to include new or revised water quality objectives. Second, a permitting action with appropriate antidegradation findings allowing degradation may establish a new baseline consistent with the level of water quality achieved under that permit. The Los Angeles Water Board has regulated the Permittees' MS4 discharges in the past through permits issued in 1990, 1996, 2001, and 2012 for Los Angeles County; 1999 and 2014 for City of Long Beach; and 1994, 2000, 2009, and 2010 for Ventura County. APU 90-004 acknowledges that no antidegradation analysis is required where the regional water board has no expectation that water quality will be reduced by the permitting action; here, if the water quality achieved under the prior permits had been used as the baseline, arguably, no antidegradation analysis would have been required. (APU 90-004, p. 2.) Nevertheless, this is a new regional permit for Permittees in *both* Los Angeles and Ventura Counties, and for ease of analysis, 1968 is used herein as the baseline.

The Board Is Not Required to Make Waterbody by Waterbody and Pollutant by Pollutant Antidegradation Findings:

The Los Angeles Water Board finds that it is not required to conduct a waterbody by waterbody and pollutant by pollutant antidegradation analysis for this Order. The Los Angeles Water Board makes this finding for two reasons. First, the Administrative Procedures Update, Antidegradation Policy Implementation for NPDES Permitting, 90-004 (APU 90-004), which specifies a waterbody by waterbody and pollutant by pollutant analysis for some permitting actions, does not address permitting for diffuse MS4 discharges. Second, APU 90-004 itself indicates that a waterbody by waterbody and pollutant by pollutant analysis is only required when conducting a "complete" antidegradation analysis; a complete analysis, in turn, is not required where any reduction in water quality is temporally limited and would not result in any long-term deleterious effects on water quality."[27] Here, the Order requires compliance with the non-stormwater discharge prohibition, Receiving Water Limitations and Numeric Effluent Limitations derived from TMDLs designed to bring MS4 discharges and receiving waters into compliance with water quality objectives. The discussion below elaborates on these two reasons.

APU 90-004 is a State Water Board internal guidance document establishing methods for implementing the federal and state antidegradation policies in NPDES permits. APU 90-004 suggests that an antidegradation analysis requires a pollutant by pollutant and waterbody by waterbody analysis in certain contexts, specifically where the discharge at issue is a discrete discharge from a singular facility. However, APU 90-004 has limited value when considering antidegradation in the context of MS4 discharges from diffuse sources, conveyed through multiple outfalls, with multiple pollutants impacting multiple water bodies within region. [28] This interpretation is sensible for this Order, given that reliable data on the baseline water quality is not readily available since 1968 for a region that spans 4,447 square miles and includes 120 miles of coastline, 18,839 acres of lakes, and 1,704 miles of rivers and streams. The Los Angeles Water Board estimates that, there are over 850,000 combinations of waterbodies and pollutants that could potentially require individual consideration in the Region.[29] The antidegradation analysis for this Order instead relies on a general assessment of the existing water quality data that is reasonably available to the Los Angeles Water Board and makes findings regarding the social and economic benefits and costs of permitting stormwater and non-stormwater MS4 discharges in accordance with the Order terms.

The Los Angeles Water Board additionally finds that, even if APU 90-004 applies to the issuance of this Order, it requires at most a "simple" antidegradation analysis. APU 90-

[27] APU 90-004, p. 2.

[28] The State Water Board held so in Order WQ 2015-0075. In *Natural Resources Defense Council v. State Water Resources Control Board*, the superior court did not invalidate this particular conclusion. (Super. Ct. Los Angeles County, No. BS156962, Order, March 29, 2021). The State Water Board's interpretation of its own guidance is entitled to deference. See also State Water Board Order WQ 2018-0002, p. 77 (reaching the same conclusion for agricultural discharges).

[29] See, https://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/; the tributary table MasterTribTable.xls (ca.gov); and the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan), Ch. 2, Tables 2-1 through 2-4a and Beneficial Uses Figures; and Chapter 3. The number could easily be higher if the Los Angeles Water Board incorporated CEDEN data and other information to determine the exact number of waterbodies and waterbody pollutant combinations. If it could be done at all, a pollutant by pollutant, waterbody by waterbody antidegradation analysis would be extremely time consuming and take years to complete.

004 contemplates that a "simple" antidegradation analysis is appropriate under specified circumstances. In particular, as stated above, APU 90-004 states that a simple antidegradation analysis is allowed when a "Regional Board determines the reduction in water quality is temporally limited and will not result in any long-term deleterious effects on water quality" or where a "Regional Board determines the proposed action will produce minor effects which will not result in a significant reduction of water quality."[30] Here, the Order continues the requirements of the previous permits or imposes equivalent or more protective requirements such that the water quality established under the prior permits is expected to be maintained and improved. Generally, the prior permits instituted controls such as a prohibition on non-stormwater discharges that are a source of pollutants through the MS4s, receiving water limitations, WQBELs based on TMDLs, and monitoring programs to help ensure that water quality will be maintained at the level it is now, or improve it, and this new Order institutes further controls such as additional TMDL-based WQBELs and receiving water limitations. Therefore, any degradation permitted while controls are continuing to be developed will be temporally limited and will not result in any long-term deleterious effects on water quality.[31] Such a finding would not be appropriate if, for example, the Order declined to require long-term compliance with water quality objectives, but that is not the case here.

APU 90-004 does not provide guidance on the scope and content of a simple antidegradation analysis. Nor does it define the terms "temporally limited" or "long term." Those terms must therefore be interpreted in the context of the types of discharges being permitted and with deference to the best professional judgment of the Los Angeles Water Board.[32] The Los Angeles Water Board determines that the findings made below

[30] APU 90-004, p. 2. In an unpublished decision, the Second District Court of Appeal affirmed that a simple antidegradation analysis applied to the 2012 Los Angeles County MS4 permit. (*Natural Resources Defense Council v. State Water Resources Control Board* (2018) 2018 WL 6735201, at *6).

[31] See, Order, Part IX.A.4.b, k; B.8; E; G.3

[32] During the hearing to consider adoption of this Order on July 16, 2021, NRDC, Heal the Bay, and Los Angeles Waterkeeper (together, the "Environmental Groups") asserted that if the Los Angeles Water Board adopted the Order with the alternative compliance path outlined in Part X.B.1.b of the Order (referred to in the antidegradation analysis, *infra*, as "Alternative 5,"), then a simple antidegradation analysis is not appropriate. They asserted that a complete antidegradation analysis is necessary because, since the WMPs were first approved (2015), there is no evidence that there has been any significant improvement in water quality. The Los Angeles Water Board disagrees and finds that water quality effects during a period of multiple years, spanning more than one permit term, are still "temporally limited" and not "long term" in the context of the regulation of MS4 discharges.

MS4 discharges are fundamentally different from those specifically discussed in the APU, such as discharges from discrete point sources like publicly owned treatment works, or POTWs. MS4 discharges are diffuse discharges conveyed through multiple outfalls, with multiple pollutants impacting multiple water bodies within the region. To effectively control and abate pollution to surface waters from MS4 discharges, permittees testified during the hearing on this Order that they need time to plan and implement solutions that are projected to bring impaired waters into attainment. This kind of pollution control and abatement would take time even if WMPs with deemed in compliance provisions were not part of the proposed solutions. The Board, and permittees, understand and expect that more than one permit term may be necessary to adequately plan and construct BMPs or implement other solutions to ensure that impaired waters will be restored.

Furthermore, it is not surprising that, after only one permit term, water quality data do not show marked improvement, because as many permittees testified, the first generation of projects in approved WMPs are only being completed just now. For example, Paul Alva, Principal Engineer at the Los Angeles County

meet the requirements of a simple antidegradation analysis and are also consistent with an antidegradation analysis done at a generalized level, as appropriate for this Order. With these findings, based on the information available to it and using its best professional judgment, the Los Angeles Water Board concludes that the discharge will not be adverse to the intent and purpose of the State and federal antidegradation policies. Regardless of APU 90-004's application, however, the below analysis is consistent with the generalized antidegradation analysis appropriate for this Order and complies with both the federal antidegradation regulations, and with the State antidegradation policy.

The Los Angeles Water Board Makes the Following Antidegradation Findings:

The discharges permitted in the Order are consistent with the antidegradation provisions of 40 CFR section 131.12 and Resolution No. 68-16. The Los Angeles Water Board's conclusion that the terms and conditions of the Order are consistent with the antidegradation policies is based on the following analysis.

1. Water bodies that do not meet water quality objectives (water bodies that are not high quality):

Most of the receiving waters within the area covered by the Order are not meeting water quality objectives for multiple pollutants associated with MS4s, meaning that they are not attaining water quality objectives necessary to protect beneficial uses.[33] This is evidenced in part by the fact that many of these waterbodies are listed on the State's Clean Water Act section 303(d) List of impaired waters and, additionally, either the Los Angeles Water Board or the U.S. EPA has established numerous TMDLs to address many of the impairments.[34] The source assessment for these TMDLs identify MS4 discharges as a source of the impairments. Under both federal and state antidegradation policies, these receiving waters are not considered "high quality" waters for these pollutants. To the extent that data are

Department of Public Works, testified on July 16, 2021 that multi-benefit WMP projects such as Magic Johnson Park, Ladera Park, Carriage Crest Park, and Gates Park have either just been completed or will be completed soon. Once those projects are fully operational, and once other, similar projects are built, the Board expects to see measurable improvements in receiving water quality. Indeed, the evidence already indicates WMPs with deemed in compliance are achieving results. As illustrated in Mr. Alva's presentation to the Board on July 16, 2021, the landscape of water quality has and will continue to vastly improve all over the County, and not just in certain communities, due to WMP construction and implementation.

In summary, the time to plan, construct, and see results from the projects built is a temporal limitation that is as short as practicable and it is appropriate given the nature of the discharges at issue. This is especially true since most of the deemed in compliance provisions have an end point and will expire. (See Order, Part X.B.)

[33] This is certainly true of the receiving waters in the more urbanized watersheds throughout the Region during wet weather. See, staff presentations at MS4 Workshops regarding monitoring data, dated 9/13/2018 (Ventura County data); and 7/12/2018 and 5/10/2018 (Los Angeles County data).

[34] It should be noted that impaired waters, or waters that are not high quality, are not confined to those listed only on the 303(d) List. There are several reasons for this, including (but not limited to) the fact that the most recent 303(d) List for the Los Angeles Region is based on available data through August 2010. Accordingly, the 303(d) List itself does not reflect all of the waterbodies in the Region that are impaired or fail to meet water quality standards.

available from 1968, there were few high quality receiving waters in the more urbanized watersheds in the Los Angeles Region even at that time.[35]

For receiving waters that are not high quality waters, the federal antidegradation policy requires that regulatory actions ensure that existing instream uses and the level of water quality necessary to protect the existing uses is maintained and protected. (40 CFR § 131.12(a)(1).) The Order ensures that existing instream (beneficial) uses and the level of water quality necessary to protect the existing uses is maintained and protected through requirements to not cause or contribute to exceedances of water quality objectives in the receiving water and to restore impaired water bodies.[36] This is achieved through the following provisions:

a. The Order requires compliance with receiving water limitations to meet water quality standards in the receiving water either by demonstrating compliance pursuant to Part V of the Order and the Permittee's monitoring and reporting program pursuant to Part VII of the Order or by implementing an approved Watershed Management Program (WMP) pursuant to Part IX of the Order. Watershed Management Programs must specify structural and non-structural stormwater and non-stormwater controls that are demonstrated to have a reasonable assurance of achieving compliance with receiving water limitations and that must be implemented in accordance with an approved compliance schedule. The reasonable assurance analysis, or RAA, is

[35] See e.g., Water Resources Control Board, State of California, Toxic Substances Monitoring Program, Ten Year Summary Report 1978-1987 (August 1990) (Administrative Record, Order No. 01-082, R0044666 - 44669); The Santa Monica Bay Restoration Project, An Assessment of Inputs of Fecal Indicator Organisms and Human Enteric Viruses from Two Santa Monica Storm Drains (June 1990) (Administrative Record, Order No. 01-082, R0047130 - 47174); Santa Monica Bay Restoration Project, Pathogens and Indicators in Storm Drains Within the Santa Monica Bay Watershed (June 1992) (Administrative Record, Order No. 01-082, R0047688 - 47748); Santa Monica Bay Restoration Project, Storm Drains as a Source of Surf Zone Bacterial Indicators and Human Enteric Viruses to Santa Monica Bay (August 1991) (Administrative Record, Order No. 01-082, R004779 - 47780); James M. Danza, Water Quality and Beneficial Use Investigation of the Los Angeles River: Prospects for Restored Beneficial Use (1994) (Administrative Record, Order No. 01-082, R0048073 - 48204); Southern California Coastal Water Research Project, Annual Report (1987) (Administrative Record, Order No. 01-082, R0048205 - 48304); National Research Council, Monitoring Southern California's Coastal Waters (1990) (Administrative Record, Order No. 01-082, R0048306 - 48473); Southern California Coastal Water Research Project, Annual Report (1988-89) (Administrative Record, Order No. 01-082, R0048476 - 48482); City of Los Angeles, Wastewater Program Management Division, Santa Monica Bay Stormwater Pollutant Reduction Study (December 1987) (Administrative Record, Order No. 01-082, R0048485 – 48561); Santa Monica Bay Restoration Project, Santa Monica Bay Characterization Study Chapter 7, Urban Runoff (1993) (Administrative Record, Order No. 01-082, R0048714 - 48733); To California Regional Water Quality Control Board, Stormwater Runoff in Los Angeles and Ventura Counties (June 1988) (Administrative Record, Order No. 01-082, R0050795 - 50888); Heal the Bay's State of the Marina Report, Marina del Rey (July 9, 1993) (Administrative Record, Order No. 01-082, R0050999 - 0051022); County of Los Angeles, Department of Beaches and Harbors, The Marine Environment of Marina del Rey (October 1991 – June 1992) (Administrative Record, Order No. 01-082, R0051023 - 51344); Prepared for American Oceans Campaign, Chemical Contaminant Release into the Santa Monica Bay, A Pilot Study (June 12, 1993) (Administrative Record, Order No. 01-082, R0051345 - 51557; Report to the Department of Beaches and Harbors, County of Los Angeles, The Marine Environment of Marina del Rey, October 1989 to September 1990 (March 1991) (Administrative Record, Order No. 01-082, R0052394 – 52721).

[36] These actions also ensure that discharges will not unreasonably affect present and anticipated beneficial uses and will not result in water quality less than water quality objectives, as required by Resolution No. 68-16.

quantitative and generally conducted using industry accepted computer modeling to show that proposed WMPs will achieve applicable WQBELs and will not cause or contribute to exceedances of receiving water limitations. This Order requires objective technical demonstrations that any proposed controls, and those controls already in the process of being developed, will address pollutants in MS4 discharges sufficient to meet water quality standards. Additionally, the Order requires a comprehensive evaluation and update, through the required adaptive management process, of the WMP during the permit term to ensure progress toward achieving WQBELs and receiving water limitations.

b. The Order requires Permittees to comply with WQBELs and/or receiving water limitations consistent with the assumptions and requirements of TMDL WLAs assigned to MS4 discharges established in 45 TMDLs applicable to water bodies within the Los Angeles Region to restore water quality sufficient to protect the beneficial uses of the impaired water bodies.

c. The Order requires Permittees to develop and implement stormwater management programs consisting of six major program elements (MCMs), and effectively prohibit non-stormwater discharges that are a source of pollutants through the MS4 to receiving waters.

d. The Order includes requirements for extensive monitoring and reporting designed to identify changes in water quality at hundreds of outfall monitoring sites.

These provisions are collectively designed to halt any further degradation of impaired water bodies and improve the quality of such waters to a level protective of existing uses over a time schedule that is as short as possible. The antidegradation policies do not explicitly or implicitly override the authority and discretion the Clean Water Act and the Water Code grant to the Los Angeles Water Board as to how it structures a permit to ensure water quality necessary to protect beneficial uses. The law does not require immediate restoration of impaired water bodies nor does it require an immediate prohibition of discharges that contribute to an exceedance in the waterbody. Rather, federal regulations at 40 CFR section 122.47 allow NPDES permits, including MS4 permits, to have compliance schedules. Similarly, Water Code section 13263, subdivision (c), authorizes the Los Angeles Water Board to include a time schedule for achieving water quality objectives in waste discharge requirements. Where a TMDL has been established, Water Code section 13242 states that the TMDL implementation plan, as incorporated into the water quality control plan, shall include a time schedule for actions to be taken. When issuing waste discharge requirements, Water Code section 13263 requires regional boards to implement any relevant water quality control plans that have been adopted. Certainly, water quality objectives must be achieved; but the law, as cited above, recognizes and allows for the fact that it can take time to restore or achieve the objectives.[37] In this regard, some impaired

[37] Additionally, and as discussed elsewhere in this Fact Sheet, while MS4 permits must include a technology-based standard of effectively prohibiting non-storm water discharges through the MS4 and reducing pollutants in the discharge to the MEP, requiring strict compliance with water quality standards (e.g., by requiring immediate compliance with receiving water limitations or water quality based effluent limitations) is at the discretion of the permitting agency (33 U.S.C. § 1342(p)(3)(B); *Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1166-67). This Order imposes numeric water quality based

water bodies may stagnate or, rarely, continue to degrade[38] for a period of time before showing improvement. This period of time may be as long as multiple years. This is not contrary to the authorities for compliance schedules stated above and is not contrary to the antidegradation policies.[39]

2. High quality water bodies:

Some of the waterbodies within the area covered by the Order may be high quality waters with regard to some pollutants. Some of these waterbodies may be currently high quality as compared to currently applicable objectives.[40] Others of these waterbodies may be currently impaired but may be classified as high quality waters because they were historically high quality for certain pollutants. MS4 discharges of stormwater and non-stormwater into such water bodies may have resulted in lowering of the quality of the water bodies since 1968 with regard to the pollutants in the discharge.

For high quality water bodies, [41] the Los Angeles Water Board finds as follows:

a. *Practicable Alternatives*: The Los Angeles Water Board has evaluated a range of practicable alternatives that would prevent or lessen any degradation

effluent limitations to implement TMDL WLAs and requires compliance with receiving water limitations for all constituents in the MS4 discharges. The fact that the Board also allows reasonable time schedules to achieve compliance with the numeric effluent limitations and receiving water limitations is not contrary to the law for this additional reason.

[38] Certain commenters have argued that any further degradation of water bodies not meeting objectives violates the antidegradation policies and that such further degradation has occurred under the 2012 Los Angeles County MS4 Order. As a matter of fact and science, the Los Angeles Water Board generally disagrees with assertions made that water bodies not meeting water quality objectives have continued to degrade (or that they are accelerating) under the 2012 Los Angeles County MS4 Order or will continue to degrade under this Order. However, even if these assertions were true, the law does not preclude limited and temporary further degradation while a permittee works to implement measures in compliance with a compliance schedule, as set forth above.

[39] With regard to waterbodies that are not high quality, the antidegradation policies do not require socioeconomic findings justifying any continued degradation of such waterbodies that may occur while the Permittees implement requirements in accordance with a compliance schedule. Even if such findings were required, the Los Angeles Water Board finds that this potential, limited, and temporary further lowering of water quality is justified for the same reasons articulated in the Section titled, "High Quality Water Bodies," Part III.H.2 of this Fact Sheet, *infra*.

[40] See, staff presentations at MS4 Workshops regarding monitoring data (dated 9/13/2018 (Ventura County data); and 7/12/2018 and 5/10/2018 (Los Angeles County data)), which summarize and evaluate data collected under the three prior MS4 permits. For example, at the mass emissions stations in the Ventura River, Calleguas Creek, and Malibu Creek watersheds, concentrations of copper, lead and zinc in wet weather are below water quality objectives, or TMDL numeric targets where applicable.

[41] The quality of some currently high quality waters that are close to or at objectives may degrade below water quality objectives temporarily while Permittees plan for, develop, and implement appropriate controls in accordance with the compliance schedules in the Order and some historically high quality waters may stagnate or continue to degrade below water quality objectives during the same period. The Los Angeles Water Board finds that the potential, limited, and temporary lowering of water quality below the objectives is authorized by 40 CFR § 122.47 and the time schedule provisions of the Water Code set out in the Section titled, "Water bodies that do not meet the water quality objectives (water bodies that are not high quality)" Part III.H.1 of this Fact Sheet, *supra*, and, to the extent any findings are required under the antidegradation policies, is justified for the same reasons articulated in this Part III.H.2 of this Fact Sheet, "High quality water bodies."

associated with permitted MS4 discharges to high quality waters. These alternatives are discussed below.

i. Alternative 1 - Complete prohibition on some or all pollutants in MS4 non-stormwater discharges to high quality waters: This alternative would prohibit MS4 discharges of some or all pollutants in non-stormwater to high quality receiving waters. By eliminating these discharges, pollutants from non-stormwater discharges would not reach high quality receiving waters during dry weather and thus not cause any degradation. In high quality water areas, this alternative could require the permittees to either divert all non-stormwater to a facility for treatment, or retain all non-stormwater through retention basins, infiltration galleries, and other controls that would prevent non-stormwater from reaching surface waters through storage, infiltration, or reuse. Alternatively, Permittees could install specific pollutant control measures that prevent specific pollutants from being discharged through the MS4.

ii. Alternative 2 - Complete prohibition on some or all pollutants in MS4 stormwater discharges to high quality waters: This alternative would prohibit MS4 discharges of some or all pollutants in stormwater to high quality receiving waters. By eliminating these discharges, pollutants from stormwater would not reach high quality receiving waters during wet weather and not cause any degradation. As wet weather will always occur, this alternative could require the permittees to either divert all stormwater in the MS4 to a facility for treatment, or retain all stormwater through retention basins, infiltration galleries, and other controls that would prevent stormwater from reaching surface waters through storage, infiltration, or reuse. Permittees could also install pollutant control measures that are specific to preventing specific pollutants from being discharged through the MS4.

iii. Alternative 3 - Stricter Pollutant Controls for New Development and Redevelopment in areas with high quality waters: This alternative would subject new development and redevelopment projects to more stringent water quality and runoff reduction criteria, such as retention of the 95th percentile, 24-hour storm volume instead of the 85th percentile, 24-hour storm volume. This alternative would hold new developments and redevelopments to more stringent performance criteria that would eliminate stormwater discharges from most storms.

iv. Alternative 4 - Watershed Management Program alternative compliance option without deemed compliance with Receiving Water Limitations for any high quality waters: This alternative would allow the permittees to implement approved WMPs, with customized control measures, to achieve Receiving Water Limitations, WQBELs, and other requirements. With this alternative, a permittee would not be deemed in compliance with Receiving Water Limitations for high quality waters while they are fully and timely implementing an approved WMP.

v. Alternative 5 - Watershed Management Program alternative compliance option with deemed compliance with Receiving Water Limitations for some high quality waters: This alternative would allow the permittees to implement approved WMPs, with customized control measures, to

achieve Receiving Water Limitations, WQBELs, and other requirements. With this alternative, a permittee would be deemed in compliance with Receiving Water Limitations for some high quality waters, primarily those waters that may have been high quality historically but are not currently high quality,[42] while they are fully and timely implementing an approved WMP.[43] This alternative was incorporated as a set of terms in the 2012 Los Angeles MS4 permit and the 2014 City of Long Beach MS4 permit.

vi. Alternative 6 - Establishment of WQBELs for MS4 discharges to high quality waters: This alternative includes the Board establishing WQBELs for MS4 discharges of certain pollutants to high quality waters. These WQBELs would apply to both stormwater and non-stormwater discharges. The 2010 Ventura County, 2012 Los Angeles County, and 2014 City of Long Beach MS4 permits only include WQBELs where they are based on TMDL wasteload allocations applicable to MS4 discharges (i.e., for impaired waters and not high quality waters). This alternative would require the Board to establish WQBELs where no TMDLs have been established.

b. *Economic and Social Development Considerations and Consistency with Maximum Benefit to the People of the State*: The Board incorporated Alternative 5 and aspects of Alternatives 1 and 2 into the Order. These alternatives may allow limited degradation of high quality water bodies by MS4 discharges, but these alternatives ultimately require MS4 discharges to meet and not fall below water quality standards.

Such degradation of high quality waters is necessary to accommodate important economic or social development in the area and is consistent with the maximum benefit to the people of the state for the following reasons:

i. Alternatives 1 and 2, if implemented as full prohibitions, would hamper important social and economic development.

(a) The MS4 discharges of stormwater and non-stormwater in certain circumstances are to the maximum benefit to the people of the state because they may be necessary for flood control and public safety.[44] MS4 discharges also can assist with maintaining instream flows that support beneficial uses.[45] In addition, complete diversion or

[42] See, discussion *infra* at Parts III.H.1.d and III.H.2.b of this Fact Sheet.

[43] Under this alternative, and in accordance with WQ-2020-0038, Permittees must develop compliance schedules for WMPs that (among other things) include a final date for achieving receiving water limitations as soon as possible. (State Board Order WQ-2020-0038 at p. 77; see, also, Order, Part IX.B.9.c.iii.c; Part X, generally.)

[44] SCCWRP Technical Report 520, Concept Development: Design Storm for Water Quality in the Los Angeles Region, October 2007; LASGRWC. Storm Water: Asset not Liability. [n.d.] [Noting at p. 1 the potential trade-offs between water quality and ensuring public safety, including protecting property from flood damage and maintaining passable roadways.]

[45] For instance, the Los Angeles River Flows Project studied the impacts of reduced flows on beneficial uses in the Los Angeles River as a pilot application of the California Environmental Flows Framework. At the beginning of this project, Los Angeles Water Board staff presented on the importance of minimum flows for recreation and wildlife in both concrete and soft-bottom channels of the river (https://www.waterboards.ca.gov/water_issues/programs/docs/lar/002_r4_la_river_info_item_20171103rev.pdf). Wading shorebirds, for example, rest and feed in the shallow waters of the concrete lined portion of the lower Los Angeles River. The final report for the project, "Process and Decision Support

retention of MS4 discharges that would reach the MS4 and receiving water would require extensive structural controls that are not technologically feasible in many locations.[46]

(b) The vast majority of the Permittees are cities and counties that provide essential and valuable public services. Part XIII of this Fact Sheet considers economics, including Permittees' compliance costs associated with meeting the requirements of the Order. Controlling stormwater discharges to the point that there is no potential degradation of any potentially high quality waters by requiring complete diversion or retention would be an enormous opportunity cost that could preclude MS4 permittees from spending substantial funds on other important social and economic needs. This may manifest itself in the reduction of some public services or prevent other public services from being provided in the first place. Permittees have previously provided public comments (on the Tentative Order and during consideration of the 2012 Los Angeles County MS4 Permit) that spending limited municipal resources on immediately addressing all pollutants in MS4 discharges (all stormwater and non-stormwater discharges) will adversely impact municipal budgets, such as fire and police protection, as well as other social services.[47]

(c) As another example, and specifically in response to comments received, the Los Angeles Water Board conducted an analysis (based on cited sources in footnote no. below), that estimates the equivalent public benefit that may be provided through affordable housing and services if full retention and diversion is not required. The results of the analysis support the finding that the social and economic benefits of a society where there would be significantly fewer unhoused residents would be far greater than the additional benefits created by taking water quality from the point where water quality standards are achieved to a level of higher quality that may only be achieved with full retention.[48] The same funds that would

Tools for Evaluating Flow Management Targets to Support Aquatic Life and Recreational Beneficial Uses of the Los Angeles River," quantified the flow ranges associated with different species, habitats, and recreational uses in the river and evaluated the impacts of various combinations of reductions in wastewater, stormwater, and non-stormwater discharges. In general, if all discharges were eliminated, there would not be enough flow to protect beneficial uses including habitat for local plant and animal species.

[46] Southern California Coastal Water Research Project. *Concept Development: Design Storm for Water Quality in the Los Angeles Region, Technical Report 520*. October 1, 2007.

[47] See, e.g., City of South El Monte comment letter on 2012 Los Angeles MS4 Permit, July 23, 2012 (prior to the time the deemed in compliance pathway was included in the permit) ("The City is dedicated to the protection and enhancement of water quality. The City, however, has other functions that require funding as well. If this Permit is adopted as proposed, even in the best case scenario, spending cuts to other crucial services such as police, fire, and public works are certain. The permittee dwindling general funds simply cannot take the financial hit the Permit is poised to impose on them.").

[48] In 2012, Los Angeles County projected that it would cost $120B, or $134.8B in 2019 dollars, for complete diversion or retention of MS4 discharges, whereas the cost of implementing EWMPs, which require addressing the 85th percentile, 24-hour storm event or otherwise reducing or treating stormwater discharges to attain water quality standards, was estimated by Board staff to be $21.0B-$21.3B (see Section XIII, Economic Considerations). Instead of using this cost differential of $113.5B-$113.8B to further improve

have to be used to prevent all MS4 discharges (as opposed to only 85% of those discharges) could be invested instead in addressing homelessness, and could support affordable housing and several decades of supportive services for a significant number of residents at-risk of being unhoused.[49]

(d) The significantly higher cost of complete stormwater diversion or retention could lead to increased fees for residents with little benefit

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waters that would already have achieved water quality standards, thereby already being able to support designated beneficial uses, this money could be better spent addressing the homeless problem in the region. In 2020, there were an estimated 66,436 unhoused residents in Los Angeles County. (Los Angeles Homeless Services Authority. 2021. 2020 Greater Los Angeles Homeless Count – Total Point-In-Time Homeless Population by Geographic Areas. https://www.lahsa.org/documents?id=4692-2020-greater-los-angeles-homeless-count-total-point-in-time-homeless-population-by-geographic-areas.pdf.) The median cost in Los Angeles County of constructing a permanent housing unit for the homeless is about $531,000. (Galperin, Ron. 2019. The High Cost of Homeless Housing: Review of Proposition HHH. Ron Galperin LA Controller. https://lacontroller.org/audits-and-reports/high-cost-of-homeless-housing-hhh/.) Supportive services to address the homeless housing gap were estimated in 2016 to be $428.8M per year, or $455.3M in 2019 dollars. (Los Angeles Homeless Services Authority. 2016. Report on Homeless Housing Gaps in the County of Los Angeles. https://homeless.lacounty.gov/wp-content/uploads/2019/02/Report-on-Homeless-Housing-Gaps-in-the-County-of-Los-Angeles-1-2016-1....pdf) Adjusting for the increase in the homeless population since then yields an estimated annual cost in supportive services of $1.2B in 2019 dollars. (Assuming the same supportive services cost per person estimated in 2016, multiplied by the number of homeless residents in LA County in 2020.) The stormwater capture cost differential could build enough units to house every homeless person in Los Angeles County and pay for supportive services for the next 67 years, even with the conservative assumption of one person per housing unit. Housing a homeless person in Los Angeles County results in average cost savings of about $2,731 per person per month in 2019 dollars in terms of reduced need for public services, such as medical and policing expenses. (Economic Roundtable. 2008. Where We Sleep: Costs when Homeless and Housed in Los Angeles. https://economicrt.org/wp-content/uploads/2009/11/Where_We_Sleep_2009.pdf) This means that there would be annual cost savings of about $2.2B from housing all homeless residents in Los Angeles County, and over 67 years the cost savings would be about $145.1B-$145.8B, greater than the stormwater capture cost differential of $113.5B-$113.8B. An analysis of Ventura County finds similar results where each of its 1,743 unhoused residents could be provided permanent housing for at least 55 years with its stormwater capture cost differential, assuming that Ventura County's cost of full capture would be their estimated MS4 compliance costs multiplied by the same ratios of Los Angeles County's E/WMP costs to cost of full stormwater capture, yielding cost differentials ranging from $2.5B-$23.4B (https://www.vcstar.com/story/news/2020/12/12/covid-ventura-county-continuum-of-care-2021-homeless-count/3868785001/). This analysis was also based on an average cost per unit of $480,000 for housing the homeless in Ventura County in 2019 and the same supportive services cost per person as in LA County (https://humanimpact.org/wp-content/uploads/2020/10/HIP-Ventura-County-Lets-Invest-Sources-2020.pdf). Detailed calculations can be found in the administrative record. It can be expected that there would be substantial additional benefits for these housed residents and for the local economy from being more fully able to engage in society.

[49] Contrary to what the Environmental Groups asserted during their closing statement to the Board on July 16, 2021, this discussion is only an example used to show how different permit requirements could affect municipal spending, and it is not a finding that the funds not expended on MS4 controls would in fact be spent on ending homelessness or that in deciding whether to approve the permit with deemed compliance provisions that the board is presented with a zero sum choice—housing or water quality. Municipalities' budgets are not unlimited, so when one slice of the budget pie gets bigger, another slice may get smaller. Permittees who testified during the hearings on July 8, 9, and 16, 2021, and those who testified during the 2012 Los Angeles County MS4 hearings, have identified certain services that would be cut, such as police and fire, if they were required to immediately comply with all receiving water limitations.

in return after water quality standards have been met, or beyond the requirement to address the 85th percentile, 24-hour storm event. The literature is sparse on the impact of MS4 project costs on user fees, but Kea et al. (2016) found higher rates of user fee establishment in the years directly before and after MS4 permit deadlines,[50] indicating that utilities often rely on user fees to meet permit requirements.

It is also possible that higher costs could be passed down to residents through increased housing prices driven by higher impact fees, which cities often charge developers to help fund public services, or higher construction costs. The literature finds that overall impact fees lead to higher home prices.[51] Requiring complete stormwater diversion or retention from properties could also lead to higher construction costs for housing, which is one of the drivers of higher home prices.[52] There is extensive literature showing that higher housing prices are associated with proximity to cleaner waterbodies,[53] which provide benefits to society. However, higher housing prices driven by higher impact fees or construction costs that do not contribute toward discernible improvements in water quality would likely provide lower marginal benefits compared to a scenario where residents could avoid additional housing costs by not having to pay higher impact fees or construction costs in a region where housing costs are already high, or a scenario where this cost could be spent on more pressing public services or societal problems (see, for example, footnote , *supra*.)

ii. However, aspects of Alternatives 1 and 2 are practicable and have been incorporated into this Order. The Order generally implements a prohibition on trash discharges through the installation of full capture systems or controls to achieve full capture equivalency, or alternative

[50] Kea, Kandace, Randel Dymond, Warren Campbell. 2016. An Analysis of Patterns and Trends in United States Stormwater Utility. Journal of the American Water Resources Association, 52(6). See, also, Comment Letter on 2012 Los Angeles MS4 Permit from City of Lakewood, Lisa A. Rapp, Director of Public Works, July 23, 2012, Comment Letter from City of La Verne, Daniel W. Keesey, Director of Public Works, July 23, 2012, and Comment Letter from LA Permit Group, July 23, 2012 (discussing the need to, and difficulty of, levying additional special taxes to pay for the permit).

[51] Mathur, Shishir, Paul Waddell, and Hilda Blanco. 2004. The Effect of Impact Fees on the Price of New Single-family Housing. Urban Studies, 41(7); Ihlanfeldt, Keith R. and Timothy M. Shaughnessy. 2004. An empirical investigation of the effects of impact fees on housing and land markets. Regional Science and Urban Economics, 34(6); Mathur, Shishir. 2013. Do All Impact Fees Affect Housing Prices the Same? Journal of Planning Education and Research, 33(4).

[52] Emmons, William R. 2019, Sept. 5. Construction Costs, Not Another Housing Bubble, Are Driving House Prices Higher. St. Louis Fed On the Economy Blog. https://www.stlouisfed.org/on-the-economy/2019/september/construction-costs-housing-bubble-driving-housing-prices-higher

[53] See e.g. Guignet, Dennis, Matthew T. Heberling, Michael Papenfus,Olivia Griot, and Ben Holland. 2020. Property values, water quality, and benefit transfer: A nationwide meta-analysis. Working Papers 20-04, Department of Economics, Appalachian State University. https://ideas.repec.org/p/apl/wpaper/20-04.html

compliance option, e.g., the mass-balance approach.[54] The Order also largely prohibits the discharge of non-stormwater into and through the MS4 to receiving waters. While there are some limited exceptions where the non-stormwater discharge is expected not to be a source of pollutants, where the discharge is determined to be a source of pollutants it must be prohibited. The Order also supports efforts to maximize the capture of stormwater through retention basins, infiltration galleries, and other controls.

iii. Alternative 3, if implemented, would create heightened water quality related performance requirements for new developments and redevelopments that discharge to high quality water. Holding new developments and redevelopments to more stringent criteria may be practicable for some projects; however, the benefit to water quality is expected to be marginal as compared to the requirements already imposed on projects designated as "Priority Development Projects" in the Order. (See Part VIII.F.1.a of the Order.) Whenever feasible, these projects must implement structural BMPs to remove, reduce, beneficially reuse, and/or retain stormwater on-site. These structural BMPs must be designed to address the 85th percentile, 24-hour runoff volume. When on-site measures are technically infeasible (e.g., infill development), the projects are required to mitigate off-site. These requirements apply whether or not the receiving water is considered high-quality and are expected to improve water quality for a greater number of people. Further, because waterbodies may be high quality for some pollutants and not others it is difficult, if not impossible, to designate specific areas as high quality waters.

iv. Both Alternatives 4 and 5, if implemented, could result in limited degradation of high quality water bodies. Any degradation that would occur under either alternative is consistent with the maximum benefit to the people of the state because the structural controls built through these programs will ultimately be more effective at maintaining and restoring water quality protective of beneficial uses than ongoing programmatic controls. The WMP permit terms of Alternatives 4 and 5 require implementation of objective technical solutions that have been demonstrated to be designed to meet water quality standards. Such controls necessarily take time to design and construct, but it is to the maximum benefit of the people of the state that such controls be designed and implemented properly so as to be protective of water quality in the long run. These measures that control impacts from stormwater and non-stormwater discharges in the Order are typically effective across multiple pollutants. The alternatives would concurrently address other constituents of concern that may not be causing impairment but may still be leading to degradation, resulting in improvements in levels of all pollutants, including those for which the receiving water may be high quality.

[54] Where there are no applicable trash TMDLs, the Order requires compliance with the Statewide Trash Amendments in Priority Land Uses (PLU), alternative land use areas, and designated land use areas. See, Part III.B (Trash Discharge Prohibitions), Order; and Part IV.B.3 (WQBELs for Trash), Order.

v. Alternatives 4 and 5 avoid the high economic and social costs associated with decreased public services analyzed above in Parts III.H.2.b.i.(b)-(d)of this antidegradation analysis.[55] At the same time, Alternatives 4 and 5 provide additional economic and social benefits to the people of the state by incentivizing and incorporating multi-benefit projects that include benefits beyond water quality protection such as increased local water supplies, beautified streets, plazas, and parking areas, and facilities that support habitat and recreation. For example, the MacArthur Lake Rehabilitation Project in the City of Los Angeles is projected to capture about 130 acre-feet of stormwater per year while improving the habitat and recreational value of the park by improving lake water quality and adding bioswales and wetlands. The master plan for the project was completed in 2017, and it is estimated that the project will be completed between 2024 to 2026.[56]

vi. Multi-benefit projects – that is, projects that fund stormwater capture that provide multiple benefits like those emphasized in WMPs – are actively encouraged by the State of California, which administers Proposition 1 funds ($200 million in grant funds) for such multi-benefit projects. For example, the Piru Stormwater Capture for Groundwater Recharge Project in Ventura County, which is estimated to capture about 17 acre-feet per year while also augmenting local water supply through groundwater recharge.[57] Table F-19 provides further examples of multi-benefit projects funded by Proposition 1, many of which were funded to build WMP projects in Los Angeles County. While Prop 1 funding has been expended, construction of multi-benefit projects from approved WMPs will likely qualify for these types of grant monies in the future. Additionally, the construction of these projects also creates good-paying jobs that do not require advanced degrees, accessible to those in disadvantaged communities.[58]

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[55] See footnote nos. - and sources cited therein.

[56] Deets, Deborah, Gilbert A. Cedillo, Enrique C. Zaldivar, and Shahram Kharaghani. 2020. MacArthur Lake Rehabilitation Project. PowerPoint presentation. https://drive.google.com/file/d/1wOoTBkZE4amsEoOtwKOxxa_gAzSQISUu/view

[57] Ventura County Public Works. 2020. In the News: Completed Project for Groundwater Recharge Captures Stormwater amid dry months of January and February. Ventura County Public Works. https://www.vcpublicworks.org/2020/08/25/piru-stormwater/ While Ventura County's current 2010 MS4 Permit does not have provisions to implement WMPs as a compliance alternative, this project is included in the Ventura Countywide Municipal Stormwater Resource Plan prepared for the Ventura Countywide Stormwater Quality Management Program, dated September 20, 2016. This plan identifies projects that are expected to contribute towards meeting MS4 permit requirements, including TMDL-related provisions, in addition to achieving other benefits, including augmenting local water supplies. In this way, it has many similarities to WMPs. It is expected that these types of multi-benefit projects will be incentivized further by this Order, as they were in Los Angeles County following the issuance of the 2012 Los Angeles County MS4 Permit.

[58] Building on the findings by Economic Roundtable, Los Angeles Alliance for a New Economy estimated that over 30 years, the Safe, Clean Water Program (Measure W) will create about 6,530 construction jobs and 1,347 O&M jobs, as well as about 1,559 annual indirect and induced jobs. This would yield about $14B in overall regional economic benefits from $9B in investment. Furthermore, many of these jobs created would be good-paying jobs that do not require an advanced degree, accessible to those in disadvantaged communities. (Los Angeles Alliance for a New Economy (LAANE). Liquid Assets. How Stormwater Infrastructure Builds Resilience, Health, Jobs, and Equity. March 2018.)

Table F-19. Multi-benefit projects funded through Proposition 1 To Date

Project Name	Project Proponent	Water supply benefit	Water quality benefit	Flood management benefit	Environmental benefit	Community benefit	Benefit to DAC
South Gate Urban Orchard Demonstration Project	City of South Gate	Increased water supply reliability	Nonpoint source pollution control	--	--	Enhanced and/or created recreational and public use areas	Y - City of South Gate and Thunderbird Villa Mobile Home Park
San Fernando Regional Park Project (Planning only)	City of San Fernando	Increased water supply reliability	--	Decreased flood risk by reducing runoff rate and/or volume	--	Enhanced and/or created recreational and public use areas / Public education	--
Tujunga Spreading Grounds Enhancement Project	City of Los Angeles DWP	Increased water supply reliability	Reestablished natural water drainage and treatment	Decreased flood risk by reducing runoff rate and/or volume	--	--	Y - The communities of Arleta and Sun Valley
Central-Jefferson High Green Alley Network Storm Water Capture Project	The Trust for Public and City of Los Angeles	Increased water capture and conservation	Increased filtration and treatment of runoff	--	--	Enhanced and/or created recreational and public use areas	Y - South Los Angeles
John Anson Ford Park Infiltration Cistern	Gateway Water Management Authority	Increased water supply reliability	Reestablished natural water drainage and treatment	Decreased flood risk by reducing runoff rate and/or volume	--	--	Y - Cities of Bell Gardens and Commerce

Project Name	Project Proponent	Water supply benefit	Water quality benefit	Flood management benefit	Environmental benefit	Community benefit	Benefit to DAC
Ladera Park Stormwater Capture Project	LA County	Increased water supply reliability	Reestablished natural water drainage and treatment	--	Environmental and habitat protection and improvement	--	N
Gates Canyon Park Project	LA County	Increased water conservation	Nonpoint source pollution control	--	Environmental and habitat protection and improvement	--	N
East Los Angeles Sustainable Median Stormwater Capture Project	LA County	Increased water supply reliability	Nonpoint source pollution control	--	--	Enhanced and/or created recreational and public use areas	Y - East Los Angeles
Walnut Storm Water Capture and Groundwater Replenishment Basin	City of Torrance	Increased water supply reliability	Nonpoint source pollution control	Decreased flood risk by reducing runoff rate and/or volume	--	Public education	Y
Piru Stormwater Capture for Groundwater Recharge	Ventura County	Increased water supply reliability	Increased filtration and/or treatment of runoff	--	--	--	Y - Piru
Merced Avenue Greenway Improvement Project	City of South El Monte	--	Increased filtration and treatment of runoff	--	Reduced energy use, greenhouse gas emissions, or provides a carbon sink	Improved public health	Y - City of South El Monte

Project Name	Project Proponent	Water supply benefit	Water quality benefit	Flood management benefit	Environmental benefit	Community benefit	Benefit to DAC
Walnut Park Pocket Park and Stormwater Infiltration Project	LA County	Increased water conservation	Increased filtration and treatment of runoff	Decreased flood risk	--	--	Y - Huntington Park
Stormwater Harvesting & Treatment Project For Groundwater Injection	City of Santa Monica	Increased water supply reliability	Nonpoint source pollution control / Increased filtration and treatment of runoff	--	--	--	N
Alondra Park Multi-Benefit Stormwater Capture Park	LA County	Increased water supply	Increased filtration and treatment of runoff	--	--	Enhanced and/or created recreational and public use areas	N
Valley Village Park Stormwater Capture Project	City of Los Angeles DWP	Increased water supply reliability	Increased filtration and treatment of runoff	--	--	Enhanced and/or created recreational and public use areas	--

vii. Alternative 4 is nevertheless not to the maximum benefit of the people of the state because it is less likely than Alternative 5 to result in the anticipated economic and social development described in Part III.H.2.b, subsection v, immediately above. As many of the permittees testified during the hearing on this Order, WMPs with the broader deemed compliance option (Alternative 5) better incentivize building and investing in long-term structural and non-structural controls that will improve water quality in the long run for multiple constituents and with multiple benefits.[59] There are several reasons for this. Deeming Permittees in compliance with receiving water limitations while they are building and investing in these multi-benefit projects is necessary to accommodate the public bidding process (which many municipalities must go through to initiate construction) and the construction process, which takes approximately 5-7 years.[60] Deeming Permittees in compliance while they are implementing their WMP projects allows Permittees to focus on constructing multi-benefit projects and long-term water sustainability planning, instead of focusing immediately (and spending money) on fixing violations or defending litigation related to those violations that might occur *before* their projects are completed. Having determined that water quality is most effectively protected by requiring Permittees to take a thoughtful proactive watershed management approach to discharges, which also encourages water supply augmentation and has environmental benefits, the Los Angeles Water Board finds that fairness and good public policy also advises against requiring them to comply with all effluent and receiving water limitations immediately (and potentially penalizing them for not doing so). The Order is designed to facilitate cooperation and coordination between the State and Permittees, local government entities. For example, Paul Alva, Principal Engineer for the Los Angeles County Department of Public Works, testified on July 16, 2021, that the 2012 Los Angeles County MS4 Permit structure, with deemed in compliance, has enabled the County to form new partnerships with entities like Caltrans and Los Angeles Department of Water and Power, and that it has fostered collaboration with other permittees as well. Allowing local governments to be deemed in compliance while implementing and constructing WMP projects strengthens this important public policy goal. Without the deemed compliance approach, Permittees are expected to shift at least some of their limited resources budgeted for planned, comprehensive, long-term, multi-benefit projects, to measures that are reactive, short-term, and ultimately less effective or protective of water quality in the long run.[61] Importantly, the deemed compliance approach does not mean that the Los Angeles Water Board cannot take

[59] See, Table F-20. Testimony from Los Angeles County Department of Public Works staff, and representatives from the Lower Los Angeles River Watershed and Lower San Gabriel River Watershed E/WMP groups on July 16, 2021 also supports this.

[60] Testimony provided by Los Angeles County Public Works staff and other permittees at Board meetings and workshops in 2020 states that TMDL implementation projects (incorporated into WMPs) can take from five to seven years per project from design to completion (January 7, 2020 workshop and May 14, 2020 Board meeting).

[61] See, footnote nos. - and citations therein.

enforcement to ensure implementation of the Order requirements. Of course, Permittees are required to be pursuing and implementing their WMP controls as expeditiously as possible according to approved time schedules, and they can be separately subject to enforcement if they are not. Similarly, they may be subject to third-party citizen suits for violations of these terms.

viii. Alternative 5 is necessary to accommodate important economic and social development and to the maximum benefit of the people of the state because coupling the WMP framework with deemed compliance also incentivizes collaboration to implement the most cost-effective controls. For example, Permittees in the County of Los Angeles were able to leverage the water supply and water quality benefits of the WMPs with deemed in compliance benefits to pass funding measures such as Measure W and Measure CW. Table F-20 documents the Measure W projects funded in 2020 and 2021,[62] the majority of which were also proposed in an E/WMP. Table F-20 also documents another important fact that also demonstrates that Alternative 5 results in social and economic development that would not be achieved under Alternative 4. The kinds of projects built under the WMP framework with deemed in compliance has facilitated investment and construction of multi-benefit projects that include parks, infiltration, and low impact development (among other things) in communities that might not have seen that investment without the Board's adoption of the Los Angeles County MS4 Permit in 2012 incorporating the alternative compliance pathway of WMPs with deemed in compliance. This is not speculation. Mr. Alva from the County of Los Angeles explained to the Board on July 16, 2021, that the landscape of water quality has and will continue to vastly improve all over the County, and not just in certain communities, due to WMP construction and implementation. Under the 2001 Permit, which did not include deemed in compliance provisions for RWLs, only about two dozen coastal projects for low flow diversions were built to achieve water quality objectives. The 2012 Permit facilitated a shift in the building of projects from the limited number of coastal projects under the 2001 permit, to the planning, approval and beginning construction of many multi-benefit projects all over the County, including in disadvantaged, inland communities. All of Los Angeles County benefits from the multi-benefit projects now – which include multi-benefit projects and nature-based solutions that take into account current pressing challenges of drought and climate change and allow change to occur in an equitable fashion, in communities where they would not have occurred otherwise. Mr. Alva testified that this paradigm shift, towards building multi-benefit projects across the region and not just at the coast, would not have happened without the current compliance pathway, WMPs with deemed in compliance. Alternative 5, compared to Alternative 4, has thus already resulted in and is expected to continue to result in important economic and social development and are to the maximum benefit to the people of the state.

[62] Los Angeles County. Safe Clean Water Program – 2020-21 Stormwater Investment Plans for nine Watershed Area Steering Committees. https://safecleanwaterla.org/projects2/

Table F-20. Measure W Funded Projects (2020-2021)

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
Active Transportation Rail to River Corridor Project - Segment A	Los Angeles Metropolitan Transit Authority (Metro)	LID	Upper Los Angeles River	ULAR	No	Yes	Mimic Natural Processes/Uses Natural Material	Connect to Aquifer/Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space/ Enhance Green Space in Schools	Bacteria
Adventure Park Multi Benefit Stormwater Capture Project	Los Angeles County Public Works	Capture and diversion to sewer; LID	Upper San Gabriel River	USGR	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to WWTP	Reduce Heat Island/Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Enhance Habitat or Park Space	Other
Alondra Park Multi Benefit Stormwater Capture Project	Los Angeles County	Capture and diversion to sewer; LID	South Santa Monica Bay	DC	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer/Connect to WWTP	Reduce Heat Island/Provide Recreational Opportunities/ Provide Shade/ Improve Flood	Other

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
									Protection/Enhance Habitat or Park Space	
Baldwin Lake and Tule Pond Restoration Project	Los Angeles County Public Works/Flood Control District	Enhancement	Rio Hondo	RH-SGR	Yes	Yes	Mimic Natural Processes/Uses Natural Material	Connect to Aquifer	Provide Recreational Opportunities/ Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space	Other
Barnes Park	City of Baldwin Park	Infiltration	Upper San Gabriel River	USGR	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	--	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Enhance Habitat or Park Space	Zn
Bassett High School Stormwater Capture Multi-Benefit Project	Los Angeles County	Infiltration	Upper San Gabriel River	USGR	Yes*	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Enhance	Zn

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
									Habitat or Park Space/Enhance Green Space in Schools	
Beverly Hills Burton Way Green Street and Water Efficient Landscape Project	City of Beverly Hills (Derek Nguyen)	Green Street/ Infiltration	Central Santa Monica Bay	Ballona Creek	No	No	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer/Use Onsite	Reduce Heat Island/ Provide Shade/ Improve Flood Protection/ Enhance Habitat or Park Space	Zn
Bolivar Park	City of Lakewood	O&M	Lower San Gabriel River	LCC	Yes	Yes	Uses Natural Material	Connect to Aquifer/ Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Enhance Habitat or Park Space/ Enhance Green Space in Schools	Zn
Caruthers Park	City of Bellflower	O&M	Lower San Gabriel River	LCC	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer/ Use Onsite	Reduce Heat Island/Provide Recreational Opportunities/Provide Shade/Improve Flood Protection/Enhance	Other

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
									Habitat or Park Space	
City of San Fernando Regional Park Infiltration Project	City of San Fernando (Kenneth Jones)	Infiltration	Upper Los Angeles River	ULAR	Yes	Yes	Mimic Natural Processes	Connect to Aquifer	Provide Shade/ Improve Flood Protection/ Enhance Habitat or Park Space	Zn
Culver City Mesmer Low Flow	City of Culver City	Low Flow Diversion	Central Santa	Ballona Creek	Yes	No	--	Connect to WWTP	--	Other
East Los Angeles Sustainable Median Stormwater Capture Project	Los Angeles County	Infiltration; LID	Rio Hondo	ULAR	Yes*	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Enhance Habitat or Park Space	Other
Echo Park Lake Rehabilitation	City of Los Angeles, Bureau of Sanitation	O&M	Upper Los Angeles River	ULAR	No	No	Mimic Natural Processes /Uses Natural Material	Use Onsite	Provide Recreational Opportunities/ Improve Flood Protection/ Enhance Habitat or Park Space	Nitrogen

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
El Dorado Regional Project	City of Long Beach	Planning and Design	Lower San Gabriel River	LSGR	No	Yes	Mimic Natural Processes /Uses Natural Material	Connect to WWTP /Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space	Zn
Encanto Park Stormwater Capture Project	City of Monrovia	Infiltration	Upper San Gabriel River	RH-SGR	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Shade/ Improve Flood Protection/ Enhance Habitat or Park Space	Zn
Fernangeles Park Stormwater Capture Project	Los Angeles Department of Water and Power (LADWP)	Infiltration	Upper Los Angeles River	ULAR	Yes*	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space	Zn
Franklin D. Roosevelt Park Regional Stormwater Capture Project	Los Angeles County	Infiltration	Upper Los Angeles River	ULAR	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Enhance	Zn

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
									Habitat or Park Space	
Garvey Avenue Grade Separation Drainage Improvement Project	City of El Monte	Infiltration	Upper San Gabriel River	El Monte	Yes*	Yes	Mimic Natural Processes	Connect to Aquifer	Improve Flood Protection	Zn
Hasley Canyon Park Stormwater Improvements Project	Los Angeles County Public Works	Infiltration	Santa Clara River	USCR	Yes	No	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Provide Recreational Opportunities/ Improve Flood Protection/ Enhance Habitat or Park Space	Nitrogen
Hermosillo Park	City of Norwalk	Infiltration	Lower San Gabriel River	LSGR	Yes*	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer/Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Enhance Habitat or Park Space	Zn
John Anson Ford Park Infiltration Cistern	City of Bell Gardens	Infiltration	Lower Los Angeles River	LAR-UR2	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood	Zn

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
									Protection/ Improve Waterway Access/ Enhance Habitat or Park Space	
Ladera Park Stormwater Improvements Project	Los Angeles County Public Works	Infiltration Wells	Central Santa Monica Bay	Ballona Creek	Yes	No	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer/ Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Enhance Habitat or Park Space	Zn
Lankershim Boulevard Local Area Urban Flow Management Network Project	City of Los Angeles, Bureau of Sanitation	Infiltration	Upper Los Angeles River	ULAR	Yes*	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Shade/ Improve Flood Protection	Zn
Long Beach Municipal Urban Stormwater Treatment (LB MUST) - Phase 1	City of Long Beach	Treatment and reuse	Lower Los Angeles River	LLAR	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space	Other

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
MacArthur Lake Rehabilitation Project	City of Los Angeles, Bureau of Sanitation	Capture and reuse; Recreation enhancement	Central Santa Monica Bay	Ballona Creek	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to WWTP/ Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Enhance Habitat or Park Space/ Enhance Green Space in Schools	Zn
Mayfair Park	City of Lakewood	O&M	Lower San Gabriel River	LCC	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to WWTP/ Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Enhance Habitat or Park Space	Other
Monteith Park and View Park Green Alley Stormwater Improvements Project	Los Angeles County Public Works	Infiltration Wells	Central Santa Monica Bay	Ballona Creek	No	Yes	Mimic Natural Processes/ Uses Natural Material	--	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Enhance Habitat or Park Space	Zn
Newhall Park Infiltration	Dan Duncan, Oliver Cramer	Infiltration	Santa Clara River	USCR	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Enhance Habitat or Park Space/ Enhance Green Space in Schools	Bacteria

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
Oro Vista Local Area Urban Flow Management Project	City of Los Angeles, Bureau of Sanitation	Infiltration; LID	Upper Los Angeles River	ULAR	Yes*	No	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Shade/ Improve Flood Protection	Zn
Pedley Spreading Grounds	East San Gabriel Valley Watershed Management Group (City of San Dimas, City of Claremont, City of Pomona, City of La Verne)	Infiltration	Upper San Gabriel River	ESGV	No	No	Mimic Natural Processes	Connect to Aquifer	Improve Flood Protection/ Enhance Habitat or Park Space	Other
Rory M. Shaw Wetlands Park Project	Los Angeles Flood Control District	Detention pond/ infiltration	Upper Los Angeles River	ULAR	Yes*	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space	Nitrogen

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
Skylinks Golf Course at Wardlow Stormwater Capture Project	City of Long Beach	Infiltration	Lower San Gabriel River	LCC	Yes	No	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer/ Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space	Zn
Strathern Park North Stormwater Capture Project	Los Angeles Department of Water and Power (LADWP)	Infiltration	Upper Los Angeles River	ULAR	Yes*	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space	Zn
Sustainable Water Infrastructure Project	City of Santa Monica	Capture, advance treatment, and reuse	Central Santa Monica Bay	SMB J2-J3	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer/ Connect to WWTP/ Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space/ Enhance Green Space in Schools	Bacteria

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
The Distributed Drywell System Project	City of Glendale	Infiltration	Upper Los Angeles River	ULAR	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Shade/ Improve Flood Protection	Zn
Torrance Airport Storm Water Basin Project, Phase 2	City of Torrance	Capture and divert to sanitary sewer	South Santa Monica Bay	Beach Cities	Yes	Yes	--	Connect to WWTP	Improve Flood Protection	Other
Valley Village Park Stormwater Capture Project	Los Angeles Department of Water and Power (LADWP)	Infiltration	Upper Los Angeles River	ULAR	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space	Other
Walnut Park Pocket Park Project	County of Los Angeles	Infiltration	Upper Los Angeles River	ULAR	Yes*	Yes	Mimic Natural Processes/Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Enhance Habitat or Park Space	Zn

Project Name	Project Developer	Project Type	Watershed Area	WMP/EWMP Area	Proposed in E/WMP?	DAC?	Natural Based Solution	Water Supply	Community Benefits	Primary Pollutant Addressed
Washington Boulevard Stormwater and Urban Runoff Diversion	City of Culver City	Capture and divert to sanitary sewer	Central Santa Monica Bay	MdR	Yes	No	Mimic Natural Processes/ Uses Natural Material	Connect to WWTP/ Use Onsite	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection	Other
Wilmington Q Street Local Urban Area Flow Management Project	City of Los Angeles, Bureau of Sanitation	Green Street/ Infiltration	South Santa Monica Bay	DC	Yes*	Yes	Mimic Natural Processes/Uses Natural Material	--	Reduce Heat Island/ Provide Shade/ Improve Flood Protection/ Enhance Green Space in Schools	Zn
Wingate Park Regional EWMP Project	City of Covina	Planning and design of Infiltration project	Upper San Gabriel River	USGR	Yes	Yes	Mimic Natural Processes/ Uses Natural Material	Connect to Aquifer	Reduce Heat Island/ Provide Recreational Opportunities/ Provide Shade/ Improve Flood Protection/ Improve Waterway Access/ Enhance Habitat or Park Space	Zn

* This specific project was not identified in the E/WMP, but this type of project was identified.

Similarly, Permittees in both Los Angeles and Ventura Counties have been able to utilize Proposition 1 funding to develop multi-benefit stormwater management projects such as those set forth in Table F-20, supra, which are exactly the type of projects that WMPs contemplate.[63] And, as discussed immediately above, this alternative provides important socioeconomic benefits such as creation of new jobs, increased local water supplies, beautified streets, plazas, and parking areas, and facilities that support habitat and recreation, while allowing the local governments to maintain important public services. This alternative therefore has the greatest chance of success, within the shortest time frame, and furthers the goal of maintaining and achieving water quality standards.

ix. Further, Alternative 5 does not create a framework where there is a deemed in compliance pathway for all receiving water limitations. Alternative 5 does not relieve Permittees of the requirement to effectively prohibit non-stormwater discharges. The non-stormwater discharge prohibitions are not afforded deemed compliance status through the WMP provisions. Rather, the WMPs provide alternative compliance pathways only for particular waterbody-pollutant combinations: Those addressed by TMDLs (highest priority); those that are listed on the Clean Water Act Section 303(d) List as impaired and for which MS4 discharges may be causing or contributing to the impairment (high priority); or for which there are insufficient data to indicate water quality impairment in the receiving water according to the State's Listing Policy, but which exceed applicable receiving water limitations contained in this Order and for which MS4 discharges may be causing or contributing to the exceedance within the last five years (medium priority).[64] None of these water bodies are high quality waters currently. As explained in State Water Board Order WQ 2020-0038, Permittees must be clear about which waterbody-pollutant combinations and receiving water limitations they will address in their WMPs.[65] "Deemed compliance is not a right; it is an accommodation based on the time and effort required to undertake the complex planning and implementation efforts needed to improve water quality. It is meant to encourage significant investment in collaborative regional - and watershed-based BMP implementation, leading eventually to all receiving waters meeting final receiving water limitations."[66]

[63] See, Table F-21, supra.
[64] As such, many of the waters to which the deemed in compliance allowance provisions will be applied are not high quality waters in the first place (see Order, Part IX.A.4; IX.B.1-3) and subject instead to the antidegradation analysis under Part III.H.1 of this Fact Sheet. The findings above are made only to the extent these waterbodies are considered high quality based on a historic baseline. To the extent that the WMP alternative compliance pathways do allow for pollutants to be discharged into otherwise high quality waters, the period to achieve receiving water limitations where there are exceedances must be as short as possible.
[65] See, e.g., WQ 2020-0038 at p. 11.
[66] WQ 2020-0038 at p. 10.

x. Alternative 5 may result in limited degradation of high quality waters, in particular currently impaired waters that may nevertheless be considered high quality waters based on a historic baseline.[67] The federal antidegradation policy does not require consideration of economic and social costs associated with degradation; it only requires findings that "allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located." The state antidegradation policy does not define the exact factors that must be considered in determining "maximum benefit to the people of the state." APU 90-004 states that factors to be considered in a complete antidegradation analysis include economic and social costs of the discharge compared to its benefits, but this Order is subject only to a simple antidegradation analysis.[68] The Los Angeles Water Board has nevertheless considered the costs associated with water quality degradation that may occur under Alternative 5, but has done so necessarily at a generalized level. Specifically, in choosing Alternative 5 over Alternative 4, the Los Angeles Water Board finds as follows:

(a) There are significant environmental, public health, and economic costs associated with exceedances of water quality objectives. Southern California's local economy thrives on a healthy environment, as does the health of its population. By way of example, the failure to control stormwater runoff (which would result in exceedances of water quality objectives) would, among other things, negatively impact ocean water quality, which would negatively impact the coastal economy, including tourism and the fishing industry. Similarly, the failure to meet water quality objectives in ocean waters would negatively impact recreation and public health of beachgoers. These costs are discussed in detail in Part XIII.D.4 of this Fact Sheet and are incorporated into these findings by reference.

(b) The considered costs are associated with exceedances of water quality objectives rather than limited degradation of high quality waters to a level that remains better than objectives. This is because the objectives are set to protect beneficial uses in the first place.

(c) Where Alternative 5 may allow a currently high quality waterbody to degrade below water quality objectives, or where it will allow a currently impaired, but historically high quality waterbody to stagnate or worsen in quality, even for multiple years, this allowance is for a finite period of time defined by the compliance schedule specified in the permit. The Los Angeles Water Board finds that the temporary degradation is justified based on the social and economic benefits discussed in findings Part III.H.2.b of this Fact Sheet.

[67] The WMPs are designed to provide deemed in compliance only for pollutants for which the waterbody is impaired or there are exceedances of receiving water limitations and the Order is not written to allow currently high quality waterbodies to be degraded for those pollutants for which deemed compliance is not provided.

[68] Outside of the complete antidegradation analysis context, APU 90-004 states only that the "findings should indicate . . . [t]he socioeconomic and public benefits that result from lowered water quality." (APU 90-004, p. 1.)

associated with Alternative 5, notwithstanding the potential costs of degradation. In particular, the Los Angeles Water Board anticipates that the structural controls that are designed and built over a longer timeframe are more likely to lead to water quality improvements than other measures.

(d) Alternative 4 could potentially avoid some of the costs discussed in subsection (a), above, because some Permittees may correct some exceedances earlier if required to comply immediately with receiving water limitations. From a practical perspective, however, the Los Angeles Water Board finds that immediate compliance, particularly for those waters that may have been high quality historically but are not high quality currently, is unrealistic even if required, given the technical and financial constraints faced by Permittees. Since Permittees will not be able to afford to comply immediately, any costs avoided would be minimal.[69]

xi. Regarding Alternative 6, WQBELs are for the most part set to be protective of beneficial uses, which is the floor of the level of protection required under the antidegradation policies and may not be protective of water quality higher than necessary to protect beneficial uses. Therefore, this alternative is not more protective of high quality water bodies than requiring compliance with receiving water limitations, which already require permittees' MS4 discharges to not cause or contribute to exceedances of water quality objectives. This alternative would impose a significant analytical hurdle on development and adoption of a permit by requiring the Los Angeles Water Board to spend extensive efforts to analyze hundreds of thousands of waterbody-pollutant combinations and then further conduct an infeasible set of reasonable potential analyses to determine whether the permittees' discharges are impacting high quality waters and for what pollutants. Ultimately, the alternative would divert staff resources from oversight of the implementation of potentially more effective and practical permit requirements, as well diverting staff from the Board's other programs.

xii. For all of the reasons set forth above, the Los Angeles Water Board finds that any lowering of high quality waters under this Order's structure, which is consistent with Alternative 5 and components of Alternatives 1 and 2, is necessary to accommodate important economic or social development in the Region and is to the maximum benefit of the people of the State.

c. *Requirement for Highest Statutory and Regulatory Requirements and Best Practicable Treatment and Control:* The Order requires the highest statutory

[69] See, e.g., Testimony from Arne Anselm, Ventura County, Transcript, October 15, 2020 Board Workshop, at p. 55:12-14 ("And certainly funding plays a big part of that, and getting a funding plan together, and developing that source of money. It's hard to do everything without that money. If we're limited to just the funds we have, not much will get done."); Chris Minton, Larry Walker and Associates, on behalf of the Malibu Creek Watershed EWMP Group, Transcript, February 11, 2021 Board Meeting, at p. 83:8-14 ("One reason we asked for more time is that it does take money to build projects. Under no cashflow scenario is it possible for us to receive or borrow enough money in the next five years to cover the cost of all of our projects. Even if our EWMP cost estimates are off by 50-percent, we still won't receive enough funds."). See, also, references cited in footnote , *supra*.

and regulatory requirements and requires that the Permittees meet best practicable treatment or control.

i. The Order prohibits all non-stormwater discharges, with a few enumerated exceptions, through the MS4 to all receiving waters.

ii. As required by 40 CFR section 122.44(a), the Permittees must comply with the "maximum extent practicable" technology-based standard set forth in CWA section 402(p)(3)(B)(iii) and implement control measures under six program elements of a stormwater management program.

iii. As required by CWA section 402(p)(3)(B)(iii) and 40 CFR section 122.44(d)(1)(vii)(B), the Permittees must comply with applicable WQBELs based on TMDL WLAs established for waters in the Los Angeles Region.

iv. The Order also contains provisions to encourage, wherever feasible, retention of stormwater from the 85th percentile, 24-hour storm event. This stormwater retention design standard is based on robust engineering and technical evaluations to determine state-of-the-art design standards for post-construction site scale BMPs and catchment scale regional BMPs.[70]

v. The measures that control impacts from stormwater and non-stormwater discharges in the Order are typically effective across multiple pollutants. For example, retention basins, low-impact development controls, and low flow diversions avert stormwater and non-stormwater from reaching the receiving water at all—preventing degradation to the receiving water from all types of constituents. The Watershed Management Program provisions contained in the Order are designed to achieve water quality standards for those constituents that are impairing the receiving water, as well as to address other constituents of concern that may not be causing impairment as defined in CWA section 303(d) and State policy. The Watershed Management Programs developed pursuant to these provisions will likely result in improvements in levels of all pollutants, including those for which the receiving water may be high quality.

As a final backstop against degradation, the Order includes an extensive monitoring and reporting program, including concurrent monitoring of MS4 discharges at representative outfalls and in receiving waters for all pollutants of concern in the particular receiving water; monitoring during both wet weather and dry weather conditions; and analysis of toxicity in receiving waters and, if toxicity is observed, follow-up monitoring of MS4 discharges among other monitoring requirements. Monitoring data must be submitted semi-annually, and the Order also includes reopener provisions to allow modification of the Order as necessary to add preventative provisions if a threat of degradation is suspected. The monitoring and reporting requirements are sufficient to identify and address changes in water quality.[71]

[70] See, for example, State Water Board Order WQ 2000-11, the "LA SUSMP Order" and Concept Development: Design Storm For Water Quality in the Los Angeles Region (SCCWRP, Technical Report 520, October 2007).

[71] In *AGUA,* 210 Cal.App.4th 1255, the Court of Appeal held that a dairy general non-NPDES permit violated the State antidegradation policy in part because the permit relied on a prohibition of degradation to assert that the antidegradation policy was not implicated by the discharges without incorporating any additional

I. Anti-Backsliding Requirements

Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permits, with some exceptions where limitations may be relaxed. In general, the effluent limitations in the Order are at least as stringent as the effluent limitations in Order No. R4-2010-0108 (Ventura County), Order No. R4-2012-0175 (Los Angeles County), and Order No. R4-2014-0024 (Long Beach). However, certain of the effluent limitations in the Order are not identical to the effluent limitations in the previous MS4 permits because the Order implements revisions to TMDLs that occurred after these permits were adopted. Table F-21 lists changes to effluent limitations that increase allowable pollutant loadings or remove the effluent limitations entirely due to revised WLAs. While not all of the changes to these effluent limitations constitute backsliding, the rationale for each change is discussed below.

Table F-21. Changes to Effluent Limitations in Previous MS4 Permits

TMDL	Constituent	Waterbody	Existing Limitation	New Limitation
Revolon Slough and Beardsley Wash Trash TMDL	Trash	Revolon Slough and Beardsley Wash	0 Trash discharged from all land uses	0 Trash discharged from priority land uses
Malibu Creek Watershed Trash TMDL	Trash	Malibu Creek Watershed	0 Trash discharged from all land uses	0 Trash discharged from priority land uses
Ballona Creek Metals TMDL	Selenium	Ballona Creek	169 g/day	None
		Sepulveda Channel	76 g/day	
		Ballona Creek and tributaries	5 µg/L	
		Ballona Creek and tributaries	4.73×10^{-6} x daily storm volume (L) g/day	
	Copper	Ballona Creek	807.7 g/day	1,457.6 g/day

technical controls, or in lieu of such controls sufficient or appropriate monitoring to verify that in fact there was no ongoing degradation. The Order acknowledges that there may be some limited degradation of high quality waters due to stormwater and non-stormwater discharges, but imposes appropriate controls (e.g., through compliance with receiving water limitation provisions, discharge prohibitions, and WQBELs) to minimize any such degradation and further imposes extensive monitoring and reporting as described above to detect any degradation that may be inconsistent with the findings of the Order.

TMDL	Constituent	Waterbody	Existing Limitation	New Limitation
		Sepulveda Channel	365.6 g/day	540.6 g/day
		Ballona Creek and tributaries	24 µg/L	35.56 µg/L
Ballona Creek Metals TMDL	Lead	Ballona Creek	432.6 g/day	805.0 g/day
		Sepulveda Channel	196.1 g/day	298.7 g/day
		Ballona Creek and tributaries	13 µg/L	19.65 µg/L
		Ballona Creek and tributaries	5.58×10^{-5} x daily storm volume (L) g/day	7.265×10^{-5} x daily storm volume (L) g/day
	Zinc	Ballona Creek	10,273.1 g/day	18,302.1 g/day
		Sepulveda Channel	4,646.4 g/day	6,790.8 g/day
		Ballona Creek and tributaries	304 µg/L	446.55 µg/L
Ballona Creek Estuary Toxic Pollutants TMDL	Total PAHs	Ballona Creek Estuary	26,900 g/yr	None
	Total Chlordane		3.34 g/yr	8.69 g/yr
	Total DDTs		10.56 g/yr	12.70 g/yr
Marina del Rey Harbor Toxic Pollutants TMDL	Copper	Marina del Rey Harbor	2.01 kg/yr	2.26 kg/yr
	Lead		2.75 kg/yr	3.10 kg/yr
	Zinc		8.85 kg/yr	9.96 kg/yr
	Total Chlordane		0.0295 g/yr	0.0332 g/yr
	Total PCBs		1.34 g/yr	1.51 g/yr
Los Angeles River (LAR) Metals TMDL	Copper	LAR Reach 4	0.32 kg/day	1.27 kg/day
		LAR Reach 3	0.06 kg/day	0.24 kg/day
		LAR Reach 2	0.13 kg/day	0.52 kg/day
		LAR Reach 1	0.14 kg/day	0.56 kg/day
		Tujunga Wash	0.001 kg/day	0.008 kg/day
		Burbank Western Channel	0.15 kg/day	0.71 kg/day

TMDL	Constituent	Waterbody	Existing Limitation	New Limitation
		Verdugo Wash	0.18 kg/day	0.39 kg/day
		Rio Hondo Reach 1	0.01 kg/day	0.097 kg/day
		Compton Creek	0.04 kg/day	0.13 kg/day
		LAR Reach 4	26 µg/L	103 µg/L
		LAR Reach 3 above LAG WRP	23 µg/L	91 µg/L
		Verdugo Wash	23 µg/L	50 µg/L
		LAR Reach 3 below LAG WRP	26 µg/L	103 µg/L
		Burbank Western Channel (above WRP)	26 µg/L	124 µg/L
		Burbank Western Channel (below WRP)	19 µg/L	90 µg/L
		LAR Reach 2	22 µg/L	87 µg/L
		Arroyo Seco	22 µg/L	29 µg/L
		LAR Reach 1	23 µg/L	91 µg/L
		Compton Creek	19 µg/L	64 µg/L
		Rio Hondo Reach 1	13 µg/L	126 µg/L
		Los Angeles River and tributaries	1.5×10^{-8} x daily storm volume (L) – 9.5 g/day	6.0×10^{-8} x daily storm volume (L) – 9.5 g/day
	Lead	LAR Reach 6	0.33 kg/day	3.0 kg/day
		LAR Reach 5	0.03 kg/day	0.31 kg/day
		LAR Reach 4	0.12 kg/day	1.04 kg/day
		LAR Reach 3	0.03 kg/day	1.18 kg/day
		LAR Reach 2	0.07 kg/day	0.89 kg/day
		LAR Reach 1	0.07 kg/day	0.64 kg/day
		Bell Creek	0.04 kg/day	0.33 kg/day
		Tujunga Wash	0.0002 kg/day	0.0053 kg/day
		Burbank Western Channel	0.07 kg/day	0.61 kg/day
		Verdugo Wash	0.10 kg/day	0.82 kg/day
		Arroyo Seco	0.01 kg/day	0.06 kg/day
		Rio Hondo Reach 1	0.006 kg/day	0.045 kg/day
		Compton Creek	0.02 kg/day	0.16 kg/day
		LAR Reaches 5, 6 and Bell Creek	19 µg/L	170 µg/L

TMDL	Constituent	Waterbody	Existing Limitation	New Limitation
		LAR Reach 4	10 µg/L	83 µg/L
		LAR Reach 3 above LAG WRP	12 µg/L	102 µg/L
		Verdugo Wash	12 µg/L	102 µg/L
		LAR Reach 3 below LAG WRP	12 µg/L	100 µg/L
		Burbank Western Channel (above WRP)	14 µg/L	126 µg/L
		Burbank Western Channel (below WRP)	9.1 µg/L	751 µg/L
		LAR Reach 2	11 µg/L	94 µg/L
		Arroyo Seco	11 µg/L	94 µg/L
		LAR Reach 1	12 µg/L	102 µg/L
		Compton Creek	8.9 µg/L	73 µg/L
		Rio Hondo Reach 1	5.0 µg/L	37 µg/L
		Los Angeles River and tributaries	5.6×10^{-8} x daily storm volume (L) – 3.85 g/day	8.5×10^{-8} x daily storm volume (L) – 32 g/day
Los Angeles River Nitrogen Compounds and Related Effects TMDL	Ammonia 30-day Average	Los Angeles River Reach 5	1.6 mg/L	2.1 mg/L
				1.8 mg/L
		LAR Reach 4	1.6 mg/L	2.1 mg/L
		LAR Reach 3 above LAG WRP	1.6 mg/L	4.1 mg/L
				2.4 mg/L
		LAR Reach 3 below LAG WRP	2.4 mg/L	4.1 mg/L
		Rio Hondo Reach 3 above Whittier Narrows Dam	2.3 mg/L	4.3 mg/L
				2.8 mg/L
Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs and Metals TMDL	Lead	Termino Avenue Storm Drain	1,134,867.12 mg/yr	None
	Zinc		3,645,183.47 mg/yr	
	Total Chlordane		12.15 mg/yr	
	Dieldrin		0.49 mg/yr	
	Total PAHs		97,739.52 mg/yr	

TMDL	Constituent	Waterbody	Existing Limitation	New Limitation
	Total PCBs		551.64 mg/yr	
	Total DDTs		38.40 mg/yr	
Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs and Metals TMDL	Lead	Line M Storm Drain	68,116.09 mg/yr	None
	Zinc		218,788.29 mg/yr	
	Total Chlordane		0.73 mg/yr	
	Dieldrin		0.03 mg/yr	
	Total PAHs		5,866.44 mg/yr	
	Total PCBs		33.11 mg/yr	
	Total DDTs		2.30 mg/yr	
Middle Santa Ana River Watershed Bacterial Indicator TMDLs	Fecal Coliform	San Antonio Creek and Chino Creek	30-Day Geometric Mean (GM) less than 180/100 mL	None
			Not more than 10% exceed 360/100 mL during any 30-day period	
	E. coli	San Antonio Creek and Chino Creek	30-Day GM less than 113/100 mL	
			Not more than 10% exceed 212/100 mL during any 30-day period	
Upper Santa Clara River Chloride TMDL	Chloride	Reaches 4B and 5 (Ventura County only)	100 mg/L	None
U.S. EPA Established - Santa Clara River Reach 3	Chloride	Santa Clara River Reach 3	80 mg/L	100 mg/L

TMDL	Constituent	Waterbody	Existing Limitation	New Limitation
Chloride TMDL				
Santa Clara River Estuary and Reaches 3, 5, 6, & 7 Indicator Bacteria TMDL	*E. coli*	Santa Clara River Reaches 5, 6, and 7	0 allowable exceedances days at the outfall	Exceedance days now allowed at the outfall and are the same as the allowable exceedance days for receiving water

What follows is a discussion of (1) the general law pertaining to anti-backsliding and (2) why the anti-backsliding provisions in the CWA and federal regulations do not bar the changes in the effluent limitations appearing in the Order.

1. General Principles of Law Governing Anti-Backsliding Analysis for Effluent Limitations Established Pursuant to TMDLs

As noted above, the CWA contains both statutory anti-backsliding provisions in section 402(o) and regulatory anti-backsliding provisions in 40 C.F.R. section 122.44(l). The CWA's statutory prohibition against backsliding applies under a narrow set of criteria specified in section 402(o).[72] Section 402(o)(1) prohibits relaxing technology based effluent limitations originally established based on best professional judgment, when there is a newly revised effluent limitation guideline. This section is inapplicable here since none of the WQBELs in the Order are TBELs based on BPJ. Section 402(o)(1) also prohibits relaxing of WQBELs imposed pursuant to CWA sections 301(b)(1)(C) or 303(d) or (e). However, backsliding may be allowed for WQBELs such as the ones at issue here pursuant to one of six exceptions in CWA section 402(o)(2).[73] Two are relevant here:

[72] See SWRCB Order WQ 2015-0075 at pp. 19-23; NPDES Permit Writers' Handbook at §7.2.1.1 (U.S. EPA 2010).

[73] NPDES Permit Writers' Manual, § 7.2.1.3 (U.S. EPA 2010); CWA section 402(o). Relaxation of limits based on state water quality standards may not be based on section 402(o)(B)(ii), which allows TBELs based on BPJ to be relaxed if technical mistakes or mistaken interpretations of the law were made in issuing the permit under CWA section 402(a)(1)(B).

- material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation (CWA section 402(o)(A));
- information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance (the "New Information Exception") (402(o)(2)(B)(i));

Relaxation of WQBELs may also be allowed if such backsliding is consistent with the provisions in CWA section 303(d)(4). CWA section 303(d)(4) allows backsliding in the following circumstances. First, "CWA section 303(d)(4)(A) allows the establishment of a less stringent effluent limitation when the receiving water has been identified as not meeting applicable water quality standards (i.e., a *nonattainment water*)" if two conditions are met: (a), "the existing effluent limitation must have been based on a …TMDL or other …WLA established under CWA section 303;" and (b) "relaxation of the effluent limitation is only allowed if attainment of water quality standards will be ensured or the designated use not being attained is removed in accordance with the water quality standards regulations."[74]

Second, section 303(d)(4)(B), applies to "waters where the water quality equals or exceeds levels necessary to protect the designated use, or to otherwise meet applicable water quality standards (i.e., an *attainment water*). Under CWA section 303(d)(4)(B), a limitation based on a TMDL, WLA, other water quality standard, or any other permitting standard may only be relaxed where the action is consistent with state's antidegradation policy."[75]

Here, the WQBELs are imposed pursuant to section 303(d). For purposes of the following analysis, both sections 303(d)(4) and the exceptions in section 402(o)(2) are relevant because "U.S. EPA has consistently interpreted CWA section 402(o)(1) to allow relaxation of WQBELs and effluent limitations based on state standards if the relaxation is consistent with the provisions of CWA section 303(d)(4) or if … [certain] of the exceptions in CWA section 402(o)(2)… [apply]. The two provisions [303(d)(4) and 402(o)(2)] constitute independent exceptions to the prohibition against relaxation of effluent limitations. If either is met, relaxation is permissible."[76] As set forth below, the changes to numeric WQBELs in the Order either do not constitute backsliding or satisfy one or more of the foregoing exceptions to anti-backsliding as described below.

2. WQBEL Revisions That Do Not Constitute Backsliding

a. Marina del Rey Harbor Toxic Pollutants TMDL

The 2012 Permit for the County of Los Angeles incorporated the Marina del Rey Harbor Toxic Pollutants TMDL and included numeric WQBELs consistent with the assumptions and requirements of the WLAs in the TMDL as adopted in 2005. (Resolution No. 2005-012. (2005 TMDL.)). The TMDL was reconsidered in 2014 (Resolution R14-004 (2014 TMDL)). The Order updates the WQBELs for copper, lead, zinc, total chlordane, and total PCBs in Marina

[74] NPDES Permit Writers' Manual, § 7.2.1.3 (U.S. EPA 2010); CWA section 303(d)(4)(A).
[75] NPDES Permit Writers' Manual, § 7.2.1.3 (U.S. EPA 2010); CWA section 303(d)(4)(B).
[76] NPDES Permit Writers' Manual, § 7.2.1.3 (U.S. EPA 2010); CWA sections 303(d)(4) and 402(o)(2).

del Ray Harbor consistent with the assumptions and requirements in the 2014 TMDL.

In the 2005 TMDL, the geographical area in which the toxic impairments were found were confined to the back basins of the Marina del Rey Harbor. During the 2014 reconsideration, the Los Angeles Water Board evaluated data collected since adoption of the TMDL and found that the toxic impairments were also present in several of the front basins.[77] Therefore, the 2014 TMDL revised the geographic area addressed by the TMDL to include the whole harbor and updated the percentage of land area covered by the MS4 permittees to account for areas draining into the front basins.[78] The 2014 TMDL adjusted the loading capacity and waste load allocations based on the revised geographic area.

The WQBELs in the Order are equal to the adjusted waste load allocations for copper, lead, zinc, total chlordane, and total PCBs in the 2014 TMDL. Because the increased geographic area resulted in an increased loading capacity of sediment bound pollutants discharged to Marina del Rey Harbor through stormwater, the WQBELs assigned to responsible MS4 permittees in the Order allow increased loadings of these constituents.

However, even though increased loadings are allowed, the WQBELs are not less stringent than before. In the 2014 TMDL analysis, the Los Angeles Water Board relied on the same the linkage analysis as the 2005 TMDL.[79] Similarly, the numeric sediment targets used to calculate the loading capacity and waste load allocations remained the same as the 2005 TMDL. The increased allowable loading is a result of adding the expanded geographic area to the analysis and its associated TSS loading. The increased allowable loading is spread out over the expanded geographic area. Therefore, while the WQBELs for copper, lead, zinc, total chlordane and total PCBs have increased, they are still as protective as the WQBELs in the 2012 Los Angeles County Permit. Even if anti-backsliding applies, the imposition of new WQBELs for copper, lead, zinc, total chlordane and total PCBs satisfies the anti-backsliding exception in CWA section 303(d)(4)(A) because the revisions in the 2014 TMDL will assure attainment of water quality standards. Indeed, TMDLs are developed for the purpose of specifying requirements for the achievement of water quality standards in impaired water bodies.[80] The additional loading of sediment-bound pollutants was solely to account for the expanded scope of the TMDL and no changes were made to the implementation schedule for the back basins.

b. Ballona Creek Metals TMDL

The 2012 Los Angeles County Permit incorporated numeric WQBELs consistent with the assumptions and requirements of the Ballona Creek Metals TMDL (Resolution No. R07-015), which became effective in 2008. In 2013, the Los Angeles Water Board reconsidered and revised this TMDL (Resolution No. R13-010). The revised TMDL became effective in 2015. The

[77] (Staff Report p. 6).
[78] (Staff Report p. 6 and 24)
[79] (Staff Report p. 8).
[80] (33 U.S.C. 1313(d); 40 C.F.R. §130.7.)

Order updates the WQBELs consistent with the assumptions and requirements of the revised Ballona Creek TMDL. Specifically:

- the final mass-based and concentration-based WQBELs for copper, lead and zinc allow increased loadings during dry weather; and
- the final mass-based WQBEL for lead allows increased loading during wet weather.

Although these revisions to the WQBELs allow increased loadings of copper, lead, and zinc, these changes do not constitute backsliding because the revised TMDL on which they are based used site-specific information to recalculate the WLAs, which did not change the intended level of protection. During the 2013 reconsideration, the Los Angeles Water Board evaluated additional, more recent flow data, hardness data, and dissolved to total metals ratios. These robust data sets resulted in adjustments to flow rates, hardness and conversion factors that compelled revisions to the dry- and wet-weather numeric targets. The dry-weather numeric targets for copper, lead and zinc increased, which in turn increased the dry-weather WLAs for copper, lead and zinc. Likewise, the wet-weather numeric target for lead increased, which increased the wet-weather WLA for lead.[81] The WQBELs in the Order are equal to the revised WLAs.

Even if anti-backsliding applies, each of these changes meets the anti-backsliding exception set forth in CWA section 303(d)(4)(A). Section 303(d)(4)(A) of the CWA allows relaxation of effluent limits in non-attainment waters if "the cumulative effect of all such revised effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard, or (ii) the designated use which is not being attained is removed in accordance with regulations" established under the CWA. These revisions were made in accordance with the revised WLAs in the revised TMDL, which will assure the attainment of water quality standards for copper, lead and zinc in dry weather, and for lead in wet weather. Attainment of these water quality standards will occur within a reasonable time frame, set forth in the implementation schedule.

c. Los Angeles River Nitrogen Compounds and Related Effects TMDL

The 2012 Permit for the County of Los Angeles incorporated WQBELs consistent with the assumptions and requirements of the Los Angeles River (LAR) Nitrogen Compounds and Related Effects TMDL (LAR Nitrogen TMDL) (Resolution NO. R03-009).[82] In 2012, the Los Angeles Water Board reconsidered and revised the LAR Nitrogen TMDL to incorporate site-specific, seasonal objectives for ammonia, expressed as temperature- and pH-dependent equations for Reaches 3-5 of the river and Rio Hondo Reach 3. (Resolution No. 12-010). These revisions became effective on August 7, 2014. The Order therefore updates the numeric WQBELs consistent with the assumption and requirements of the 2012 revisions of the LAR Nitrogen

[81] The wet-weather numeric targets for copper and zinc decreased which resulted in a decrease of the wet-weather WLAs for copper and zinc. (Section 3.1.5.1, pp. 15-16 of the Staff Report.)

[82] The implementation plan for LAR Nitrogen TMDL was amended by Resolution No. 03-016 to align certain interim ammonia WLAs with planned construction projects. The TMDL remained unchanged in all other respects.

TMDL. The updated WQBELs were calculated using three years of site-specific temperature and pH data (1/1/2018 - 12/31/2020) consistent with the WLA equations and implementation provisions in the 2012 revised TMDL.

The original LAR Nitrogen TMDL included numeric targets and WLAs for ammonia based on U.S. EPA's "1999 Update of Ambient Water Quality Criteria" for Ammonia. EPA's updated ammonia criteria included thirty-day average water quality objectives that are a function of temperature and pH, which can affect ammonia toxicity to fish. The objectives are thus expressed as equations. There are separate equations for waterbodies with and without early life stages of fish, which are more sensitive to ammonia. The more stringent equation applies to waterbodies with early life stages of fish. The 1999 Update also allows for the development of a water effects ratio (WER) to adjust the equation. WERs account for site-specific conditions that also affect ammonia toxicity. In the absence of site-specific information, a default WER of 1.0 is used. At the time of the LAR Nitrogen TMDL adoption in 2003, the Basin Plan did not specifically identify, which reaches in the Los Angeles Region, where early life stages of fish were present or absent. As such, the numeric targets and WLAs for ammonia in the original LAR Nitrogen TMDL assumed that early life stages of fish were absent in the Los Angeles River watershed.[83] Additionally, the numeric targets and WLAs for ammonia in the TMDL were calculated using the default WER value of "1" because a WER study was still under development.

In 2005 and 2007, the Los Angeles Water Board adopted seasonal, site-specific ammonia objectives for the San Gabriel, Los Angeles, and Santa Clara River Watersheds.[84] These objectives became effective on April 5, 2007 and April 23, 2009, respectively, changing the previous 30-day average ammonia objective in Chapter 3 of the Basin Plan for a subset of inland surface waters, including Reaches 3-5 of the LAR and Reach 3 of the Rio Hondo, upstream of Whittier Narrows Dam. The new site-specific objectives incorporated WERs for these reaches and defined seasonal periods of early life stages of fish presence and absence in these reaches.[85]

In 2012, the LAR Nitrogen TMDL was revised to conform the numeric targets and WLAs with the updated seasonal, site-specific objectives for Los Angeles River Reaches 3-5, and Rio Hondo Reach 3, upstream of Whittier Narrows Dam. Specifically, the TMDL's thirty-day average numeric targets and associated WLAs for Los Angeles River Reaches 3-5, and Rio Hondo Reach 3 were changed to the site-specific equations for "early life stages (of fish) present" and "early life stages (of fish) absent" periods. These equations incorporate a site-specific WER value and are temperature and pH dependent. The TMDL notes that it would be consistent with the assumptions

[83] TMDL for Nitrogen Compounds and Related Effects, Los Angeles River and Tributaries, Staff report (May 2, 2003; Revised July 10 2003) p. 37.

[84] Resolution R07-005

[85] "The SSOs are based on the results of a WER study completed by the City of Los Angeles, County Sanitation Districts of Los Angeles County, and the City of Burbank. These SSOs, in addition to ammonia SSOs for the San Gabriel and Santa Clara River watersheds, were previously incorporated into the Basin Plan by resolution 2007-005, adopted by the Regional Board on June 7, 2007. By adopting the SSOs into the Basin Plan, they are now the applicable ammonia water quality objectives for the rivers and reaches to which they apply." (December 6, 2012, Final Staff Report p. 3.) See also Basin Plan page 3-14 and 3-15.

and requirements of the TMDL to translate the WLA into effluent limitations by using the past three years of temperature and pH data.[86]

The Order calculates the 30-day average ammonia WQBELs in the LAR watershed using the site-specific, seasonal objectives for Los Angeles River Reaches 3-5, and Rio Hondo Reach 3, upstream of Whittier Narrows Dam. Three years of temperature and pH data was obtained from receiving water monitoring from the Donald C. Tillman Water Reclamation Plant (WRP), the Los Angeles-Glendale WRP, and the Whittier Narrows WRP. Based on these calculations the 30-day effluent limitations for total ammonia when "early life stages present" and when "early life stages absent" increased in the Los Angeles River Reaches 3-5 and Rio Hondo Reach 3. Although the revisions to the ammonia WQBELs in the Order allow increased loadings of ammonia, these changes do not constitute backsliding because the updated WQBELs are based on site-specific information that achieve the same intended level of protection. The revised WLAs are still based on the same ammonia criteria equations. The WER term in the equations has merely been updated to reflect site-specific conditions and recent data have been inserted into the equations to calculate the WQBELs.

But even if the changes described above were subject to CWA section 402(o)'s anti-backsliding provisions, the revisions to these WQBELs comply with CWA section 304(d)(4)(A). Section 303(d)(4)(A) of the CWA allows relaxation of effluent limits in non-attainment waters if "the cumulative effect of all such revised effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard, or (ii) the designated use which is not being attained is removed in accordance with regulations" established under the CWA. Here, the water quality objective itself was adjusted, and the revised TMDL reflects this. Any changes to WQBELs are recalculated as directed in the TMDL. Compliance with the WQBELs will therefore ensure the attainment of the site-specific objectives for ammonia in these four reaches of surface waters, within a reasonable time frame set forth in the implementation schedule.

d. Los Angeles River and Tributaries Metals TMDL

The 2012 Permit for the County of Los Angeles incorporated WQBELs consistent with the assumptions and requirements of the Los Angeles River and Tributaries Metals (LAR Metals TMDL).[87] In 2015, the Los Angeles Water Board reconsidered and revised the LAR Metals TMDL to incorporate site-specific water-effect ratios for calculating the copper water quality objectives and site-specific water quality objectives for lead for a number of reaches in the Los Angeles River watershed. (Resolution No. 15-004). The site-specific copper WERs and lead water quality objectives and revisions to the TMDL became effective on December 12, 2016. U.S. EPA withdrew the previously effective water quality criteria for lead from the California Toxics Rule (CTR) for the portions of the Los Angeles River watershed subject to the TMDL, effective November 15, 2018. The Order updates the WQBELs for copper and

[86] Basin Plan p. 7-91.

[87] The Los Angeles Water Board approved the LAR Metals TMDL in 2007 (Resolution No. R2007-0014). A TMDL revision applicable to POTWs was adopted in 2010 (R10-003). The revised TMDL became effective on November 3, 2011.

lead in the reaches identified in Table F-21 consistent with the assumptions and requirements of the revised LAR Metals TMDL. Although the revisions to these WQBELs allow increased loadings of copper and lead, the increased loadings do not constitute backsliding because the WQBELs provide the same level of intended protection and are no less stringent as described below.

i. Copper

The numeric targets and WLAs for the LAR Metals TMDL are based on the water quality objectives for copper in the CTR. The CTR water quality objectives for copper are expressed as equations, which include a term called a water effect ratio or WER. The WER reflects the effect that local site water constituents have on the toxicity of copper. The CTR equation includes a default WER of 1.0, which assumes that metals are equally toxic in local site water as they are in lab water. The WER may be adjusted using a properly conducted WER study. A WER greater than 1.0 means the local site water reduces the toxicity of copper and a WER less than 1.0 means that local site water increases the toxicity of copper. The numeric targets and WLAs for copper in the LAR Metals TMDL were based on a default WER value of 1.0.

The LAR Metals TMDL was revised in 2015 based on the results of a properly conducted WER study for Reaches 1, 2, 3, and 4 of the Los Angeles River, Compton Creek, Rio Hondo, Arroyo Seco, Verdugo Wash, Burbank Western Channel and Tujunga Wash.[88] The TMDL recalculated the numeric targets and WLAs for copper to reflect site-specific WERs for copper, as determined by the study.

The WQBELs in the Order are equal to the WLAs for copper in the revised LAR Metals TMDL. Incorporating WQBELs equal to the revised WLAs does not change the intended level of protection because the revised WLAs are still based on the same CTR equation for copper -- only the WER term in the equation has been updated to reflect site-specific conditions. The updated WQBELs merely reflect the fact copper is less toxic to aquatic life in the Los Angeles River receiving waters than it is in lab water.

ii. Lead

The numeric targets and WLAs for lead in the LAR Metals TMDL are based on the water quality objectives for lead in the CTR, which are based on a national toxicity dataset. U.S. EPA allows for the derivation of site-specific objectives using the Recalculation Procedure.[89] The Recalculation Procedure provides a method for adjusting the national dataset based on more recent toxicity studies.

The LAR Metals TMDL was revised in 2015 to incorporate recalculated lead water quality objectives based on the results of a special study that followed the Recalculation Procedure.[90] The study recalculated the acute

[88] Final Report: Copper Water-Effect Ratio Study to Support Implementation of the Los Angeles River and Tributaries Metals TMDL (2014)
[89] USEPA Water Quality Standards Handbook: Second Edition (1994)
[90] Final Lead Recalculation Report to Support Implementation of the Los Angeles River and Tributaries Metals TMDL (2014)

and chronic lead objectives for portions of the Los Angeles River using an expanded nation-wide dataset provided by U.S. EPA. The recalculated objectives were compared to toxicity data for species of interest in the Los Angeles River Watershed to ensure the objectives were protective of local species. The TMDL updated the numeric targets and WLAs based on the recalculated lead objectives.[91] The resulting numeric targets and WLAs for lead were greater than the numeric targets and WLAs in the original LAR Metals TMDL. The WQBELs in the Order are based on the updated WLAs. Although the WQBELs for lead increased from the 2012 Los Angeles MS4 Permit, these effluent limitations are not less stringent. These effluent limitations are based on site-specific numeric targets and WLAs, which were based on an updated toxicity dataset and the recalculation of the water quality objectives following U.S. EPA guidelines. The study showed that the recalculated objectives for lead are protective of aquatic life, and the U.S. Fish and Wildlife Service agreed that the objectives would not likely adversely affect any listed threatened or endangered species or their critical habitat.[92]

Conclusion. Even if anti-backsliding applies to the revised copper and lead WQBELs discussed above, each of these changes meets the anti-backsliding exception set forth in CWA section 303(d)(4)(A). Section 303(d)(4)(A) of the CWA allows relaxation of effluent limits in non-attainment waters if "the cumulative effect of all such revised effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard, or (ii) the designated use which is not being attained is removed in accordance with regulations" established under the CWA. These revisions were made in accordance with the revised WLAs in the revised TMDL, which will ensure the attainment of water quality standards for copper and lead. Attainment of these water quality standards will occur within a reasonable time frame set forth in the implementation schedule.

e. Middle Santa Ana River Watershed Bacterial Indicator TMDL

The Order removes the Middle Santa Ana River Watershed Bacterial Indicator TMDL (MSAR Bacteria TMDL) WQBELs applicable to the cities of Claremont's and Pomona's MS4. Claremont and Pomona are subject to regulations by the Los Angeles Water Board and Santa Ana Water Board. To streamline regulatory requirements, Water Code section 13228 authorizes persons regulated by more than one regional water board to request designation of a single regulator. In 2013, the Los Angeles Water Board and the Santa Ana Water Board agreed to designate the Santa Ana Water Board as the single regulator of discharges of bacteria by Claremont and Pomona through their MS4s to the receiving waters within the Middle Santa Ana River Watershed.[93] On September 13, 2013, the Santa Ana Water Board adopted Order No. R8-2013-0043 (NPDES No. CA8000410) to implement the MSAR Bacteria TMDL. Accordingly, the WQBELs implementing the MSAR Bacteria

[91] Section 4.2, pp. 8-9 of the Staff Report.
[92] 83 Fed. Reg. 52166-52168 (Oct. 16, 2018).
[93] May 31, 2013 letter and memorandum of understanding by and between Los Angeles Water Board and Santa Ana Water Board (signed by Samuel Unger, Executive Officer, Los Angeles Water Board, and Kurt Berchtold, Executive Officer, Santa Ana Water Board).

TMDL are removed from the Order. Because the cities of Pomona and Claremont are still subject to these WQBELs through another permit, no backsliding has occurred.

3. WQBEL Revisions that Fall Within an Exception to Backsliding

a. Ballona Creek Metals TMDL

As previously discussed, the Ballona Creek Metals TMDL was reconsidered and revised in 2013. In addition to the changes to copper, lead and zinc set forth above, the revised 2013 Ballona Creek Metals TMDL removed WLAs for selenium because the receiving water is no longer considered impaired for selenium. In making this determination, the Los Angeles Water Board considered recent selenium data as well the data considered during the adoption of the Ballona Creek Metals TMDL in 2008. These data were evaluated pursuant to the State Water Board's Water Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy), which uses a weight of the evidence approach to evaluate whether to place waters on, or remove waters from, the 303(d) List. The reexamined data satisfied the delisting requirements in Table 4.1 of the Listing Policy and the Los Angeles Water Board approved removing selenium from the Ballona Creek Metals TMDL.

The Order therefore removes the selenium WQBELs for Ballona Creek Reach 2. Removal of the selenium WQBELs for Ballona Creek Reach 2 in the Order satisfies the anti-backsliding exception set forth in CWA section 303(d)(4)(B) because this reach is no longer impaired for selenium and MS4 discharges will not result in degradation. With the reconsideration of the TMDL, the Los Angeles Water Board determined that existing in stream beneficial uses and the level of water quality necessary to protect the beneficial uses would be maintained if selenium WLAs, and associated WQBELs, were removed. Even though there might be some discharges of selenium to Ballona Creek, any such discharges will be limited or minor with respect to the assimilative capacity of Ballona Creek and will not result in any long-term deleterious effects on water quality as shown in the water quality data assessment for the TMDL revision. (See, also, discussion in Fact Sheet, Part III.H, supra.) Furthermore, MS4 dischargers are still required to comply with receiving water limitations in Part V of the Order and are required to monitor for selenium in the Order. Continued monitoring for selenium ensures that any adverse changes in water quality with respect to selenium will be caught and corrected.

b. Ballona Creek Estuary Toxics TMDL

The 2012 Los Angeles County Permit incorporated numeric WQBELs consistent with the assumptions and requirements of the Ballona Creek Toxics TMDL (Resolution No. R05-008). In 2013, the Los Angeles Water Board reconsidered and revised this TMDL (Resolution No. R13-010). The revised TMDL became effective in 2015. The Order updates the numeric WQBELs consistent with the assumptions and requirements of the revised Ballona Creek Toxics TMDL. Specifically:

- the WQBELs for sediment for Chlordane and total DDTs were increased and
- the WQBELs for total PAHs were removed.

The rationale for these revisions is as follows:

i. Chlordane and DDTs

The numeric targets and WLAs for metals and organic pollutants in the Ballona Creek Estuary Toxics TMDL were originally based on National Oceanic and Atmospheric Administration's (NOAA) sediment quality guidelines. In 2009, the State Water Board adopted its Water Quality Control Plan for Enclosed Bays & Estuaries – Part 1 Sediment Quality (Sediment Quality Plan). The Sediment Quality Plan includes (1) a narrative sediment objective to protect benthic communities, and (2) a narrative sediment objective to protect human health. The Sediment Quality Plan established a methodology based on integrating multiple lines of evidence (MLOE) to determine whether the narrative sediment objective for benthic communities is achieved. This assessment is sometimes called a "direct effects" assessment for the direct effect of contaminants on benthic organisms and does not include an assessment of the "indirect effects" of contaminants transferring up the food chain to fish, which can impact human health.[94] The Sediment Quality Plan directed the State and Regional Water Boards to implement the narrative sediment objective to protect human health on a case-by-case basis, based upon a human health risk assessment.[95]

During the reconsideration, the Los Angeles Water Board evaluated Ballona Creek Estuary using the MLOE approach in the Sediment Quality Plan. This evaluation indicated that at least one station in the Ballona Creek Estuary exceeded the sediment objectives for benthic communities.[96] The Los Angeles Water Board also considered the results of a Toxicity Identification Evaluation study conducted in 2010 (2010 TIE). This study found that the principal source of sediment toxicity in the Ballona Creek Estuary was pyrethroids. Based on these studies, the Los Angeles Water Board determined that total DDTs and chlordane were not causing "direct effect" impairments to the benthic community.[97] Nonetheless, monitoring data collected as part of the TMDL coordinated monitoring plan indicated that exceedances of total DDTs and chlordane targets in sediment were ongoing.[98] Total DDTs were present in limited fish sampling.[99] And in 2009, Ballona Creek was identified a fish consumption "red zone," with 5 fish listed as "do not eat" and 14 fish with recommended consumption limitations.[100] The Los Angeles Water Board therefore conducted a human health risk assessment consistent with the Sediment Quality Plan to implement the narrative sediment objective to protect human health.[101]

[94] Staff report 19-20.
[95] https://www.waterboards.ca.gov/water_issues/programs/bptcp/docs/sediment/sed_qlty_part1.pdf at p. 13.
[96] Staff report p. 22.
[97] See staff report p. 23.
[98] Staff report pp. 3 and 23.
[99] Ibid.
[100] Staff report pp. 24-25
[101] https://www.waterboards.ca.gov/water_issues/programs/bptcp/docs/sediment/sed_qlty_part1.pdf at p. 13.

The Sediment Quality Plan directed regional water boards to consider any applicable and relevant information, including but not limited to the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) policies for fish consumption and risk assessment. In 2008, OEHHA developed Fish Contaminant Goals for Chlordane and total DDTs.[102] During the reconsideration of the Ballona Creek Toxics TMDL, the Los Angeles Water Board replaced the direct effects numeric targets for chlordane and total DDTs in sediment with indirect effects numeric targets for chlordane and total DDTs in sediment using OEHHA's Fish Contaminant Goals. The new numeric targets and resulting WLAs for chlordane and total DDTs increased.[103] The WQBELs for chlordane and DDTs in the Order have been adjusted accordingly.

The changes described above meet the anti-backsliding exception set forth in CWA section 303(d)(4)(A) because any relaxation of the WQBELs for chlordane and total DDTs in the Order was made as a result of the reconsidered TMDL. Although the waters remain impaired, the changes to the WQBELs are consistent with the assumptions and requirements of the WLAs in the revised TMDL. The revised TMDL's limits are designed to attain water quality standards, and the WQBELs ensure this will happen within a reasonable time frame.

ii. Total PAHs

In addition to the foregoing, the numeric targets and WLAs for total PAHs were removed from the Ballona Creek Estuary Toxics TMDL in the 2013 reconsideration. Removal was based on application of criteria in the Listing Policy to sediment samples collected since the adoption of the TMDL in 2005. The reexamined data satisfied the delisting requirements in Table 4.1 of the Listing Policy and the Los Angeles Water Board approved removing total PAHs from the Ballona Creek Toxics TMDL.

Removal of total PAHs from the Order satisfies the exception to anti-backsliding in CWA section 303(d)(4)(B). The waters here are no longer impaired for total PAHs, and MS4 discharges will not result in degradation. With the reconsideration of the TMDL, the Los Angeles Water Board determined that existing in stream beneficial uses and the level of water quality necessary to protect the beneficial uses would be maintained if total PAH WLAs, and associated WQBELs, were removed. There have been no exceedances in any of the samples collected and analyzed, but even if there might be some discharges, any such discharges will be limited or minor with respect to the assimilative capacity of Ballona Creek. (See, also, discussion in Fact Sheet, Part III.H, supra.) Furthermore, MS4 dischargers are still required to comply with receiving water limitations in Part V of the Order and are required to monitor for total PAHs in the Order. Continued monitoring for total PAHs

[102] Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene" (FCGs), at https://oehha.ca.gov/fish/report/fish-contaminant-goals-and-advisory-tissue-levels-evaluating-methylmercury-chlordane.

[103] The numeric targets, WLA, and LAs for total PCBs are more stringent after the revision to the TMDL.

in sediment will ensure that any adverse changes in water quality with respect to total PAHs in sediment will be caught and corrected.

c. Colorado Lagoon TMDL

The 2012 Los Angeles County Permit incorporated WQBELs for lead, zinc, total chlordane, dieldrin, total PAHs, total PCBs, and Total DDTs consistent with the assumptions and requirements of the Colorado Lagoon TMDL. The Order removes these WQBELs for two discharge points: Termino Avenue and Line M because these two storm drains were physically rerouted such that they no longer discharge into the Colorado Lagoon. These alterations, which were structural changes to the MS4 itself, are "material and substantial alterations or additions to the permitted facility" and justify the application of a less stringent effluent limitation under CWA section 402(o)(2)(A).

d. Revolon Slough and Beardsley Wash Trash TMDL

The 2010 Ventura County Permit incorporated WQBELs of zero trash consistent with the assumptions and requirements of the Revolon Slough and Beardsley Wash Trash TMDL (Resolution No. 2007-007; Revolon/Beardsley Trash TMDL). The Revolon/Beardsley Trash TMDL required MS4 responsible entities to address discharges of trash from ***all*** land uses with full capture systems, or other lawful manner.[104] The Order revises the WQBELs to apply to discharges from priority land uses only. The rationale for this revision is as follows.

In 2015, the State Water Board adopted the Trash Amendments. As discussed in Part IV.B of this Fact Sheet, the Trash Amendments established a prohibition on the discharge of trash in all Waters of the State. Implementation of this discharge prohibition focuses MS4 compliance efforts on high trash generation areas or "priority land uses." The Trash Amendments do not apply to waterbodies with a TMDL in effect prior to the effective date of the Trash Amendments (December 2, 2015). However, the State Water Board directed the Los Angeles Water Board to reconsider whether its existing trash TMDLs could be aligned with the Trash Amendments to focus on priority land use areas only.

In 2018, the Los Angeles Water Board reconsidered the Revolon/Beardsley Trash TMDL in light of the statewide Trash Amendments. The revised TMDL became effective on May 6, 2020. The Los Angeles Water Board concluded that a focus on priority land use areas would attain the numeric target of zero trash in the Revolon Slough/Beardsley subwatershed as long as nonpoint source responsible entities implemented Minimum Frequency of Assessment and Collection Program (MFAC) programs in the impaired waters downstream to address any potential trash discharged from nonpriority land uses. The TMDL revised the implementation provisions for the WLAs to require full capture systems for storm drains that capture runoff from priority land uses. This amounts to a reduction in the amount of full capture systems installed in the subwatershed. The Order incorporates WQBELs consistent with the revised implementation provisions for the TMDL.

[104] See page 3 of Attachment A to Resolution No. 2007-007 (Revolon Slough and Beardsley Wash Trash TMDL).

The changes described above meet the anti-backsliding exception set forth in CWA section 303(d)(4)(A) because any relaxation of the WQBELs in the Order for trash are a result of the reconsidered TMDL. Although the waters remain impaired, the revised TMDL determined that implementation of full capture systems to address priority land uses only will attain the numeric target of zero trash for Revolon Slough and Beardsley Slough provided that nonpoint source responsible entities implement MFAC programs in the impaired waters downstream.[105] Changes to the WQBELs consistent with the assumptions and requirements of the revised TMDL will ensure attainment of the water quality standard and is therefore permissible consistent CWA section 303(d)(4)(a).

e. Malibu Creek Watershed Trash TMDL

The 2012 Los Angeles County Permit incorporated WQBELs of zero trash consistent with the assumptions and requirements of the Malibu Creek Watershed Trash TMDL (Resolution No. 2008-007; Malibu Trash TMDL). The Malibu Trash TMDL required MS4 responsible entities to address discharges of trash from ***all*** land uses with full capture systems, or other lawful manner.[106] The Order revises the WQBELs to apply to discharges from priority land uses only. The rationale for this revision is as follows.

The Malibu Trash TMDL was revised at the same time and in the same manner as the Revolon Slough/Beardsley Wash TMDL discussed above (Resolution No. R4-2018-006). The revised TMDL became effective on May 6, 2020. Similar to the Revolon Slough/Beardsley Wash TMDL, the Los Angeles Water Board concluded it was appropriate to align the Malibu Trash TMDL with the Statewide Trash Amendments because installation of full capture devices in the priority land use areas would attain the numeric target of zero trash in the Malibu Creek watershed as long as nonpoint source responsible entities implement MFAC programs are in place in the impaired waters downstream to address any potential trash discharged from nonpriority land uses.[107] The WQBELs of zero trash in the Order are limited to discharges from “priority land use areas” to Malibu Creek, Malibu Lagoon, Malibou Lake, Medea Creek (Reach 1 and Reach 2), Lindero Creek (Reach 1 and Reach 2), Lake Lindero, and Las Virgenes Creek of the Malibu Creek Watershed, instead of the whole Malibu Creek Watershed.

The changes described above meet the anti-backsliding exception set forth in CWA section 303(d)(4)(A) because any relaxation of the WQBELs in the Order for trash are a result of the reconsidered TMDL. Although the waters remain impaired, the revised TMDL determined that implementation full capture systems to address priority land uses only will attain the numeric target of zero trash for Malibu Creek Watershed provided that nonpoint source responsible entities implement MFAC programs in the impaired waters downstream.[108] Changes to the WQBELs consistent with the assumptions and requirements of the revised TMDL will ensure attainment of the water quality standard and is therefore permissible consistent CWA section 303(d)(4)(a).

[105] Page 23 of the Staff Report.
[106] See page 3 of Attachment A to Resolution No. 2007-007 (Revolon Slough and Beardsley Wash Trash TMDL).
[107] Page 44 of the Staff Report.
[108] Page 44 of the Staff Report.

f. Upper Santa Clara River Chloride TMDL

The Order relieves Ventura County Permittees from compliance with the chloride limits in the Upper Santa Clara River Chloride TMDL for Reaches 4B and 5 of the Santa Clara River, because the MS4s are not discharging into those Reaches. Removal is consistent with both CWA section 303(d)(4)(A)(i) and section 402(o)(B)(i).

The TMDL for Chloride in the Upper Santa Clara River was originally adopted in 2003 and went into effect in 2005. It was revised in 2008 and 2014, and the revisions went into effect in 2009 and 2015, respectively.

In drafting the Order, the Los Angeles Water Board examined the evidence and found that Ventura County Permittees have no MS4s that discharge into the chloride impaired reaches of the Upper Santa Clara River. Reach 5 falls partially within Ventura County, but Ventura County Permittees do not have any MS4 discharges to the portion of Reach 5 that falls within Ventura County.[109] Therefore, the Order assigns chloride WQBELs for discharges to Reach 5 exclusively to Los Angeles County Permittees draining to Reach 5. For Reach 4B, although it is completely within Ventura County[110], there are no MS4 discharges from Ventura County Permittees to Santa Clara River Reach 4B. Removal of the limits for Ventura County MS4 Facilities in the Order is therefore consistent with CWA section 303(d)(4) because removal will have no impact on the cumulative impact or effect of chloride loading in the Upper Santa Clara River. Put differently, the "cumulative effect" of this revised WLA for Ventura County Permittees will assure attainment of the water quality objectives, since they are not discharging through their MS4s to the Upper Santa Clara River.

g. U.S. EPA Established - Santa Clara River Reach 3 Chloride TMDL

The 2010 Ventura County MS4 Permit has a WQBEL of 80 mg/L for discharges of chloride to Santa Clara River Reach 3. The Order revises the WQBEL from 80 mg/L to 100 mg/L. Revisions to WQBELs in attainment waters are permitted provided the change is consistent with the antidegradation policy pursuant to CWA section 303(d)(4)(B). The revision of the chloride WQBEL is consistent with the antidegradation policies for the following reasons:

The Santa Clara River Reach 3 Chloride TMDL intended to assign a WLA for chloride equal to the applicable water quality objective in the Basin Plan. At the time this TMDL was established on June 18, 2003, the Basin Plan Objective for Santa Clara River Reach 3 was 80 mg/L for chloride. In 2004, the Los Angeles Water Board changed the water quality objective for Santa Clara River Reach 3 from 80 mg/L to 100 mg/L (Resolution R03-015, effective on 8/4/2004). The TMDL on page 20, Section 10: Implementation Recommendations, states the following: "EPA understands that the State is in the process of reviewing and revising upward the numeric water quality objective for chloride in Santa Clara River Reach 3. Based on our review of the data used to support the State's listing of Reach 3 for chlorides on the 2002 California Section 303(d) list, it appears possible that this Reach would

[109] Ventura County GIS data and MS4 drainage area maps (July 15, 2016)
[110] Ventura County GIS data and MS4 drainage area maps (July 15, 2016)

not exceed water quality standards if the objective is raised to 100 mg/L as proposed by the State. EPA believes it would be reasonable for the State to defer full implementation of the TMDL for Reach 3 until this objective change is completed. If the State does not complete its proposed action to raise the chloride objective for Reach 3, the State should determine the appropriate means of implementing the TMDL through its NPDES permitting decisions and other programs to address nonpoint sources for which allocations are included in this TMDL". The change to the Water Quality Objective was inadvertently not considered during the issuance of the 2010 Ventura County MS4 Permit. The Santa Clara River Reach 3 WQBEL of 80 mg/L in the 2010 Ventura County MS4 Permit has been revised to 100 mg/L in the Order to align it with the water quality objective in the Basin Plan. This is consistent with the assumptions and requirements of the TMDL to implement the applicable water quality objective, which is currently being met (see Part VI.F.2.b of this Fact Sheet). Additionally, because compliance with the revised WQBEL still requires compliance with the applicable water quality objective for this reach it will not result in degradation and is consistent with the antidegradation policies. Therefore, this revision is permissible consistent CWA section 303(d)(4)(B).

h. Santa Clara River Estuary and Reaches 3, 5, 6 and 7 Indicator Bacteria TMDL

The 2012 Los Angeles County MS4 Permit incorporated WQBELs for *E. coli* for MS4 discharges to Santa Clara River Reaches 5, 6, and 7. The WQBELs were applied at the outfalls and Permittees were not allowed any exceedance days. For Los Angeles County Permittees, this Order incorporates the following exceedance days at the outfall for the daily maximum single sample objectives:

Constituent	**Daily Maximum Single Sample Objectives for Santa Clara River Reaches 5 and above (MPN or cfu)**
E. coli	235/100 mL

Location	**Time Period**	**Interim Annual Allowable Exceedance Days of the Single Sample Objectives**		
		Daily Sampling	**Weekly Sampling**	**3 Wet and 2 Dry weather events**
Santa Clara River Reaches 5 and above	Dry Weather (November 1 to October 31)	17	3	1
	Wet Weather (November 1 to October 31)	61	9	1

Location	Time Period	Final Annual Allowable Exceedance Days of the Single Sample Objectives	
		Daily Sampling	Weekly Sampling
Santa Clara River Reaches 5 and above	Dry Weather (November 1 to October 31)	5	1
	Wet Weather (November 1 to October 31)	16	3

The allowable exceedance days applied at the outfalls were erroneously omitted from the 2012 Los Angeles County MS4 Permit. Implementation of allowable exceedance days at the outfall in this permit is less stringent than the previous 2012 Los Angeles County MS4 Permit because Los Angeles County Permittees may exceed the daily maximum single sample objective per the allowable exceedance days as outlined in the above tables without violating the permit. However, allowing exceedance days is consistent with the TMDL and allowed pursuant to CWA section 303(d)(4)(A) for the following reason—when the TMDL was adopted it specifically contemplated application of exceedance days at the outfall in its implementation plan. Chapter 7, section 7-36 of the Basin Plan under the heading "Monitoring to Determine Compliance", states, "Responsible jurisdictions and agencies shall assess compliance *at the outfall monitoring sites* identified in the implementation plan. Compliance shall be based on the allowable number of *exceedance days*…" (Basin Plan, p. 7-436.) Applying the allowable exceedance days to WQBELs measured at the outfalls is therefore consistent with the assumptions and requirements of the applicable TMDL WLAs and will ensure attainment of the water quality standard. As such, this revision is permissible under CWA section 303(d)(4)(A).

J. Human Right to Water Law

The Order is consistent with Water Code section 106.3 which establishes the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. The Order implements Water Code section 106.3 and promotes the State Water Board's resolution adopting the human right to water as a core value and directing its implementation in Water Board programs and activities (Resolution No. 2016-0010) by requiring receiving waters to meet adopted water quality standards that are designed to protect human health and ensure that water is safe for domestic use and by regulating discharges to minimize loading to attain the highest water quality which is reasonable, considering all demands being made on those waters and the total values involved. (Water Code, sections 13000, 13050, subdivisions (i)-(m), 13240, 13241, 13263; State Water Board Resolution No. 68-16.) The Order includes actions to improve conditions for economically distressed communities and persons experiencing homelessness.

K. Advancing Measures to Mitigate and Adapt to Climate Change

The predicted impacts of climate change in Southern California include an increase in temperatures, heightened frequency of extreme weather conditions including extreme precipitation events and drought, along with sea level rise. At the local scale, within urbanized areas, these changes may directly impact groundwater and surface water

supply; drainage, flooding, and erosion patterns; economically distressed communities; and ecosystems and habitat.

In recognition of the challenges posed by climate change, the State Water Board adopted on March 7, 2017 a resolution that requires a proactive approach to climate change in all State Water Board actions, including drinking water regulation, water quality protection, and financial assistance (Resolution No. 2017-0012). The resolution lays the foundation for a response to climate change that is integrated into all State Water Board actions, by giving direction to the State Water Board divisions and encouraging coordination with the Regional Water Boards. In conjunction with the State Water Board's Resolution, the Los Angeles Water Board adopted "A Resolution to Prioritize Actions to Adapt to and Mitigate the Impacts of Climate Change on the Los Angeles Region's Water Resources and Associated Beneficial Uses" (Resolution No. R18-004) on May 10, 2018. The resolution summarizes the steps taken so far to address the impacts of climate change within the Los Angeles Water Board and lists a series of steps to move forward. These include the identification of potential regulatory adaptation and mitigation measures that could be implemented on a short-term and long-term basis by each of the Los Angeles Water Board's programs to take into account, and assist in mitigating where possible, the effects of climate change on water resources and associated beneficial uses.

In addition, Executive Order N-10-19, signed on April 29, 2019, directs the California Natural Resources Agency (CNRA), the California Environmental Protection Agency (CalEPA), and the California Department of Food and Agriculture (CDFA) to prepare a water resilience portfolio that meets the needs of California's communities, economy, and environment, and expand and/or reassess the priorities in the California Water Action Plan. The order directs agencies to prioritize multi-benefit approaches, natural infrastructure, innovation and new technologies, regional approaches, integration across state government, and partnerships across governments.

The Order follows the guiding principles of the State and Los Angeles Water Boards resolutions (No. 2017-0012 and No. R18-004) as well as Executive Order N-10-19 by contributing to an adaptive climate change and water resilience strategy. Through multi-benefit regional projects, stormwater and non-stormwater runoff can be captured, infiltrated, and used to mitigate periodic drought conditions, reduce flood hazards and erosion rates, and recharge depleted groundwater aquifers and other water supply sources, all while reducing pollutant loads, maintaining beneficial uses in receiving waters and improving community health.

While not a requirement, to maximize these types of benefits when considering different possible approaches (management practices, locations, etc.) to achieve compliance, permittees should consider climate change offsets. The relevance of long-term implementation measures in the face of a changing climate may be considered, for example, by taking into account the results of regional climate change models in stormwater models used to develop Watershed Management Programs, or by considering BMP vulnerability to climate change when designing mitigation plans.

Overall, implementation of such a strategy has multiple benefits and may contribute to enhancing local water supply, creating drought buffer reserves, and restoring habitat and watershed health.

L. California Environmental Quality Act (CEQA)

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, § 21100, et seq.) pursuant to California Water Code section 13389. (County of Los Angeles v. Cal. Water Boards (2006) 143 Cal.App.4th 985.)

M. Advancing Racial Equity

In accordance with the Water Boards' Racial Equity Initiative, formally launched on August 18, 2020, the Order requires all Permittees to meet water quality standards to protect public health and the environment, thereby benefitting all persons and communities within the Region. The Los Angeles Water Board is **committed** to developing and implementing policies and programs to advance racial equity and environmental justice so that race can no longer be used to predict life outcomes, and outcomes for all groups are improved.

N. Other Plans, Policies, and Regulations

The Order implements all other applicable federal regulations and State plans, policies, and regulations.

IV. RATIONALE FOR DISCHARGE PROHIBITIONS

A. Non-Stormwater Discharges

1. Regulatory Background

The CWA employs the strategy of prohibiting the discharge of any pollutant from a point source into waters of the United States unless the discharger of the pollutant(s) obtains an NPDES permit pursuant to CWA section 402. The 1987 amendments to the CWA included section 402(p) that specifically addresses NPDES permitting requirements for municipal discharges from MS4s. Section 402(p) prohibits the discharge of pollutants from specified MS4s to waters of the United States except as authorized by an NPDES permit and identifies the substantive standards for MS4 permits. The MS4 permits (1) "shall include a requirement to effectively prohibit non-stormwater 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).)

On November 16, 1990, U.S. EPA published regulations to implement the 1987 amendments to the CWA (55 Fed. Reg. 47990 et seq. (Nov. 16, 1990)). The regulations establish minimum requirements for MS4 permits and address both stormwater and non-stormwater discharges from MS4s; however, the minimum requirements for each are significantly different. This is evident from U.S. EPA's preamble to the stormwater regulations, which states that "Section 402(p)(B)(3) [of the CWA] requires that permits for discharges from municipal separate storm sewers require the municipality to "effectively prohibit" non-stormwater discharges from the municipal storm sewer … Ultimately, such non-stormwater discharges through a municipal separate storm sewer system must either be removed from the system or become subject to an NPDES permit." (55 Fed.Reg. 47990, 47995

(Nov. 16, 1990).)[111] U.S. EPA states that MS4 Permittees are to begin to fulfill the "effective prohibition of non-storm water discharges" requirement by: (1) conducting a screening analysis of the MS4 to provide information to develop priorities for a program to detect and remove illicit discharges, (2) implementing a program to detect and remove illicit discharges, or ensure they are covered by a separate NPDES permit, and (3) to control improper disposal into the storm sewer. (40 CFR § 122.26(d)(2)(iv)(B).) These non-stormwater discharges therefore are not subject to the MEP standard. In its precedential decision on the 2012 Los Angeles County MS4 Permit (Order WQ 2015-0075), the State Water Board affirmed that "MEP is not the standard that governs non-storm water discharges."[112]

2. Definition of Non-Stormwater

Neither the CWA nor federal regulations specifically define "non-stormwater." The definition of "non-stormwater" is derived from the definition of "stormwater." Federal regulations define "storm water" as "storm water runoff, snow melt runoff, and surface runoff and drainage." (40 CFR § 122.26(b)(13).) While "surface runoff and drainage" is not defined in federal law, U.S. EPA's preamble to the federal regulations demonstrates that the term is related to precipitation events such as rain and/or snowmelt. (55 Fed.Reg. 47990, 47995-96 (Nov. 16, 1990)). For example, U.S. EPA states:

> In response to the comments [on the proposed rule] which requested EPA to define the term 'storm water' broadly to include a number of classes of discharges which are not in any way related to precipitation events, EPA believes that this rulemaking is not an appropriate forum for addressing the appropriate regulation under the NPDES program of such non-storm water discharges . . . . Consequently, the final definition of storm water has not been expanded from what was proposed.

(*Ibid.*) The stormwater regulations themselves identify numerous categories of discharges including landscape irrigation, diverted stream flows, discharges from drinking water supplier sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, and street wash water as "non-stormwater." While these types of discharges may be regulated under stormwater permits, they are not considered stormwater discharges. (40 CFR § 122.26(d)(2)(iv)(B)). U.S. EPA states that, "in general, municipalities will not be held responsible for prohibiting some specific components of discharges or flows … through their municipal separate storm sewer system, *even though such components may be considered non-storm water discharges…*" (emphasis added). However, where certain categories of non-stormwater discharges are identified by the Permittee (or the Los Angeles Water Board) as needing to be addressed, they are no longer exempt and become subject to the effective prohibition requirement in CWA section 402(p)(3)(B)(ii). This review of the stormwater regulations and U.S. EPA's discussion of the definition of stormwater in its preamble to these regulations strongly supports the interpretation that stormwater includes only precipitation-related discharges. Therefore, non-precipitation related discharges are not

[111] U.S. EPA further states that, "[p]ermits for such [non-storm water] discharges must meet applicable technology-based and water-quality based requirements of Sections 402 and 301 of the CWA." (55 Fed. Reg. 47990, 48037 (Nov. 16, 1990)).

[112] State Water Board Order WQ 2015-0075, p. 62.

stormwater discharges and, therefore, are not subject to the MEP standard in CWA section 402(p)(3)(B)(iii). Rather, non-stormwater discharges shall be effectively prohibited pursuant to CWA section 402(p)(3)(B)(ii), as discussed further in the next two sections.

While federal regulations have no definition for "non-stormwater discharges," "illicit discharges" defined in the regulations is the most closely applicable definition and the terms are often used interchangeably. "Illicit discharge" is defined by U.S. EPA as "any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit . . . and discharges resulting from firefighting activities."[113] The program must include among other elements a program to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the MS4. The program is to address all types of illicit discharges, however the federal regulations specifically identify the following categories of non-stormwater discharges to be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR § 35.2005(20)) to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water...".[114] Accordingly, federal regulations require that non-stormwater discharges be controlled if they are a significant source of pollutants and the permitting authority is expected to include permit conditions to prohibit or control specified categories of non-stormwater discharges if they are determined to be a source of pollutants to waters of the United States.

3. Non-Stormwater Regulation

Non-stormwater discharges from the MS4 that are not authorized by separate NPDES permits, nor specifically exempted, are subject to requirements under the NPDES program, including discharge prohibitions, technology-based effluent limitations and water quality-based effluent limitations (40 CFR § 122.44). U.S. EPA's preamble to the stormwater regulations also supports the interpretation that regulation of non-stormwater discharges through an MS4 is not limited to the MEP standard in CWA section 402(p)(3)(B)(iii):

> "*Today's rule defines the term "illicit discharge" to describe any discharge through a municipal separate storm sewer system that is not composed entirely of storm water and that is not covered by an NPDES permit. Such illicit discharges are not authorized under the Clean Water Act. Section 402(p(3)(B) requires that permits for discharges from municipal separate storm sewers require the municipality to "effectively prohibit" non-storm water discharges from the municipal separate storm sewer…Ultimately, such non-storm water discharges through a municipal separate storm*

[113] *Id*., § 122.26(b)(2). The preamble to the regulations states: "Today's rule defines the term 'illicit discharge' to describe any discharge through a municipal separate storm sewer system that is not composed entirely of storm water and that is not covered by an NPDES permit." (55 Fed. Reg. 47990, 47995 (Nov. 16, 1990)

[114] 40 CFR § 122.26(d)(2)(iv)(B)(1).

> *sewer must either be removed from the system or become subject to an NPDES permit.*" (55 Fed.Reg. 47990, 47995.)

In its 1990 rulemaking, U.S. EPA 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-stormwater discharges," indicating that the illicit discharge detection and elimination program requirement did not constitute the full manifestation of this provision (55 Fed.Reg. 47990, 47995; see also 40 CFR § 122.26(d)(2)(i).)

U.S. EPA's preamble to its 1990 Phase I MS4 regulations explain that the "effective prohibition" means that non-stormwater discharges to MS4s require separate NPDES permits, and that such permits must meet applicable requirements of CWA sections 402 and 301, including water quality-based requirements.[115] In response to public comments suggesting that certain types of non-stormwater discharges should not be prohibited in such a manner because they did not pose significant environmental problems, U.S. EPA stated that "[it] disagrees that the above described flows will not pose, in every case, significant environmental problems." U.S. EPA goes on to state that "[it] is clarifying that section 402(p)(3)(B) of the CWA (which requires permits for municipal separate storm sewers to 'effectively' prohibit non-storm water discharges) does not require permits for municipalities to prohibit certain discharges or flows of non-storm water to waters of the United States through municipal separate storm sewers in all cases."[116] U.S. EPA clarified that the permitting authority (i.e., the Los Angles Water Board here) "may include permit conditions that either require municipalities to prohibit or otherwise control any of these types of discharges where appropriate."[117] In addition, U.S. EPA's MS4 Permit Improvement Guide includes the following example of MS4 permit language addressing the Permittee's authority to require compliance by Dischargers: "Authority to Require Compliance – Require compliance with conditions in the permittee's ordinances, permits, contracts, or orders (i.e., hold dischargers accountable for their contributions of pollutants and flows)."[118]

Notably, the alternative to conditional exemptions to discharge prohibitions in the Order is a conservative interpretation of CWA section 402(p)(3)(B)(ii), which is to require Permittees to effectively prohibit *all* non-stormwater discharges. However, this alternative is more stringent than that provided in the Order (and previous permits) and, Permittees may incur more costs to implement a prohibition of all non-stormwater discharges than to implement or ensure implementation of specified BMPs to address non-stormwater discharges that are conditionally exempt from the discharge prohibition. An example of this is implementing an effective prohibition of landscape irrigation runoff as compared to implementing a local ordinance addressing landscape irrigation efficiency along with public outreach regarding use of drought tolerant landscaping and integrated pest management to minimize landscape irrigation runoff and associated pollutants.

4. Implementation of the Effective Prohibition on Non-Stormwater Discharges

Consistent with previous MS4 permits, Part III.A of the Order requires each Permittee, for the portion of the MS4 for which it is an owner or operator, to prohibit

[115] *Id*., at p. 48036-48037.
[116] *Id*., at p. 48037.
[117] *Id*., at p. 48037.
[118] U.S. EPA. *MS4 Improvement Guide* (2010), p. 11.

non-stormwater discharges through the MS4 to receiving waters except where such discharges are specifically authorized or conditionally exempt. For nearly two decades, some permittees have raised concerns with the Los Angeles Water Board's use of "through the MS4" or similar language, alleging that the Los Angeles Water Board can only prohibit or regulate non-stormwater discharges "into" the MS4 and not "from" the MS4. The Los Angeles Water Board once again concludes that its usage of "through the MS4" is appropriate to implement the CWA's effective prohibition of non-stormwater discharges.

U.S. EPA regulations and its 1990 preamble to the Phase I MS4 regulations use the terms "into," "to," "through," and "from" the MS4 interchangeably when describing the federal requirement to effectively prohibit non-stormwater discharges. As noted previously, federal regulations define illicit discharges as "any discharge *to* a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit…".[119] U.S. EPA in its 1990 preamble states that "[t]hese [MS4] permits are to…effectively prohibit non-storm water discharges *to* the municipal separate storm sewer system," and that "[t]oday's rule defines the term 'illicit discharge' to describe any discharge *through* a municipal separate storm sewer that is not composed entirely of storm water and that is not covered by an NPDES permit. Such illicit discharges are not authorized under the CWA. Section 402(p)(3)(B) of the CWA requires that permits for discharges *from* municipal separate storm sewers require the municipality to 'effectively prohibit' non-storm water discharges *from* the municipal separate storm sewer… Ultimately, such non-storm water discharges *through a municipal separate storm sewer* must either be removed from the system or become subject to an NPDES permit."[120] Further on, U.S. EPA states that "[t]he CWA prohibits the point source discharge of non-storm water not subject to an NPDES permit *through* municipal separate storm sewers to waters of the United States."[121] In addressing comments related to various types of non-stormwater discharges, U.S. EPA again uses "through" to describe the nature of the non-stormwater discharge prohibition, stating with regard to street wash waters that "such discharges…must be addressed by municipal management programs as part of the prohibition on non-storm water discharges *through* municipal separate storm sewer systems."[122] Congress' intent and U.S. EPA's phraseology in its own regulations therefore support the Los Angeles Water Board's interpretation that there is no meaningful difference with these terms, and that permittees must have adequate legal authority to control non-stormwater discharges into and from a portion of an MS4 for which it is an owner or operator.

When commenting on a draft version of the 2012 Los Angeles County MS4 Permit, U.S. EPA supported the non-stormwater discharge prohibition, which has been carried over in this Regional MS4 Permit. U.S. EPA stated:

> We understand that concerns have been raised specifically on Section III.A.1 of the draft permit which requires that the permittee prohibit certain non-stormwater discharges "through" the MS4 while Section 402(p)(3)(B)(ii) of the Clean Water Act requires that the permittee prohibit discharges "into" the MS4. We support the Board's proposed language

[119] 40 CFR § 122.26(b)(2).
[120] 55 Fed. Reg. 47990, 47995 (Nov. 16, 1990).
[121] *Id*., at p. 47996.
[122] *Id*., at p. 47990, 47996.

> on this issue. We would note that the preamble to EPA's 1990 stormwater regulations (55 FR 47995) itself uses the word "through" in describing the discharges which are to be prohibited. We believe this is in recognition of the fact that a discharge "into" the MS4 is tantamount to a discharge "through" the MS4 to receiving waters since the principal purpose of an MS4 is conveyance of water.[123]

Furthermore, the Los Angeles County Superior Court upheld the language in the 2001 Los Angeles County MS4 Permit and rejected the "into" versus "from" argument where the court stated:

> [A]lthough this Court recognizes that it may not always be possible to prevent something from going into the system, it probably is the cheapest method. If something does not go in, then there is no concern about it coming out the other end. If the contaminant does not enter the system, there is no need to process it at the end of the system.[124]

The court further stated that the permit's "regulation of what goes 'into' the storm drain does not take away from the [Permittees'] rights and needs to control the process" and set regional controls.[125]

Additionally, in Order WQ 2015-0075, the State Water Board agreed with the Los Angeles Water Board and found "the variation in language to be a distinction without a difference." It concluded "[w]hether the Los Angeles MS4 Order prohibits non-storm water discharges *into the MS4* or *through the MS4 to receiving waters*, the intent and effect of the prohibition is to prevent non-exempt non-storm water discharges from reaching the receiving waters. The legal standard governing non-storm water – effective prohibition – is not altered because the Los Angeles MS4 Order imposes the prohibition at the point of entry into the receiving water rather than the point of entry into the MS4 itself. Instructively, U.S. EPA has used the terms "into," "from," and "through" interchangeably when describing the prohibition." [126]

5. Authorized and Conditionally Exempt Non-Stormwater Discharges

The Order carries over provisions from previous permits exempting a limited number of authorized and conditionally exempt non-stormwater discharges from the discharge prohibition. Authorized non-stormwater discharges are those that are separately regulated by an individual or general NPDES permit, or by WDRs or a conditional waiver of WDRs for non-stormwater discharges from agricultural lands. The conditionally exempt non-stormwater discharges are only exempt provided the discharge complies with the conditions set forth in the Order. In general, these conditions require Permittees to implement, or ensure that a discharger if not a named Permittee in the Order implements, BMPs to ensure that the non-stormwater discharges are not a source of pollutants to waters of the United States. Conditions established in the Order for each of the non-stormwater discharge

[123] U.S. EPA Comments on Draft MS4 Permit for Los Angeles County (July 23, 2012).
[124] In *re Los Angeles County Municipal Storm Water Permit Litigation* (Sup. Ct. Los Angeles County, March 24, 2005, Case No. BS 080548), Statement of Decision from Phase I Trial on Petitions for Writ of Mandate.
[125] *Id.*, at p. 17.
[126] State Water Board Order WQ 2015-0075, p. 61.

categories ensure the protection of receiving water quality and are considered common practices.

The list of authorized and conditionally exempt non-stormwater discharges is similar, but not identical, to the previous permits. The Order conforms the exemptions for Ventura County, Los Angeles County, and the City of Long Beach and most closely matches provisions in the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit. The primary changes are as follows:

- The Order carries over the 2010 Ventura County MS4 Permit's exemption for discharges from irrigated agriculture covered by WDRs or a conditional waiver of WDRs;
- The Order carries over the 2014 City of Long Beach MS4 Permit's exemption for short-term releases of potable water with no dyes or additives for filming purposes;
- The Order removes references to U.S. EPA from the exemption for temporary non-stormwater discharges authorized pursuant to section 104(a) or 104(b) of CERCLA because the federal response authorities in these sections has been delegated to a number of federal agencies including, but not limited to, U.S. EPA. For example, the Department of Defense, the Department of the Interior, and the Department of Transportation are all delegated with these federal response authorities;
- The Order does not carry over usage of the term "flows incidental to urban activities" from the 2010 Ventura County MS4 Permit to describe certain conditionally exempt discharges. Although the terminology is different, the categories of conditionally exempt discharges are the largely the same, except as described below.
- The Order eliminates the conditional exemptions in the 2010 Ventura County MS4 Permit for air conditioning condensate because the Los Angeles Water Board determined that these discharges were more appropriately regulated under a general permit. NPDES Permit No. CAG994003, Discharges of Nonprocess Wastewater to Surface Waters in Coastal Watershed of Los Angeles and Ventura Counties, was most recently reissued in 2014.
- The Order eliminates the conditional exemptions in the 2010 Ventura County MS4 Permit for gravity flows from foundation, footing, and crawl space drains because the Los Angeles Water Board determined that these discharges were more appropriately regulated under a general permit. NDPES Permit No. CAG994004, Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties, was most recently reissued in 2018.
- The Order eliminates the non-stormwater action levels (NALs) included in the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit. These NALs had been included as a means to identify the potential need for additional controls for non-stormwater discharges in the future. The inclusion of NALs is redundant with other permit requirements such as the non-stormwater discharge prohibition and WQBELs for non-stormwater discharges.

6. Specific Provisions

Part III.A.2.a-e (Non-Stormwater Discharges Not Subject to Discharge Prohibition). These provisions identify the types of non-stormwater discharges that are not subject to the discharge prohibition. The intent of this provision is to exempt certain non-stormwater discharges through the MS4 because they are separately regulated by another NPDES permit or permit equivalent, they are emergency discharges, or they are natural flows. The State Water Board and Los Angeles Water Board general NPDES permits that are used to regulate authorized non-stormwater discharges that are routinely discharged through the MS4 are, for the most part, listed in Table F-22 below.

Table F-22. General NPDES Permits, WDRs and Conditional Waivers Applicable to Non-Stormwater Discharges

NPDES Permit No. or Order No.	Applicable Types of Discharges
NPDES Permit No. CAG994003 – Discharges of Nonprocess Wastewater to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties	• Ground water seepage • Uncontaminated pumped ground water • Gravity flow from foundation drains, footing drains, and crawl space pumps • Air conditioning condensate • Discharges of cleaning wastewater and filter backwash
NPDES Permit No. CAG994004 – Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties	• Uncontaminated pumped ground water • Discharges from activities that occur at wellheads, such as well construction, well development (e.g., aquifer pumping tests, well purging), or major well maintenance • Gravity flow from foundation drains, footing drains, and crawl space pumps • Discharges of ground water from construction and project dewatering[127]
NPDES Permit No. CAG990002 – Discharges from Utility Vaults and Underground Structures to Surface Waters	• Uncontaminated pumped ground water • Gravity flow from foundation drains, footing drains, and crawl space pumps
NPDES Permit No. CAG674001 – Discharges from Hydrostatic Test Water to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties	• Discharges of low threat hydrostatic test water[128]

[127] Discharges of ground water from construction and project dewatering include treated or untreated wastewater from permanent or temporary construction dewatering operations; ground water pumped as an aid in the containment and/or cleanup of a contaminant plume; ground water extracted during short-term and long-term pumping/aquifer tests; ground water generated from well drilling, construction or development and purging of wells; equipment decontamination water; subterranean seepage dewatering; incidental collected stormwater from basements; and other process and non-process wastewater discharges that meet the eligibility criteria and could not be covered under another specific general NPDES permit.

[128] Low threat hydrostatic test water means discharges resulting from the hydrostatic testing or structural integrity testing of pipes, tanks, or any storage vessels using domestic water or from the repair and maintenance of pipes, tanks, or reservoirs.

NPDES Permit No. CAG914001 – Discharges of Treated Groundwater from Investigation and/or Cleanup of Volatile Organic Compounds Contaminated-Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties	• Discharges of treated ground water from investigation and/or cleanup of volatile organic compound (VOC) contaminated sites
NPDES Permit No. CAG834001 – Discharges of Treated Groundwater and Other Wastewaters from Investigation and/or Cleanup of Petroleum Fuel-Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties	• Discharges of treated groundwater and other wastewaters from investigation and/or cleanup of petroleum fuel-related contamination arising from current and former leaking underground storage tank sites or similar operations
NPDES Permit No. CAG994006 – Discharges of Groundwater from San Gabriel Valley Groundwater Basin to Surface Water in the Upper San Gabriel River and Rio Hondo Watersheds – Los Angeles County	• Discharges from well startup operations and testing of groundwater treatment facilities in the San Gabriel Valley watersheds
NPDES Permit No. CAG140001 – Drinking Water System Discharges to Waters of the U.S.	• Discharges from drinking water systems[129]
NPDES Permit No. CAG990004 – Biological and Residual Pesticide Discharges from Vector Control Applications	• Discharges of residual pesticides from the application of minimal risk pesticides, which are pesticides that USEPA has exempted from FIFRA requirements when used only in the manner specified in 40 CFR section 152.25, including residuals from larvicides and adulticides that are currently registered in California and minimum risk pesticide products.
NPDES Permit No. CAG990005 – Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications	• Discharges of residues resulting from pesticide applications using products registered for use in California containing 2,4-D, acrolein, copper, diquat, endothall, fluridone, glyphosate, imazamox, imazapyr, penoxsulam, sodium carbonate peroxyhydrate, and triclopyr-based algaecides and aquatic herbicides, and adjuvants containing ingredients

[129] Discharges covered by this permit include discharges from drinking water systems generated during the following activities: ground water supply well flushing or pump-to-waste; ground water well development, rehabilitation, and testing; ground water monitoring for purpose of supply well development, rehabilitation and testing; trench dewatering of drinking water during planned repairs; transmission system installation, cleaning, and testing; water treatment plant operations (excluding filter backwash that is discharged to a water of the U.S.); distribution system storage tank or reservoir releases; distribution system dewatering, flushing, and pressure testing; fire flow / fire hydrant testing; meter testing; automated water analyzers operations; pressure relief valves; and unscheduled activities that must be undertaken to comply with mandates of the Federal Drinking Water Act and California Health and Safety Code.

	represented by the surrogate nonylphenol.
Order No. R4-2016-0143 – Conditional Waiver for Discharges from Irrigated Lands	• Discharges from irrigated agricultural lands, including lands planted for row, vineyard, pasture, field and tree crops, nurseries, nursery stock production, wholesale nurseries, and greenhouse operations with permeable floors, which are not subject to WDRs, including a MS4 permit or other NPDES permit

The Order also exempts temporary non-stormwater discharges authorized pursuant to sections 104(a) or 104(b) of the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These discharges typically consist of short-term, high volume discharges resulting from the development or redevelopment of groundwater extraction wells, or federal or State-required compliance testing of potable water treatment plants, as part of a groundwater remediation action authorized under CERCLA. These discharges through the MS4 are only authorized if: (i) the discharge will comply with water quality standards identified as applicable or relevant and appropriate requirements ("ARARs") under section 121(d)(2) of CERCLA; or (ii) the discharge is subject to either (a) a written waiver of ARARs pursuant to section 121(d)(4) of CERCLA or (b) a written determination that compliance with ARARs is not practicable considering the exigencies of the situation, pursuant to 40 CFR section 300.415(j). Exempting these discharges is appropriate because, as noted above, the discharges must comply with water quality standards, which are identified as ARARs, or must be subject to a written waiver of ARARs based on one or more factors identified in 42 U.S.C § 9621(d)(2) or determination that compliance with ARARs is not practicable given the urgency of the situation and scope of the action among other factors. Additionally, a decision to authorize a discharge through the MS4 to surface waters will not be made by U.S. EPA or another federal agency without first conducting a comprehensive evaluation of containment, treatment, reinjection, or re-use options for the water generated from the subject wells. If a decision to discharge through the MS4 is made, such authorization of the discharge under CERCLA will require that the discharger shall:

a. Implement BMPs to minimize the rate and duration of the discharge and remove excessive solids and implement other on-site physical treatment where feasible;

i. Promote infiltration of discharged water in locations that will prevent or minimize degradation of groundwater quality;

ii. Notify the affected MS4 Permittees, including Ventura County Watershed Protection District and Los Angeles County Flood Control District, and the MS4 Permittee with land use authority over the discharge location, and the Los Angeles Water Board at least one week prior to a planned discharge (unless U.S. EPA determines in writing that exigent circumstances require a shorter notice period) and as soon as possible (but no later than 24 hours after the discharge has occurred) for unplanned discharges;

iii. Monitor any pollutants of concern in the discharge;[130] and

iv. Maintain records for all discharges greater than 100,000 gallons.[131]

The Order continues to unconditionally exempt non-stormwater discharges from emergency firefighting activities (i.e., flows necessary for the protection of life or property) from the discharge prohibition. Discharges from vehicle washing of firefighting vehicles, building fire suppression system maintenance and testing (e.g., sprinkler line flushing), fire hydrant maintenance and testing, and other routine maintenance activities are not considered emergency firefighting activities. Additionally, the Order distinguishes between emergency and non-emergency firefighting flows. Essential non-emergency firefighting flows are still eligible for a conditional exemption as discussed below.

Natural flows not subject to the non-stormwater discharge prohibition in the Order include natural springs, flows from riparian habitats and wetlands, diverted stream flows authorized by the State Water Board or the Los Angeles Water Board, uncontaminated groundwater infiltration, and rising groundwater where groundwater seepage is not otherwise covered by a NPDES permit. These discharges are not considered a potential source of pollutants.

Part III.A.3.(a-b) (Conditionally Exempt Non-Stormwater Discharges). These provisions identify the types of non-stormwater discharges that are conditionally exempt from the discharge prohibition. For non-stormwater discharges to be conditionally exempt from the discharge prohibition, the Permittees must identify appropriate BMPs, monitor and report on the non-stormwater discharges where applicable, and ensure implementation of effective control measures as discussed in subpart 7 below.

The Order separately identifies flows from non-emergency firefighting activities, discharges from drinking water supplier distribution systems, and potable wash water used to clean reservoir covers as “conditionally exempt essential” non-stormwater discharges rather than combining them into the same category as the other conditionally exempt non-stormwater discharges. In doing so, the Los Angeles Water Board recognizes that these discharges are essential public service discharge activities and are directly or indirectly required by other state or federal statutes and/or regulations as done in the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit. Note that the 2010 Ventura County MS4 Permit had an exemption for flows from firefighting activities but did not include a category for discharges from drinking water supplier distribution systems. Additionally, consistent with the California Ocean Plan, the Order imposes

[130] Pollutants of concern include, at a minimum, trash and debris, including organic matter, TSS, any pollutant being addressed by the groundwater remediation action under CERCLA, and any pollutant for which there is a Water Quality Based Effluent Limitation in Part IV of the Order applicable to discharges from the MS4 to the receiving water.

[131] Records shall be maintained, as appropriate, on the: name of CERCLA authorized discharger, date and time of notification (for planned discharges), method of notification, location of discharge, discharge pathway, receiving water, date of discharge, time of the beginning and end of the discharge, duration of the discharge, flow rate or velocity, estimated total number of gallons discharged, type of pollutant removal equipment used, type of dechlorination equipment used if applicable, type of dechlorination chemicals used if applicable, concentration of residual chlorine if applicable, type(s) of sediment controls used, and field and laboratory monitoring data. Records shall be retained for three years, unless the Los Angeles Water Board requests a longer record retention period and shall be made available upon request by the MS4 Permittee or the Los Angeles Water Board.

additional requirements on conditionally exempt non-stormwater discharges for direct discharges to Areas of Special Biological Significance (ASBS).

If any of the conditionally exempt non-stormwater discharges are identified as being a potential source of pollutants, the Order contains a provision that the Los Angeles Water Board, based on an evaluation of monitoring data and other relevant information including TMDLs and antidegradation policies, may require that a discharger obtain coverage under a separate individual or general State Water Board or Los Angeles Water Board NPDES permit for the non-stormwater discharge or may require that the Permittee ensures that the discharger implements additional conditions specified or approved by the Executive Officer to ensure that the discharge is not a source of pollutants.

7. BMPs for Non-Stormwater Discharges

To eliminate adverse impacts from conditionally exempt non-stormwater discharges, Permittees are required to implement appropriate BMPs, or ensure that a discharger not named as a Permittee in the Order implements appropriate BMPs consistent with the requirements in Part III.A.5 of the Order. The Order contains language carried over from the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit that specifies certain conditions, including implementation of BMPs, for each category of conditionally exempt non-stormwater discharge that must be met in order for the non-stormwater discharge to be exempted from the non-stormwater discharge prohibition and thus allowed through the MS4. The 2010 Ventura County MS4 Permit also included similar conditions. The intent of these provisions is to ensure that Permittees implement BMPs consistent with common practice. The Los Angeles Water Board has included applicable guidance documents where appropriate.

One such example is that Permittees must develop and implement procedures to ensure that drinking water system owners/operators drinking water system owners/operators that may discharge amounts greater than 100,000 gallons to the Permittee's MS4: (1) provide notification at least 72 hours prior to a planned discharge and as soon as possible after an unplanned discharge; (2) monitor any pollutants of concern in the drinking water system discharge; (3) keep records; and (4) implement appropriate BMPs based on the American Water Works Association (California-Nevada Section) *Guidelines for the Development of Your Best Management Practices (BMP) Manual for Drinking Water System Releases* (2005) or equivalent industry standard BMP manual.

The Statewide Recycled Water Policy, adopted by the State Water Board through Resolution No. 2009-0011, and amended by Resolution No. 2013-0003 and Resolution No. 2018-0057, encourages the safe use of recycled water from wastewater sources that meets the definition in California Water Code section 13050(n), in a manner that implements state and federal water quality laws and protects public health and the environment. The conditions for non-stormwater discharges related to landscape irrigation using potable water and landscape irrigation using reclaimed water were carried over from the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit and emphasize the control of incidental runoff from landscape irrigation. Consistent with the Recycled Water Policy, the BMPs incorporated into the Order for potable landscape irrigation ensure that water is conserved, overspray and over irrigation

causing incidental runoff is minimized, and exposure to landscape related pollutants is minimized.

State Water Board Water Quality Order No. 2009-0006-DWQ, General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water, is a general permit for producers and distributors of recycled water for landscape irrigation uses. As part of that general permit, the producers and distributors of recycled water for landscape irrigation are required to develop an Operations and Maintenance Plan (O&M Plan) that includes an Operations Plan and an Irrigation Management Plan. Therefore, any landscape irrigation discharges of reclaimed wastewater to the MS4 must comply with the relevant portion of the O&M Plan including the Irrigation Management Plan. By explicitly referencing the O&M requirement in that general permit, it centralizes the requirements for landscape irrigation using reclaimed wastewater and helps to ensure that procedures are in place for conserving water, minimizing incidental runoff, and minimizing exposure to landscape related pollutants.

Non-stormwater discharge provisions have been carried over from the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit for the dewatering of lakes to the MS4. The provisions for the dewatering of lakes including removing and legally disposing of all visible trash on the shoreline or on the surface of the lake and the cleaning of the MS4 inlet and outlet where the water will be discharged to the receiving water have been consistently incorporated into Los Angeles Water Board authorizations to discharge non-stormwater from lakes, reservoirs, and ponds. In addition, provisions for volumetrically and velocity controlling discharges as well as taking measurements to stabilize lake bottom sediments are carried over from the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit to the Order to ensure that turbidity in receiving waters due to the discharge is minimized. The permit provisions for the dewatering of lakes ensure the protection of receiving water quality.

Consistent with the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit, Basin Plan requirements for residual chlorine have been explicitly included in the conditions for drinking water supplier distribution system releases, dechlorinated/debrominated swimming pool/spa discharges, and dewatering of decorative fountains.[132]

Specific BMPs for discharges from swimming pools/spas and the dewatering of decorative fountains have been carried over from the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit to the Order, including prohibiting the dewatering of swimming pools/spas or decorative fountains containing copper-based algaecides and requiring the implementation of controls to prevent introduction of pollutants prior to discharge. Swimming pool/spa discharges and decorative fountain water must be dechlorinated or debrominated using holding time, aeration, and/or sodium thiosulfate and if necessary, shall be pH adjusted to within the range of 6.5 and 8.5. The MS4 inlet and outlet must be inspected and cleaned out immediately prior to discharge to protect receiving water

[132] Swimming pool discharges explicitly excludes discharges of cleaning wastewater and filter backwash. However, these discharges are considered exempt non-stormwater discharges if the discharge meets the eligibility requirements and obtains coverage under the Los Angeles Water Board's general permit for discharges of nonprocess wastewater to surface waters in coastal watersheds of Los Angeles and Ventura counties (NPDES Permit No. CAG994003).

quality. In addition, provisions for volumetrically and velocity controlling discharges are carried over from the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit to the Order to ensure that turbidity in receiving waters due to the discharge is minimized.

In addition to the specific inclusion of the Basin Plan water quality objective for residual chlorine, the Order allows discharges of drinking water supplier distribution system releases as long as specified BMPs are implemented. BMPs must be implemented to prevent introduction of pollutants to drinking water supplier distribution system releases prior to discharge to the receiving water. BMPs must be consistent with the American Water Works Association (California – Nevada Section) BMP Manual for Drinking Water System Releases or other equivalent industry standard BMP manual. This requirement therefore gives Permittees flexibility to design their own program by choosing their BMP manual to address non-stormwater discharges from drinking water supplier distribution systems. Similar to discharges from swimming pools/spas and dewatering of decorative fountains, drinking water supplier distribution system releases must be dechlorinated or debrominated using holding time, aeration, and/or sodium thiosulfate and if necessary, shall be pH adjusted to within the range of 6.5 and 8.5. The MS4 inlet and outlet must be inspected and cleaned out immediately prior to discharge to protect receiving water quality. BMPs such as sandbags or gravel bags, or other appropriate means shall be utilized to prevent sediment transport and all sediment shall be collected and disposed of in a legal and appropriate manner. Additional provisions for volumetrically and velocity controlling discharges are carried over from the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 permit to the Regional MS4 Permit to ensure that turbidity in receiving waters due to the discharge is minimized. The permit provisions for drinking water supply and distribution system releases, dechlorinated/ debrominated swimming pool/spa discharges, and dewatering of decorative fountains ensures the protection of receiving water quality.

Potable wash water used to clean reservoir covers is included in the Order as a conditionally exempt non-essential non-stormwater discharge. This requirement and the corresponding BMPs were carried over from the 2014 City of Long Beach MS4 Permit. Provisions and BMPs for potable wash water used to clean reservoir covers is pursuant to The Final Long Term 2 Enhanced Surface Water Treatment Rule (EPA 815-R06-005 February 2006), which includes requirements for "Systems that store treated water in open reservoirs [where the systems] must either cover the reservoir or treat the reservoir discharge to inactivate 4-log virus, 3-log *Giardia lamblia*, and 2-log *Cryptosporidium*."[133] The provisions and BMPs are also pursuant to the Safe Drinking Water Act (SDWA).

The Los Angeles Water Board evaluated and established a list of approved BMPs for various programs and activities through Los Angeles Water Board Resolution 98-08 that serves as appropriate BMPs for inclusion in the discharger and Permittees' regulatory programs. Requirements for street/sidewalk wash water contained in Resolution 98-08 have been explicitly incorporated into the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit and

[133] U.S. EPA. Fact Sheet - Long Term 2 Enhanced Surface Water Treatment Rule. December 2005. EPA 815-F-05-009.

have been carried over to the Order. The inclusion of the requirements originally identified in Resolution 98-08 ensures the protection of receiving water quality.

Specific BMPs for discharges from non-commercial car washing have been carried over from the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit to the Order to prevent the introduction of pollutants prior to discharge. BMPs that must be implemented for the discharge of non-commercial vehicle wash water include minimizing the amount of water used by turning off nozzles or kinking the hose when not spraying a vehicle and by using a low-volume pressure washer; using biodegradable, phosphate free detergents and non-toxic cleaning products; where possible, washing vehicles on permeable surfaces where wash water can percolate into the ground; creating a temporary berm or block off the storm drains; using pumps or vacuums to direct water to pervious areas; and emptying buckets of soapy water or rinse water into the sanitary sewer system. These BMPs are common practice and ensure the protection of receiving water quality.

Discharges resulting from essential non-emergency firefighting activities have been carried over from the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit to the Order. Similar BMPs have been incorporated into other California MS4 permits. For example, both the Riverside County and Orange County MS4 permits require the development and implementation of a program to address pollutants from non-emergency firefighting flows. Rather than develop a program to address non-emergency firefighting discharges, Permittees may implement the BMPs contained in the Best Management Practices Plan for Urban Runoff Management for Participating Riverside County Fire Fighting Agencies or an equivalent guidance manual.

The inclusion of specific conditions for conditionally exempted non-stormwater discharges in the Order centralizes the requirements for non-stormwater discharges. Conditions established in the Order for each of the conditionally exempt non-stormwater discharge categories are common practice and have been incorporated into other area MS4 permits.

8. Permittee Requirements for Non-Stormwater Discharges

The Order includes specific requirements for Permittees related to targeted screening of MS4 outfalls for non-stormwater discharges, and monitoring and evaluation of significant non-stormwater discharges. Permittees are required to develop and implement procedures to ensure that all conditions required for conditionally exempt non-stormwater discharges are being implemented. These requirements were carried over from the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit to help clarify the responsibilities of the Permittees versus the responsibilities of the non-MS4 Permittee dischargers to the MS4. The development and implementation of these procedures helps to ensure compliance with the non-stormwater discharge prohibition and ensure that the non-stormwater discharges are not sources of pollutants.

9. Compliance Demonstration

A Permittee's implementation of program elements and control measures to effectively eliminate prohibited non-stormwater discharges will be considered as evidence of whether a Permittee is complying with the non-stormwater discharge prohibition in Part III.A of the Order. Where a Permittee is fully implementing its

Illicit Connections and Illicit Discharges Elimination Program, either pursuant to Part VIII.I of the Order, or by incorporation of customized actions into a WMP as approved by the Los Angeles Water Board (see Part IX.B of the Order), the Los Angeles Water Board would conduct a fact-specific analysis of the nature and source of the unauthorized non-stormwater discharge and the efforts of the Permittee to prohibit the discharge in support of any enforcement action under Part III.A of the Order.

B. Trash

1. Federal Requirements

Federal regulations identify the need to develop, implement, and enforce controls to reduce the discharge of pollutants from MS4s.[134] Federal regulations further specify that Permittees must include in their management program maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from MS4s.[135] The highlighting of floatables is pertinent since a significant portion of trash is characteristic of, and within the category of, floatable pollutants. Municipal trash management programs are discussed in federal documents including U.S. EPA's Stormwater Menu of BMPs fact sheet on Trash and Debris Management.[136] This fact sheet highlights source control and structural control techniques to manage trash.

2. Statewide Trash Amendments

On April 7, 2015, the State Water Board adopted Part 1 Trash Provisions (Trash Provisions) of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan) and an amendment to the Ocean Plan to control trash. Together, these amendments are referred to as the Trash Amendments or Trash Provisions. The Trash Amendments establish a water quality objective, a prohibition on the discharge of trash, and implementation requirements to control trash. The Trash Amendments were approved by OAL on December 2, 2015 and by U.S. EPA on January 12, 2016.

3. Applicability

The Trash Amendments apply to all waters of the State, except waters in the Los Angeles Region in which a TMDL for trash was in effect prior to the effective date of the Trash Amendments.[137]

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[134] 40 CFR § 122.26(d)(2)(iv).

[135] *Id*., subd. (d)(2)(iv)(A)(*1*).

[136] U.S. EPA. Trash and Debris Management, Public Education and Outreach on Stormwater Impacts: Education for Homeowners.

[137] While the Trash Amendments do not apply to waters addressed by existing trash TMDLs in the Los Angeles Region, the Trash Amendments directed the Los Angeles Water Board to reconsider the scope of its trash TMDLs, except for the Los Angeles River Watershed and Ballona Creek Trash TMDLs, within one year of the Trash Amendments' effective date. The Los Angeles Water Board held an initial public meeting to consider its trash TMDLs on November 28, 2016. On June 14, 2018 the Los Angeles Water Board adopted revisions to the Malibu Creek Watershed Trash TMDL and the Revolon Slough and Beardsley Wash Trash TMDL to align them with the Trash Amendments. On March 14, 2019 the Los Angeles Water Board adopted a resolution finding that the Santa Monica Bay Nearshore and Offshore Debris TMDL and the Machado Lake Trash TMDL could not be aligned with the Trash Amendments. On June 13, 2019 the Los Angeles Water Board adopted a resolution finding that the Ventura River Estuary

The Order incorporates the Trash Amendments in all areas not addressed by an existing trash TMDL. For areas addressed by an existing trash TMDL, the Order requires Permittees to comply with the appropriate TMDL-based trash WQBELs specified in Part IV.B.3 of the Order.

4. Implementation

The Trash Amendments require NPDES permits regulating MS4 permittees with regulatory authority over priority land uses (PLUs) to include provisions to prohibit the discharge of trash in Waters of the United States. Permittees may elect to comply with the trash prohibition under one of two compliance tracks. Under Track 1, a Permittee must install, operate, and maintain full capture systems for storm drains that capture runoff from priority land uses in their respective jurisdictions. Under Track 2, a Permittee must install, operate, and maintain any combination of full capture systems, multi-benefit projects, treatment controls and/or institutional controls. Permittees outside of or lacking land use authority over PLUs do not have to implement the trash prohibition unless directed to by the Los Angeles Water Board as described in the discussion of designated land use areas below.

Prior to the issuance of the Order, and as contemplated by the Trash Amendments, on August 18, 2017, the Los Angeles Water Board issued California Water Code Section 13383 Orders to Permittees whose jurisdictional areas are not fully addressed by an existing trash TMDL. These California Water Code Section 13383 Orders required Permittees to submit: (1) a letter identifying the Permittee's selected compliance option (Track 1 or Track 2) to comply with the Trash Provisions by November 20, 2017; and (2) supporting documents based on the compliance option selected by February 18, 2019. The supporting documents for Permittees selecting Track 1 included the following. For Permittees selecting Track 1, a jurisdictional or watershed map(s) identifying 1) all PLU areas discharging to the storm drain network; 2) any drainage areas addressed by existing trash TMDLs; 3) the corresponding storm drain network; 4) proposed locations of all certified full capture systems; and 5) proposed equivalent alternative land uses, documentation demonstrating that the substitution of equivalent alternative land uses has been approved by the Los Angeles Water Board Executive Officer, and corresponding storm drainage network, if applicable. The supporting documents for Permittees selecting Track 2 generally included a jurisdictional map(s) identifying the provisions 1-3 mentioned above as well as locations or land uses where a combination of controls will be implemented to achieve full capture system equivalency (see Attachment A for a definition of this term) and an assessment of trash levels for all PLUs and for other selected locations or land uses within the MS4s jurisdiction if proposing to implement any combination of controls in locations other than PLUs. In addition, Permittees selecting Track 2 were also required to submit an implementation plan that included requirements similar to the ones included in Part III.B.2.b of the Order. Table F-23 below, lists the Permittees that were issued a California Water Code Section 13383 Order and the compliance option that they selected in response to the Order. The Table also notes those Permittees that are outside of or lack jurisdiction over PLUs. All Permittees that selected either of the Tracks, also submitted the required supporting documents that were due by February 18, 2019. Only two cities selected Track 2, the cities of

Trash TMDL, Lake Elizabeth Trash TMDL, and Legg Lake Trash TMDL, could not be aligned with the Trash Amendments.

Gardena and Los Angeles. On April 8, 2019, the Los Angeles Water Board sent a correspondence to Track 1 Permittees clarifying that they could proceed implementing the provisions of the 13383 Order without requiring further approval. On June 26, 2019, the Los Angeles Water Board issued a conditional approval letter to the City of Gardena, requiring additional information and submittals in order to approve its implementation plan, which were due by March 31, 2021. In its implementation plan, the City of Los Angeles indicated that it is in compliance with the Trash Amendments; Board staff are in the process of reviewing the information provided by both cities.

Table F-23. Selected Compliance Option in Response to California Water Code Section 13383 Orders

Permittee	Selected Compliance Option (Track 1 or Track 2)
Arcadia	Track 1
Artesia	Track 1
Azusa	Track 1
Baldwin Park	Track 1
Bellflower	Track 1
Bradbury	Track 1
Carson	Track 1
Cerritos	Track 1
Claremont	Track 1
Compton	[138]
County of Los Angeles	Track 1
Covina	Track 1
Diamond Bar	Track 1
Downey	Track 1
Duarte	Track 1
El Monte	Track 1
El Segundo	Track 1
Gardena	Track 2
Glendora	Track 1
Hawaiian Gardens	Track 1
Hawthorne	Track 1
Industry	Track 1
Inglewood	Track 1
Irwindale	Track 1
La Habra Heights	Track 1
La Mirada	Track 1
La Puente	Track 1
La Verne	Track 1
Lakewood	Track 1
Lawndale	Track 1
Lomita	Track 1

[138] On December 20, 2017, the City of Compton responded to the Los Angeles Water Board's August 18, 2017's 13383 Order and stated that the City is only subject to the Los Angeles River Watershed Trash TMDL. Board staff are still investigating the City's claim.

Permittee	Selected Compliance Option (Track 1 or Track 2)
Los Angeles	Track 2
Los Angeles County Flood Control District	[139]
Manhattan Beach	Track 1
Monrovia	Track 1
Norwalk	Track 1
Paramount	Track 1
Pico Rivera	Track 1
Pomona	Track 1
Rancho Palos Verdes	Track 1
Redondo Beach	Track 1
Rolling Hills	[140]
Rolling Hills Estates	Track 1
San Dimas	Track 1
Santa Clarita	Track 1
Santa Fe Springs	Track 1
Signal Hill	Track 1
South El Monte	Track 1
Torrance	Track 1
Walnut	Track 1
West Covina	Track 1
Whittier	Track 1
County of Ventura	Track 1
Camarillo	Track 1
Fillmore	Track 1
Moorpark	Track 1
Ojai	Track 1
Oxnard	Track 1
Port Hueneme	Track 1
Santa Paula	Track 1
Simi Valley	Track 1
Thousand Oaks	Track 1
Ventura	Track 1
Ventura County Watershed Protection District	[141]
Long Beach	Track 1

Both compliance tracks focus trash control efforts on PLUs. PLUs are areas that have been shown to generate a significant amount of trash and include high density residential, industrial, commercial, mixed urban, and public transportation stations. A compliance framework focused on PLUs allows MS4s to allocate trash-control resources to the highest priority areas.

[139]The District has no jurisdictional authority over PLUs.
[140]The City has no PLUs within its jurisdiction.
[141]The District has no jurisdictional authority over PLUs.

In some cases, non-priority land use areas may also generate a substantial amount of trash. Permittees may get approval from the Los Angeles Water Board to substitute one or more of the PLUs with an alternate land use area that generates trash at rates equivalent or greater than the PLU(s) being substituted. The Los Angeles Water Board may also determine that a non-priority land use or location generates a substantial amount of trash. Where this determination is made, the Los Angeles Water Board may require Permittees to adopt Track 1 or Track 2 control measures over these areas. The Order refers to these areas as "designated land use areas." No designated land use areas for trash have been identified as of the issuance of the Order.

5. Implementation Schedule

The Trash Amendments require NPDES permits for MS4 permittees to contain provisions prohibiting the discharge of trash within ten years of the effective date of the first implementing permit, or no later than fifteen years from the effective date of the Trash Amendments (December 2, 2030). The Order is the first implementing permit for the Permittees; therefore, the Permittees must obtain full compliance with the Trash Amendments by December 2, 2030. Additional time for compliance may be authorized for designated land uses identified after the effective date of the Order. In no case may the time for compliance with the Trash Amendments for newly Designated Land Uses be more than 10 years.

Part III.B.2 of the Order incorporates the Trash Amendments requirements for Permittees with regulatory authority over PLUs, designated land uses, or equivalent alternate land uses. Specifically, Part III.B.2.a of the Order outlines the compliance methods and allows Permittees to change their compliance method by submitting a written request to the Los Angeles Water Board for approval of a modified jurisdictional map. Permittees changing their compliance method to Track 2 are also required to submit an Implementation Plan. Part III.B.2.b of the Order outlines provisions for Implementation Plan for Track 2; and Part III.B.2.c of the Order outlines provisions for jurisdictional map. Part III.B.2.d of the Order establishes the implementation schedule for complying with the discharge prohibition consistent with the Trash Amendments. This provision establishes an interim compliance deadline requiring 50% of all PLUs and/or approved equivalent alternate land uses to meet full capture (Track 1) or full capture system equivalency (Track 2) within 5 years and a final compliance deadline requiring 100% of all PLUs and/or approved equivalent alternate land uses to meet full capture (Track 1) or full capture system equivalency (Track 2) by no later than 10 years from the effective date of the Order or December 2, 2030, whichever is sooner. For designated land uses, it may not be feasible to expect compliance within ten years from the effective date of the Order. Hence, the final compliance date for a designated land use is no longer than 10 years from the Los Angeles Water Board's written determination to designate a land use or location as a designated land use.

6. Previous Permit Requirements

Part VI.D.9.h.vii of the 2012 Los Angeles County MS4 Permit and Part VII.L.8.vii of the 2014 City of Long Beach MS4 Permit required Permittees to install trash excluders, or equivalent devices, on or in catch basins or outfalls to prevent the discharge of trash to the MS4 or receiving water no later than December 28, 2016 and March 28, 2018, respectively. Part 4.G.I.5.(e) of the 2010 Ventura County MS4 Permit also required the Permittees to comply with the same requirements no later

than July 8, 2012. This requirement only applied to areas not subject to a trash TMDL and identified as a "Priority A" area and did not apply to sites where the application of such BMP(s) alone would cause flooding. Priority A was defined as areas consistently generating the highest volumes of trash and/or debris. Alternatively, Permittees could implement alternative or enhanced BMPs that provide substantially equivalent removal of trash. The Statewide Trash Amendments closely align with the intent and scope of the requirements of the previous permits. Therefore, incorporation of Statewide Trash Amendments into the Order are not new requirements but rather a refinement of the existing requirements.

V. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Clean Water Act section 402(p)(3)(B)(iii) requires MS4 permits to include "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." The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. The Clean Water Act generally requires NPDES permits to include technology-based effluent limitations and any more stringent water quality-based effluent limitations necessary to meet water quality standards. Both types of limitations are in the Order and are discussed below.

A. Technology-Based Effluent Limitations

Section 301(b)(1)(A) of the CWA and 40 CFR section 122.44(a) require that NPDES permits include technology-based effluent limitations and standards.[142] In 1987, the CWA was amended to require that municipal stormwater discharges "reduce the discharge of pollutants to the maximum extent practicable." (CWA § 402(p)(3)(B)(iii).) The "maximum extent practicable" (MEP) standard is the applicable federal technology-based standard that MS4 owners and operators must attain to comply, in part, with their NPDES permits.[143] 40 CFR section 122.26(d)(2)(iv) further details the MEP standard, which requires that MS4 owners and operators implement comprehensive pollutant control measures in a stormwater management program including management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. Permit requirements to implement the MEP standard are generally referred to, collectively, as best management practices or BMPs.

[142] A technology-based effluent limitation is based on the capability of a model treatment method to reduce a pollutant to a certain concentration (NPDES Permit Writer's Manual (September 2010), Appendix A). Technology-based effluent limitations generally are expressed numerically as the maximum amount of pollutant that may be discharged (either as a prohibition or as a concentration or mass; mass is usually normalized either based on production units or wastewater flow) but are sometimes narrative effluent limitations such as model best management practices for an industrial category like "Concentrated Aquatic Animal Production." For example, model best management practices are identified for solids control, including the following, "[i]n order to minimize the discharge of accumulated solids from settling ponds and basins and production systems, identify and implement procedures for routine cleaning …, and procedures to minimize any discharge of accumulated solids during the … harvesting of aquatic animals in the production system" (NPDES Writers' Manual (September 2010), p. 5-33). Technology-based requirements represent the minimum level of control that must be imposed in a permit issued under CWA § 402.

[143] Note that the MEP standard only applies to stormwater discharges from the MS4. Non-stormwater discharges are subject to a different standard – specifically, non-stormwater discharges through the MS4 must be effectively prohibited.

Examples of BMPs used to comply with the MEP standard include street sweeping, requiring erosion controls at construction sites (e.g., straw wattles, silt fences), and catch basin cleanouts.

The fundamental requirement that municipalities reduce pollutants in municipal stormwater discharges to the MEP remains a cornerstone of the mandate imposed on municipalities by the federal Clean Water Act and implementing NPDES regulations. Meeting the MEP standard is generally a result of emphasizing robust pollution prevention and control through various programs and structural measures. These pollution prevention and control methods require municipalities to take actions that will lessen the incidence of pollutants entering the storm drains by regulating the behavior and practices of the municipalities, their residents, and their businesses and controlling the discharge of pollutants through structural measures and treatment methods.

Neither Congress nor the U.S. EPA has specifically defined the term "maximum extent practicable." Rather, the MEP standard is an ever evolving, flexible and advancing concept, which considers technical and economic feasibility. As knowledge and technology regarding controlling stormwater runoff continue to evolve, so too must the actions that are taken to comply with the standard. Congress established this flexible 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."[144] This standard was designed to allow permit writers flexibility to tailor permits to the site-specific nature of MS4s and to use a combination of pollution controls that may be different in different permits.[145] The MEP standard is also expected to evolve in light of programmatic improvements, new source control initiatives, and technological advances that serve to improve the overall effectiveness of stormwater management programs in reducing pollutant loading to receiving waters.

In addition to regulations, U.S. EPA has issued guidance documents that discuss the type of BMPs that should be included in MS4 permits in order to reduce the discharge of pollutants in stormwater to the MEP.[146] Successive permits for the same MS4 must become more refined and detailed and require greater levels of specificity over time in defining what constitutes MEP, based on experience under the previous permit. For example, the 1990 Los Angeles County MS4 Permit provided a general requirement that Permittees develop and implement a plan with a schedule of implementation for BMPs to control pollutants from residential, commercial, and industrial sites to the MEP. To continue to address these land use areas, the 1996 Permit required Permittees to develop and implement a model system for prioritization of development projects and establish a list of recommended BMPs in a model program, referred to as a Standard Urban Storm Water Mitigation Plan (SUSMP). For new and re-development, the 2001 Los Angeles County MS4 Permit established numeric criteria, requiring the control of a specific volume of runoff from these priority development and redevelopment projects, i.e., the 85th percentile, 24-hour storm volume. In the 2012 Los Angeles County MS4 Permit, Permittees were required to prioritize onsite retention of this runoff and, only if that was infeasible, to use other means (such as flow-through treatment) of controlling that runoff volume. The 1994 Ventura County MS4 Permit provided a general

[144] Building Industry Ass'n of San Diego County v. State Water Resources Control Board (2004) 124 Cal.App.4th 866, 884.

[145] In re City of Irving, Texas, Municipal Storm Sewer System (July 16, 2001) 10 E.A.D. 111 (E.P.A.), *6.

[146] See, e.g., U.S. EPA, *MS4 Permit Improvement Guide* (2010). Prior to issuance of the *MS4 Permit Improvement Guide*, U.S. EPA provided BMP "menus" for the required elements of a MS4 permittee's stormwater management program as required by 40 CFR § 122.26(d)(2)(iv).

requirement that Permittees develop and implement source control BMPs and treatment control BMPs in the areas of land development, industrial, commercial, and construction sites. The 2000 Ventura County MS4 Permit required Permittees to develop and implement a comprehensive stormwater quality management program to reduce the discharge of stormwater pollutants to the MEP. In the 2010 Ventura County MS4 Permit, Permittees were required to implement LID strategies for new development and redevelopment, which would maintain pre-development hydrology and utilize natural controls to reduce stormwater pollution. This is consistent with U.S. EPA's intent that stormwater management programs evolve based on changing conditions from program development and implementation and corresponding improvements in water quality.[147] There is ample evidence of this evolution in stormwater management. Examples include the development of full capture trash control devices in response to the Los Angeles Region Trash TMDLs, innovative media filters for use in outfalls at the Boeing Santa Susana Field Laboratory that have potential municipal applications; and regional scale multi-benefit stormwater capture projects such as the Carriage Crest Park project, which captures stormwater from an 1,146-acre, multi-jurisdictional drainage area for treatment and reclamation at the adjacent wastewater treatment facility.

To provide clarification to the Regional Water Boards, the State Water Board's Office of Chief Counsel issued a memorandum dated February 11, 1993 regarding the "Definition of 'Maximum Extent Practicable'." In the memorandum, the State Water Board interpreted the MEP standard to entail "a serious attempt to comply," and that under the MEP standard, "practical solutions may not be lightly rejected." The memorandum states, "[i]n 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 suggests several factors to be considered when choosing BMPs, including effectiveness, regulatory compliance, public acceptance, cost, and technical feasibility. The memorandum further states that, "[a]fter selecting a menu of BMPs, it is of course the responsibility of the discharger to insure that all BMPs are implemented."

The Order includes programmatic requirements in six areas pursuant to 40 CFR section 122.26(d)(2)(iv), including numeric design standards for stormwater runoff from new development and significant redevelopment consistent with the federal MEP standard (see State Water Board Order WQ 2000-11, the "LA SUSMP Order"). The Order also includes requirements for periodically evaluating and modifying or adding control measures, consistent with the concept that MEP is an evolving and flexible standard.

[147] See, 55 Fed. Reg. 47990, 48052 ("EPA anticipates that storm water management programs will evolve and mature over time."); 64 Fed. Reg. 68722, 68754; Dec. 8, 1999 ("EPA envisions application of the MEP standard as an iterative process."); Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits (Sept. 1, 1996) ("The interim permitting approach uses BMPs in first-round storm water permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards."); Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on LAs" (Nov. 26, 2014) ("In subsequent stormwater permit terms, if the BMPs used during prior years were shown to be inadequate to meet the requirements of the Clean Water Act (CWA), including attainment of applicable water quality standards, the permit would need to contain more specific conditions or limitations.").

B. Water Quality-Based Effluent Limitations (WQBELs)

1. Basis for WQBELs

In addition to requiring that MS4 permits include technology-based requirements consistent with the MEP standard, section 402(p)(3)(B)(iii) of the CWA requires that MS4 permits include "such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants."[148] U.S. EPA interprets this provision to mandate "controls to reduce the discharge of pollutants to the maximum extent practicable, *and where necessary water quality-based controls*."[149] U.S. EPA has reiterated 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."[150] U.S. EPA Region IX has also affirmed the Water Boards' 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.[151] Likewise, the State Water Board has affirmed that MS4 permits must include requirements necessary to achieve compliance with the applicable technology-based standard of MEP and to achieve water quality standards.[152] The permitting agency, be it the Los Angeles Water Board or U.S. EPA, must therefore include provisions in addition to those based on the MEP standard when it finds it is appropriate to do so and to exercise its discretion to determine what permit conditions are necessary to control pollutants in a specific geographic area.

Generally, discharge requirements designed to achieve water quality standards are referred to as water quality-based effluent limitations (WQBELs). A WQBEL is a restriction on the quantity or concentration of a pollutant that may be discharged from a point source into a receiving water that is necessary to achieve an applicable water quality standard in the receiving water.[153] As discussed more fully below, WQBELs may be expressed narratively or numerically.

Federal NPDES regulations require the permitting agency to include WQBELs for point source discharges that cause, have the reasonable potential to cause, or contribute to an excursion above water quality standards.[154] As the State Water

[148] The early iterations (issued from 1990-1996) of the previous MS4 permits for Permittees in Los Angeles and Ventura Counties relied solely upon requirements consistent with the MEP standard to work toward achieving water quality standards. Note that the MEP standard is distinct from a water quality-based standard; each has a different basis. Therefore, while from a practical point of view, the goal of all MS4 permits is to control pollutants in discharges to ultimately achieve water quality standards, water quality based standards are directly derived from this desired outcome, while the MEP standard is anticipated to be a way of working toward the desired outcome, but is not directly derived from it.

[149] Phase I Stormwater Regulations, Final Rule, 55 Fed. Reg. 47990, 47994 (Nov. 16, 1990) (emphasis added); see also *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd*. (2004) 124 Cal.App.4th 866, 882-887.

[150] See, e.g., Phase II Stormwater Regulations, Final Rule, 64 Fed. Reg. 68722, 68737.

[151] See, e.g., letter from Alexis Strauss, Acting Director, Water Division, U.S. EPA Region IX, to Walt Pettit, Executive Director, State Water Board, re: SWRCB/OCC File A-1041 for Orange County, dated January 21, 1998.

[152] See, e.g., State Water Board Orders WQ 99-05, WQ 2001-15, and WQ 2015-0075.

[153] See 40 CFR § 122.2; NPDES Permit Writer's Manual, Appendix A. A WQBEL is distinguished from a technology based effluent limitation (TBEL) in that the basis for the WQBEL is the applicable water quality standard for the receiving water, while the basis for the TBEL is generally the performance of the best available technology.

[154] 40 CFR § 122.44, subds. (d)(1)(i) and (d)(1)(iii).

Board explained in 2001, "Urban runoff is causing and contributing to impacts on receiving waters throughout the state and impairing their beneficial uses....It is not enough simply to apply the technology-based standards of controlling discharges of pollutants to the MEP…."[155] Nearly two decades later, this is still true.

In the Order, WQBELs are included where the Los Angeles Water Board or U.S. EPA has determined that discharges from the MS4 cause, have the reasonable potential to cause, or contribute to an excursion above water quality standards.[156] Reasonable potential can be demonstrated in several ways, one of which is through the TMDL development process. Where a point source is assigned a wasteload allocation (WLA)[157] in a TMDL, the analysis conducted in the development of the TMDL provides the basis for the Los Angeles Water Board or U.S. EPA's determination that the discharge has the reasonable potential to cause or contribute to an exceedance of water quality standards in the receiving water. This approach is affirmed in U.S. EPA's Permit Writer's Manual, which states, "[w]here there is a pollutant with a WLA from a TMDL, a permit writer must develop WQBELs."[158]

The Los Angeles Water Board and U.S. EPA have each established numerous TMDLs to address water quality impairments in the Los Angeles Region. Through the process of developing these TMDLs and assigning wasteload allocations to MS4 discharges in the Los Angeles Region, the Los Angeles Water Board and U.S. EPA have established that MS4 discharges cause or contribute to exceedances of water quality standards. Given the number of Los Angeles Water Board and U.S. EPA established TMDLs for impaired waters in the Los Angeles Region, there is ample evidence that MS4 discharges are a continuing and significant source of pollutants to the impaired receiving waters notwithstanding implementation of stormwater management programs driven by the MEP standard for the last three decades.

Where a TMDL has been established for a particular waterbody, U.S. EPA's NPDES regulations further require that, "when developing water quality-based effluent limits…the permitting authority shall ensure that effluent limits … are consistent with the assumptions and requirements of any available wasteload allocation for the discharge…" (40 CFR § 122.44(d)(1)(vii)(B)). In its 2014 memorandum, *Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs*, U.S. EPA reaffirmed its 2002 interpretation that this regulation requires that "where a State or EPA has established a TMDL, NPDES permits *must* contain effluent limits and conditions consistent with the assumptions and requirements of the WLAs in the TMDL."[159] This is inclusive of stormwater

[155] State Water Board Order WQ 2001-15, pp. 7-8.
[156] 40 CFR §§ 122.44(d)(1)(i)-(iii); 122.44(d)(1)(vii)(B)
[157] "Wasteload allocation" is defined as "[t]he portion of a receiving water's loading capacity that is allocated to one if its existing or future point sources of pollution. WLAs constitute a type of water quality-based effluent limitation." (40 CFR § 130.2(h)).
[158] NPDES Permit Writers' Manual, p. 6-30.
[159] U.S. EPA, Memorandum, "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs,'" (Nov. 26, 2014), p. 6 (emphasis added); see also U.S. EPA, Memorandum, "Establishing Total Maximum Daily Load Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs," (Nov. 22, 2002).

permits – municipal, industrial and construction. U.S. EPA's interpretation of its own regulation is entitled to deference. This requirement that WQBELs must be consistent with the assumptions and requirements of the WLAs means that the permit must include either an equivalent numeric effluent limit or "a measurable, objective BMP-based limit that is projected to achieve the WLA."[160] When a narrative WQBEL in the form of a BMP-based limit is relied upon, "the permit's administrative record needs to provide adequate demonstration that … the BMPs … will be sufficient to implement applicable WLAs. … Improved knowledge of BMP effectiveness … should be reflected in the demonstration and supporting rationale that implementation of the BMPs will attain water quality standards and be consistent with WLAs."[161] Even if this regulation could be read to preclude mandatory incorporation of wasteload allocations into an MS4 permit, effluent limitations consistent with those wasteload allocations are nevertheless required under Clean Water Act section 402(p)(3)(B)(iii)'s direction that the MS4 permit shall require "such other controls" as the permitting authority determines "appropriate for the control of such pollutants."[162]

Finally, California Water Code section 13377 requires that NPDES permits include effluent limitations necessary to implement water quality control plans, including TMDL requirements that have been incorporated into the water quality control plans.[163]

Therefore, the Los Angeles Water Board has included WQBELs in the Order for all pollutants for which a TMDL WLA is assigned to the MS4 discharges and the WQBELs are consistent with the assumptions and requirements of available TMDL WLAs applicable to the Permittees.

2. Expression of WQBELs

While federal law requires the Los Angeles Water Board to include TMDL-based WQBELs in the Order, it does not specify how those WQBELs are to be expressed in MS4 permits. Rather, federal law requires the permitting authority to make that determination as appropriate and necessary for the control of the discharge. In MS4 permits, WQBELs may be expressed either in narrative form (e.g., as requirements to implement specified BMPs) or in numeric form (i.e., as numeric effluent limitations). In the latter, the choice of how to achieve the numeric effluent limitations is left to the permittee.[164] Both types of expression of the WQBELs are

[160] Ibid.
[161] Ibid.
[162] 33 U.S.C. § 1342(p)(3)(B)(iii). See, e.g., State Water Board Orders WQ 91-03, WQ 91-04, WQ 98-01, WQ 99-05, WQ 2001-15, and WQ 2015-0075.
[163] Water Code section 13263, subd. (a) likewise requires waste discharge requirements to implement any relevant water quality control plans that have been adopted. See also *State Water Res. Control Bd. Cases* (2006) 136 Cal. App. 4th 674, 730 (noting the obligation of the water boards to follow the program of implementation included in a water quality control plan).
[164] CWA § 402(p)(3)(B)(iii); 40 CFR § 122.44(k); U.S. EPA. Memorandum, Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs," (Nov. 26, 2014), p. 6. (noting that WQBELs "could take the form of a numeric limit, or of a measurable, objective BMP-based limit that is projected to achieve the WLA"); see also Defenders of Wildlife v. Browner (9th Cir. 1999) 191 F.3d 1159, 1166 (noting 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, and that these requirements may include numeric effluent limitations).

allowed and neither one is more stringent than the other because an equivalent level of implementation of BMPs or other control measures is necessary to comply in either expression of the WQBELs. For example, to address MS4 discharges of trash, the permitting authority may require permittees to implement specific pollutant control measures, such as installing certified full capture systems on storm drains that prevent nearly all trash from reaching receiving waters (e.g., screens that trap particles of a certain size), partial capture devices on storm drains that prevent most trash from reaching receiving waters, or non-structural institutional controls (e.g., street sweeping, sidewalk trash cans, and anti-litter educational and outreach programs), or a combination of these three measures. To comply with this narrative WQBEL expression, a permittee would need to demonstrate that it implemented the required control measures. Alternatively, the permitting authority may establish a numeric limit of zero trash discharged from the MS4. To comply with this numeric WQBEL expression, a permittee would still need to implement pollutant control measures on the ground, and these necessarily would include implementation of certified full capture systems, partial capture systems, or institutional controls, or any combination thereof. Functionally, compliance with either approach requires an equivalent level of implementation, although compliance with numeric WQBELs provides a greater level of flexibility. The Los Angeles Water Board, as the permitting authority, must choose one of these options for each TMDL wasteload allocation and, in doing so, must ensure attainment of the wasteload allocations within the timeframes established in the TMDLs. Whether the WQBELs are expressed narratively or numerically are simply different ways to achieve the same desired water quality outcome.

Although federal regulations authorize the use of BMP-based WQBELs in stormwater permits to control the discharge of pollutants, those federal regulations and U.S. EPA guidance also state that BMP-based WQBELs are appropriate where it is "infeasible" to develop a numeric effluent limitation.[165] At the public hearing for issuance of the 2012 Los Angeles County MS4 Permit, then Associate Director of the Water Division for U.S. EPA Region 9, confirmed that: "[T]he use of the term 'feasible' was to say is it feasible to translate the wasteload allocation into a numeric [effluent limitation] …."[166]

U.S. EPA has issued two memoranda, on November 22, 2002 (2002 U.S. EPA Memorandum) and November 26, 2014 (2014 U.S. EPA Memorandum), providing guidance to permitting authorities on translating TMDL wasteload allocations into WQBELs in NPDES permits for stormwater discharges.[167] The 2002 U.S. EPA Memorandum contemplated that "the NPDES permitting authority will review the information provided by the TMDL . . . and determine whether the effluent limit is appropriately expressed using a BMP approach (including an iterative BMP approach) or a numeric limit."[168] U.S. EPA further stated that it "expects that most WQBELs for NPDES-regulated municipal . . . storm water discharges will be in the

[165] 40 CFR § 122.44(k).

[166] Transcript, Oct. 5, 2012, p. 225.

[167] In addition to the two memoranda, U.S. EPA published guidance titled "Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits" ((Sept. 1996) 61 Federal Register 57425), which recommended inclusion of BMPs in the first two to three rounds of permit issuance, and more specific BMPs or limitations in subsequent permits if the BMPs used during prior years were shown to be inadequate to meet the requirements of the Clean Water Act, including attainment of applicable water quality standards.

[168] 2002 U.S. EPA Memorandum, p. 5.

form of BMPs, and that numeric limits will be used only in rare instances."[169] The 2014 U.S. EPA Memorandum updated aspects of the 2002 U.S. EPA Memorandum and constitutes U.S. EPA's current guidance on this subject. After noting the increased information available to the permitting agencies after more than a decade of experience in setting wasteload allocations and WQBELs, the 2014 U.S. EPA Memorandum explained that:

> Where the TMDL includes WLAs for stormwater sources that provide numeric pollutant loads, the WLA should, where feasible, be translated into effective, measurable WQBELs that will achieve this objective. This could take the form of a numeric limit, or of a measurable, objective BMP-based limit that is projected to achieve the WLA….The permitting authority's decision as to how to express the WQBEL(s), either as numeric effluent limitations or as BMPs, with clear, specific, and measurable elements, should be based on an analysis of the specific facts and circumstances surrounding the permit, and/or the underlying WLA, including the nature of the stormwater discharge, available data, modeling results, and other relevant information.[170]

Where a BMP-based approach to permit limitations is selected, the 2014 U.S. EPA Memorandum noted that the permit's administrative record needs to provide an adequate demonstration that implementation of the BMPs required in the permit will attain water quality standards and be consistent with the WLAs.[171]

As stated in Part II.F of this Fact Sheet, the three previous Orders included WQBELs consistent with the assumptions and requirements of available TMDL WLAs assigned to the Permittees' MS4 discharges.

Except for wasteload allocations associated with certain TMDLs established by U.S. EPA (discussed below), the Los Angeles Water Board has expressed WQBELs in the Order as numeric effluent limitations as the default standard, but alternatively allows permittees the option to demonstrate compliance narratively. Permittees may comply with the numeric WQBELs either by demonstrating compliance with the numeric WQBELs through monitoring or by implementing BMPs in approved Watershed Management Programs. Therefore, in essence, the Permit includes both numeric and narrative WQBELs. The Order contains both approaches to protect water quality and provide compliance flexibility for Permittees, while also following U.S. EPA guidance. Compliance with numeric WQBELs through monitoring and analysis of water samples collected from select representative MS4 discharge points is the default compliance standard. Alternatively, Permittees may develop and implement an approved Watershed Management Program whereby they propose and implement certain approved BMPs that computer modeling demonstrates will meet the applicable numeric WQBELs by specified timeframes.

In determining how to express the WQBELs, the Los Angeles Water Board has analyzed the specific facts and circumstances surrounding the Order and the underlying TMDL WLAs, including the nature of MS4 discharges in the Los Angeles Region, available data, modeling results, and other relevant information. In doing so, the Los Angeles Water Board concludes that WQBELs expressed numerically

[169] *Id*., p. 2.
[170] 2014 U.S. EPA Memorandum, p. 6.
[171] Ibid.

are appropriate and necessary in the Order to achieve the WLAs. MS4 discharges constitute a continuing and significant source of pollutants resulting in exceedances of water quality standards in the Los Angeles Region, as evidenced by the number of TMDLs established for impaired waters in the region and identification of MS4 discharges as a source of that impairment. To date, sole reliance on BMP-based requirements have been insufficient to resolve these exceedances. As such, the Los Angeles Water Board finds that WQBELs expressed numerically are necessary to address the historic and persistent exceedances of water quality standards in the Los Angeles Region.

Further, the Los Angeles Water Board concludes that numeric WQBELs are feasible. In the last 20 years, the Los Angeles Water Board and U.S. EPA have established 45 TMDLs for waterbodies in the Los Angeles Region in which WLAs are assigned to Phase I MS4 discharges. A significant part of developing each TMDL entailed analyzing pollutant sources and allocating loads to those sources using empirical relationships, quantitative modeling, and other relevant information. As noted by the State Water Board when reviewing the numeric WQBELs in the 2012 Los Angeles County MS4 Permit, "In many ways, the Los Angeles MS4 Order was uniquely positioned to incorporate numeric WQBELs because of the extensive TMDL development in the region in the past decade and the documented role of MS4 discharges in contributing to the impairments addressed by those TMDLs."[172] Following the extensive work already conducted to develop the TMDLs, the Los Angeles Water Board continues to conclude that it is feasible to develop numeric WQBELs for MS4 discharges, and that the numeric WQBELs are consistent with the TMDL wasteload allocations. There is ample evidence that BMPs and other control measures can be designed proactively (through modeling) to divert, capture, and/or treat MS4 discharges such that it is possible for any such discharges to ultimately meet the numeric WQBELs according to established compliance schedules. The 7 WMPs and 12 EWMPs developed under the 2012 Los Angeles County MS4 Permit and, in particular, the Reasonable Assurance Analysis done in these WMPs/EWMPs demonstrate this. Further, given the variability in implementation of stormwater management programs across Permittees, numeric WQBELs create a measurable, objective, and accountable means of controlling MS4 discharges, while providing significant flexibility for Permittees to comply with the numeric WQBELs in any lawful manner, including by working with other Permittees as well as other government agencies and entities to implement cost-effective control measures.

While the Los Angeles Water Board finds that inclusion of numeric WQBELs in the Order is appropriate and necessary to achieve compliance with the TMDLs WLAs as required by federal law, at the same time, the Los Angeles Water Board also finds it appropriate to allow permittees to, alternatively and voluntarily, comply with the numeric WQBELs by implementing approved Watershed Management Programs comprised of a suite of BMP-based control measures. Watershed Management Programs must be accompanied by demonstrations, via computer modeling, that the BMPs will meet the numeric WQBELs. This alternative BMP-based option satisfies U.S. EPA's guidance that MS4 permits include "effective, measurable WQBELs…that is projected to achieve the WLA."[173]

[172] Order WQ 2015-0075, p. 59.
[173] 2014 U.S. EPA Memorandum, p. 6.

3. Interim and Final WQBELs

Final WQBELs are included in the Order based on the final WLAs assigned to MS4 discharges in all available TMDLs established for waterbodies in the Los Angeles Region.

MS4 permits can include compliance schedules for achieving final WQBELs derived from TMDL WLAs, so long as the compliance schedule is consistent with the program of implementation for the TMDL established by the Los Angeles Water Board and approved through the State's basin plan amendment process (see Water Code §§ 13242, 13263, 13377). If a compliance schedule in an NPDES permit exceeds one year, it must include interim requirements and the dates for their achievement pursuant to 40 CFR section 122.47. As discussed later in this Fact Sheet, the Los Angeles Water Board is providing compliance schedules longer than one year for various pollutants consistent with TMDL programs of implementation. Where there is a program of implementation for a TMDL adopted by the Los Angeles Water Board and approved through the State's basin plan amendment process, interim WQBELs are included in the Order based on interim WLAs established for MS4 discharges.

VI. RATIONALE FOR TOTAL MAXIMUM DAILY LOAD PROVISIONS

Pursuant to CWA section 402(p)(B)(3)(iii) and 40 CFR section 122.44(d)(1)(vii)(B), the Order includes requirements, including WQBELs, that are consistent with and implement WLAs that are assigned to discharges from the Permittees' MS4s from 45 State-adopted and U.S. EPA-established TMDLs. Permittees are required to comply with the TMDL Provisions in Part IV.B and Attachments K through S of the Order, including WQBELs and receiving water limitations which are consistent with the assumptions and requirements of the TMDL WLAs assigned to discharges from the Permittees' MS4s. A comprehensive list of TMDLs by WMA and the Permittees subject to each TMDL is included in Attachment J of the Order.

A. Clean Water Act Section 303(d) List and Relationship to TMDLs

Clean Water Act section 303(d)(1)(A) requires each State to conduct a biennial assessment of its waters and identify those waters that are not achieving water quality standards. These waters are identified as impaired on the State's Clean Water Act section "303(d) List" of water quality limited segments. Periodically, U.S. EPA approves the State's 303(d) List. Most recently, U.S. EPA approved the State's 2014 and 2016 303(d) List of impaired water bodies on April 6, 2018, which includes certain receiving waters in the Los Angeles Region. Numerous water bodies within Los Angeles and Ventura counties do not meet water quality standards or fully support beneficial uses and therefore have been included on the State's 303(d) List. For each 303(d) listed water body, the state or U.S. EPA is required to establish a Total Maximum Daily Load (TMDL), or implement alternative approaches as defined in U.S. EPA's *Long-Term Vision for Assessment, Restoration and Protection under the Clean Water Act Section 303(d) Program*, for each pollutant impairing the water quality in that water body.[174]

B. TMDLs and Their Implementation Through NPDES Permits

A TMDL is a tool for facilitating attainment of water quality standards and is based on the relationship between pollution sources and in-stream water quality conditions,

[174] Alternative approaches to TMDLs include placement of a waterbody-pollutant combination in Category 4B of the 303(d) List or adoption of a Watershed Plan for nonpoint sources of pollution. Currently there are no alternative approaches adopted for the Los Angeles Region that apply to Phase I MS4 discharges.

thereby providing the basis to establish water quality-based controls. A TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards and allocates the acceptable pollutant load to point and nonpoint sources. The elements of a TMDL are described in 40 CFR sections 130.2 and 130.7. A TMDL is defined as "the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background." (40 CFR § 130.2(i).) MS4 discharges are considered point source discharges.

Regulations further require that TMDLs must be set at "levels necessary to attain and maintain the applicable narrative and numeric water quality standards with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality." (40 CFR section 130.7(c)(1).) 40 CFR section 130.7 also states that TMDLs shall take into account critical conditions for stream flow, loading and water quality parameters. These controls should provide the pollution reduction necessary for a water body to attain water quality standards. Essentially, TMDLs serve as a backstop provision of the Clean Water Act designed to ensure attainment of water quality standards when other provisions, such as technology-based effluent limitations, have failed to achieve water quality standards.

Upon establishment of TMDLs by the State or the U.S. EPA, the State is required to incorporate, or reference, the TMDLs in the State Water Quality Management Plan. (40 CFR sections 130.6(c)(1) and 130.7.) The Los Angeles Water Board's Basin Plan, and applicable statewide water quality control plans, serves as the State Water Quality Management Plan governing the watersheds under the jurisdiction of the Los Angeles Water Board. When adopting TMDLs as part of its Basin Plan, the Los Angeles Water Board includes, as part of the TMDL, a program for implementation of the WLAs for point sources and load allocations (LAs) for nonpoint sources.

TMDLs are not self-executing, but instead rely upon further Board orders to impose pollutant restrictions on discharges to achieve the TMDL's WLAs. Section 402(p)(3)(B)(iii) of the Clean Water Act requires the Los Angeles Water Board to impose permit conditions, including: "management practices, control techniques and system, design and engineering methods, and *such other provisions as the Administrator of the State determines appropriate for the control of such pollutants*." (emphasis added.) Section 402(a)(1) of the Clean Water Act 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 include water quality-based effluent limitations consistent with the assumptions and requirements of any available waste load allocation for the discharge. (40 CFR section 122.44(d)(1)(vii)(B).) U.S. EPA has consistently stated that this regulation applies to all permitted stormwater discharges, including MS4 permits.[175] Similarly, state law requires that the Los Angeles Water Board implement its Basin Plan when adopting waste discharge requirements (WDRs) and that NPDES permits apply "any more stringent effluent standards or limitations necessary to implement water quality control plans…" (Cal. Wat. Code, §§ 13263, 13377). In precedential State Water Board Order WQ 99-05, the State Water Board exercised its discretion under federal law by requiring MS4s to comply with water quality standards. In precedential Order WQ 2015-0075, the State Water Board reaffirmed that it would continue to require water quality standards compliance in MS4 permits. These

[175] U.S. EPA Memorandum, "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those TMDLs,'" p. 6 (Nov. 26, 2014).

precedential orders are relevant as a TMDL, by its very nature, sets forth a plan for an impaired water body to achieve water quality standards.

An NPDES permit should include clear, specific, and measurable permit requirements, and where feasible, incorporate TMDL WLAs as numeric WQBELs.[176] Where a non-numeric permit limitation is selected, such as BMPs, the permit's fact sheet and administrative record must support the expectation that the BMPs are sufficient to achieve the WLAs.[177] (40 CFR § 124.8.) U.S. EPA has published guidance for establishing WLAs for stormwater discharges in TMDLs and their incorporation as numeric WQBELs, where feasible, in MS4 permits.[178]

C. TMDL Provisions

As required, WQBELs and receiving water limitations included in the Order and Attachments K through S are consistent with the assumptions and requirements of the available WLAs assigned to MS4 discharges in the Los Angeles Region, which have been established in forty-five (45) TMDLs. The Los Angeles Water Board established thirty-five (35) TMDLs and U.S. EPA established ten (10) TMDLs that assign WLAs to MS4 Permittees within the counties of Los Angeles and Ventura. These TMDLs identify MS4 discharges as a source of pollutants to these water bodies and, as required, establish WLAs for MS4 discharges to reduce the amount of pollutants discharged to receiving waters. While the TMDLs established by the Los Angeles Water Board include a program of implementation, including actions to be taken and a time schedule for such actions, TMDLs established by U.S. EPA do not. To date, the Los Angeles Water Board adopted three programs of implementation pursuant to Water Code sections 13240 and 13242 for four (4) U.S. EPA-established TMDLs. The TMDLs and programs of implementation included in the Regional MS4 Permit, along with establishment, approval, and effective dates, are listed in Table F-24 below.

The 2010 Ventura County MS4 Permit incorporated WQBELs and other permit requirements for thirteen (13) TMDLs. The Regional MS4 Permit continues to include WQBELs for all these TMDLs. The Regional MS4 Permit also continues to include other permit requirements for these TMDLs, except for the Calleguas Creek Nitrogen Compounds and Related Effects TMDL (Calleguas Creek Nitrogen TMDL). The Calleguas Creek Nitrogen TMDL identifies stormwater discharges as a minor source of nitrogen to Calleguas Creek; therefore, the TMDL did not assign WLAs to MS4 dischargers. The 2010 Ventura County MS4 Permit thus did not include WQBELs for this TMDL and the Regional MS4 Permit continues to not include WQBELs for this TMDL. However, monitoring requirements for the Calleguas Creek Nitrogen TMDL were included in the 2010 Ventura County MS4 Permit. The monitoring data from 2009 to 2017 had an exceedance rate of less than 1% of Nitrate as Nitrogen plus Nitrite as Nitrogen (1 exceedance out of 108 samples) at the monitored outfalls. Therefore, the Regional MS4 Permit does not include monitoring requirements for the Calleguas Creek Nitrogen TMDL.

The 2012 Los Angeles County MS4 Permit included WQBELs, receiving water limitations, and other permit requirements for thirty-three (33) TMDLs. The Regional MS4 Permit continues to include WQBELs, receiving water limitations, and other permit

[176] *Id.*, p. 3.
[177] *Id.*, p. 6.
[178] U.S. EPA Memorandum, "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those TMDLs'," Nov. 26, 2014.

requirements for all these TMDLs, except for the Bacterial Indicator TMDLs for Middle Santa Ana River Watershed (Middle Santa Ana River Bacteria TMDL). On August 26, 2005, the Santa Ana Regional Water Quality Control Board (Santa Ana Water Board) established the Middle Santa Ana River Bacteria TMDL, which assigned WLAs to the cities of Claremont and Pomona. The cities of Claremont and Pomona are located within the Los Angeles Water Board's jurisdictional boundaries, but portions of their MS4 discharges drain to the Middle Santa Ana River Watershed. The 2012 Los Angeles County MS4 Permit contained WQBELs, receiving water limitations, and other permit requirements for the cities of Claremont and Pomona consistent with the Middle Santa Ana River Bacteria TMDL, but provided that the WQBELs, receiving water limitations, and other permit requirements would not be applicable during the effective dates of any NPDES permit that is issued by the Santa Ana Water Board. Pursuant to a valid and enforceable designation agreement between the Los Angeles Water Board and the Santa Ana Water Board under Water Code section 13228, dated May 31, 2013, the Santa Ana Water Board was designated as the regulator of discharges of bacteria from the cities of Claremont and Pomona through their MS4 to receiving waters within the Middle Santa Ana River Watershed. Therefore, the Regional MS4 Permit does not include WQBELs and other permit requirements implementing the Middle Santa Ana River Bacteria TMDL.

The 2014 City of Long Beach MS4 Permit included WQBELs and other permit requirements for nine (9) TMDLs, all of which continue to be included in the Regional MS4 Permit.

In addition, there are new TMDLs that the Los Angeles Water Board established, or U.S. EPA established, after the previous MS4 permits were issued. Table F-24 and Table F-25 below list all the TMDLs that are in the Order. Table F-25 indicates which TMDLs were in previous MS4 permits and which TMDLs are new to the Regional MS4 Permit.

Table F-24. Incorporated TMDLs and Programs of Implementation

Total Maximum Daily Load	Resolution Number	Adoption Date	State Water Board Resolution Number	State Water Board Approval Date	OAL Approval Date	U.S. EPA Approval Date	Effective Date
VENTURA RIVER WATERSHED							
Ventura River Estuary Trash TMDL	R4-2007-008	6/7/2007	2007-0072	12/4/2007	2/11/2008	2/27/2008	3/6/2008
Ventura River Estuary Trash TMDL (Revised)	R19-005	6/13/2019	2020-0002	1/21/2020	---	---	---
TMDL for Algae, Eutrophic Conditions, and Nutrients in the Ventura River and its Tributaries	R12-011	12/6/2012	2013-0005	2/19/2013	6/4/2013	6/28/2013	6/28/2013
MISCELLANEOUS VENTURA COASTAL WMA							
Harbor Beaches of Ventura County Bacteria TMDL	R2007-017	11/1/2007	2008-0072	10/7/2008	12/9/2008	12/18/2008	12/18/2008
SANTA CLARA RIVER WATERSHED							
Santa Clara River Nitrogen Compounds TMDL	03-011	8/7/2003	2003-0073	11/19/2003	2/27/2004	3/18/2004	3/23/2004
Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL	R10-006	7/8/2010	2011-0048	10/4/2011	12/19/2011	1/13/2012	3/21/2012
TMDL for Chloride in the Santa Clara River, Reach 3 (U.S. EPA established)	N/A	N/A	N/A	N/A	N/A	6/18/2003	6/18/2003
Upper Santa Clara River Chloride TMDL	R14-010	10/9/2014	2014-0069	12/16/2014	3/18/2015	4/28/2015	4/28/2015
Lake Elizabeth, Munz Lake, and Lake Hughes Trash TMDL (Lake Elizabeth only)	R4-2007-009	6/7/2007	2007-0073	12/4/2007	2/8/2008	2/27/2008	3/6/2008
Lake Elizabeth, Munz Lake, and Lake Hughes Trash TMDL (Lake Elizabeth only) (Revised)	R19-005	6/13/2019	2020-0002	1/21/2020	---	---	---

Total Maximum Daily Load	Resolution Number	Adoption Date	State Water Board Resolution Number	State Water Board Approval Date	OAL Approval Date	U.S. EPA Approval Date	Effective Date
Santa Clara River Lakes Nutrients TMDL (Lake Elizabeth only)	R16-006	9/8/2016	2017-0011	3/7/2017	6/22/2017	6/27/2017	6/27/2017
CALLEGUAS CREEK WATERSHED							
TMDL for Organochlorine (OC) Pesticides, Polychlorinated Biphenyls (PCBs), and Siltation in Calleguas Creek, Its Tributaries, and Mugu Lagoon	R4-2005-010	7/7/2005	2005-0068	9/22/2005	1/20/2006	3/14/2006	3/24/2006
TMDL for Toxicity, Chlorpyrifos, and Diazinon in the Calleguas Creek, its Tributaries, and Mugu Lagoon	R4-2005-009	7/7/2005	2005-0067	9/22/2005	12/27/2005	3/14/2006	3/24/2006
TMDL for Metals and Selenium in Calleguas Creek, its Tributaries, and Mugu Lagoon	R16-007	10/13/2016	2017-0007	2/22/2017	5/18/2017	6/9/2017	6/23/2017
Revolon Slough and Beardsley Wash Trash TMDL	R18-005	6/14/2018	2019-0018	5/21/2019	4/2/2020	5/6/2020	5/6/2020
TMDL for Boron, Chloride, Sulfate, and TDS (Salts) in the Calleguas Creek Watershed	R4-2007-016	10/4/2007	2008-0033	5/20/2008	11/6/2008	12/2/2008	12/2/2008
TMDLs for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3 (U.S. EPA established)	N/A	N/A	N/A	N/A	N/A	10/6/2011	10/6/2011

Total Maximum Daily Load	Resolution Number	Adoption Date	State Water Board Resolution Number	State Water Board Approval Date	OAL Approval Date	U.S. EPA Approval Date	Effective Date
SANTA MONICA BAY WMA							
Santa Monica Bay Beaches Bacteria TMDL	R12-007	6/7/2012	2013-0008	3/19/2013	11/7/2013	7/2/2014	7/2/2014
Santa Monica Bay Beaches Bacteria TMDL (Revised)	R21-001	3/11/2021	---	---	---	---	---
Santa Monica Bay Nearshore and Offshore Debris TMDL	R10-010	11/4/2010	2011-0064	12/6/2011	3/15/2012	3/20/2012	3/20/2012
Santa Monica Bay Nearshore and Offshore Debris TMDL (Revised)	R19-004	3/14/2019	2020-0001	1/21/2020	---	---	---
Santa Monica Bay TMDL for DDTs and PCBs (U.S. EPA established)	N/A	N/A	N/A	N/A	N/A	3/26/2012	3/26/2012
MALIBU CREEK SUBWATERSHED							
Malibu Creek and Lagoon Bacteria TMDL	R12-009	6/7/2012	2013-0008	3/19/2013	11/8/2013	7/2/2014	7/2/2014
Malibu Creek and Lagoon Bacteria TMDL (Revised)	R21-001	3/11/2021	---	---	---	---	---
Malibu Creek Watershed Trash TMDL	R18-006	6/14/2018	2019-0017	5/21/2019	4/2/2020	5/6/2020	5/6/2020
TMDLs for Nutrients - Malibu Creek Watershed (U.S. EPA established)	N/A	N/A	N/A	N/A	N/A	3/21/2003	3/21/2003
Malibu Creek & Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Community Impairments (U.S. EPA established)	N/A	N/A	N/A	N/A	N/A	7/2/2013	7/2/2013
Program of Implementation for the U.S. EPA-	R16-009	12/8/2016	2017-0008	2/22/2017	5/16/2017	N/A	5/16/2017

Total Maximum Daily Load	Resolution Number	Adoption Date	State Water Board Resolution Number	State Water Board Approval Date	OAL Approval Date	U.S. EPA Approval Date	Effective Date
Established Malibu Creek Nutrients TMDL and the U.S. EPA-Established Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments							
Program of Implementation for the U.S. EPA-Established Malibu Creek Nutrients TMDL and the U.S. EPA-Established Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments (Revised)	R21-001	3/11/2021	---	---	---	---	---
BALLONA CREEK SUBWATERSHED							
Ballona Creek Trash TMDL	R15-006	6/11/2015	2015-0068	11/17/2015	5/4/2016	6/30/2016	6/30/2016
Ballona Creek Estuary Toxic Pollutants TMDL	R13-010	12/5/2013	2014-0030	6/17/2014	5/4/2015	10/26/2015	10/26/2015
Ballona Creek Estuary Toxic Pollutants TMDL (Revised)	R21-001	3/11/2021	---	---	---	---	---
Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL	R12-008	6/7/2012	2013-0008	3/19/2013	11/8/2013	7/2/2014	7/2/2014
Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL (Revised)	R21-001	3/11/2021	---	---	---	---	---

Total Maximum Daily Load	Resolution Number	Adoption Date	State Water Board Resolution Number	State Water Board Approval Date	OAL Approval Date	U.S. EPA Approval Date	Effective Date
Ballona Creek Metals TMDL	R13-010	12/5/2013	2014-0030	6/17/2014	5/4/2015	10/26/2015	10/26/2015
Ballona Creek Metals TMDL (Revised)	R21-001	3/11/2021	---	---	---	---	---
Ballona Creek Wetlands TMDL for Sediments and Invasive Exotic Vegetation (U.S. EPA established)	N/A	N/A	N/A	N/A	N/A	3/26/2012	3/26/2012
MARINA DEL REY SUBWATERSHED							
Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL	R12-007	6/7/2012	2013-0008	3/19/2013	11/7/2013	7/2/2014	7/2/2014
Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL (Revised)	R21-001	3/11/2021	---	---	---	---	---
Marina del Rey Harbor Toxic Pollutants TMDL	R14-004	2/6/2014	2014-0049	9/9/2014	5/4/2015	10/16/2015	10/16/2015
Marina del Rey Harbor Toxic Pollutants TMDL (Revised)	R21-001	3/11/2021	---	---	---	---	---
DOMINGUEZ CHANNEL AND GREATER HARBORS WATERS WATERSHED							
Los Angeles Harbor Bacteria TMDL (Inner Cabrillo Beach and Main Ship Channel)	R12-007	6/7/2012	2013-0008	3/19/2013	11/7/2013	7/2/2014	7/2/2014
Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL	R11-008	5/5/2011	2012-0008	2/7/2012	3/21/2012	3/23/2012	3/23/2012
MACHADO LAKE SUBWATERSHED							

Total Maximum Daily Load	Resolution Number	Adoption Date	State Water Board Resolution Number	State Water Board Approval Date	OAL Approval Date	U.S. EPA Approval Date	Effective Date
Machado Lake Trash TMDL	R4-2007-006	6/7/2007	2007-0075	12/4/2007	2/8/2008	2/27/2008	3/6/2008
Machado Lake Trash TMDL (Revised)	R19-004	3/14/2019	2020-0001	1/21/2020	---	---	---
Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL	R08-006	5/1/2008	2008-0089	12/2/2008	2/19/2009	3/11/2009	3/11/2009
Machado Lake Pesticides and PCBs TMDL	R10-008	9/2/2010	2011-0065	12/6/2011	2/29/2012	3/20/2012	3/20/2012
LOS ANGELES RIVER WATERSHED							
Los Angeles River Watershed Trash TMDL	R15-006	6/11/2015	2015-0068	11/17/2015	5/4/2016	6/30/2016	6/30/2016
Los Angeles River Nitrogen Compounds and Related Effects TMDL	R12-010	12/6/2012	2013-0016	6/4/2013	6/9/2014	8/7/2014	8/7/2014
Los Angeles River and Tributaries Metals TMDL	R15-004	4/9/2015	2015-0069	11/17/2015	7/11/2016	12/12/2016	12/12/2016
Los Angeles River Watershed Bacteria TMDL	R10-007	7/9/2010	2011-0056	11/1/2011	3/21/2012	3/23/2012	3/23/2012
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL (U.S. EPA established)	N/A	N/A	N/A	N/A	N/A	3/26/2012	3/26/2012
Legg Lake Trash TMDL	R4-2007-010	6/7/2007	2007-0074	12/4/2007	2/5/2008	2/27/2008	3/6/2008
Legg Lake Trash TMDL (Revised)	R19-005	6/13/2019	2020-0002	1/21/2020	---	---	---

Total Maximum Daily Load	Resolution Number	Adoption Date	State Water Board Resolution Number	State Water Board Approval Date	OAL Approval Date	U.S. EPA Approval Date	Effective Date
Los Angeles Area Lakes TMDLs (U.S. EPA established for Legg Lake, Lake Calabasas, Echo Park Lake, and Peck Road Park Lake)	N/A	N/A	N/A	N/A	N/A	3/26/2012	3/26/2012
SAN GABRIEL RIVER WATERSHED							
San Gabriel River and Impaired Tributaries Metals and Selenium TMDL (U.S. EPA established)	N/A	N/A	N/A	N/A	N/A	3/26/2007	3/26/2007
Program of Implementation for the TMDLs for Metals and Selenium in the San Gabriel River and Impaired Tributaries	R13-004	6/6/2013	2014-0012	3/4/2014	10/13/2014	5/11/2017	10/13/2014
San Gabriel River, Estuary and Tributaries Indicator Bacteria TMDL	R15-005	6/10/2015	2015-0067	11/17/2015	4/14/2016	6/14/2016	6/14/2016
Los Angeles Area Lakes TMDLs (U.S. EPA established for Puddingstone Reservoir)	N/A	N/A	N/A	N/A	N/A	3/26/2012	3/26/2012
LOS CERRITOS CHANNEL AND ALAMITOS BAY WATERSHED							
Los Cerritos Channel Metals TMDL (U.S. EPA established)	N/A	N/A	N/A	N/A	N/A	3/17/2010	3/17/2010
Program of Implementation for the TMDLs for Metals in Los Cerritos Channel	R13-004	6/6/2013	2014-0012	3/4/2014	10/13/2014	5/11/2017	10/13/2014
Colorado Lagoon OC Pesticides, PCBs,	R09-005	10/1/2009	2010-0056	11/16/2010	5/6/2011	6/14/2011	7/28/2011

Total Maximum Daily Load	Resolution Number	Adoption Date	State Water Board Resolution Number	State Water Board Approval Date	OAL Approval Date	U.S. EPA Approval Date	Effective Date
Sediment Toxicity, PAHs and Metals TMDL							

Table F-25. Status of TMDLs in the Regional MS4 Permit and Previous MS4 Permits

TOTAL MAXIMUM DAILY LOAD	NEW TO REGIONAL MS4 PERMIT	2012 LA COUNTY MS4 PERMIT	2014 CITY OF LONG BEACH MS4 PERMIT	2010 VENTURA COUNTY MS4 PERMIT
VENTURA RIVER WATERSHED				
Ventura River Estuary Trash TMDL				X
Total Maximum Daily Load for Algae, Eutrophic Conditions, and Nutrients in the Ventura River and its Tributaries	X			
MISCELLANEOUS VENTURA COASTAL WMA				
Harbor Beaches of Ventura County Bacteria TMDL				X
SANTA CLARA RIVER WATERSHED				
Santa Clara River Nitrogen Compounds TMDL		X		X
Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL		X		
TMDL for Chloride in the Santa Clara River, Reach 3 (U.S. EPA established)				X
Upper Santa Clara River Chloride TMDL		X		X
Lake Elizabeth, Munz Lake, and Lake Hughes Trash TMDL (Lake Elizabeth only)		X		
Santa Clara River Lakes Nutrients TMDL (Lake Elizabeth only)	X			
CALLEGUAS CREEK WATERSHED				
TMDL for Organochlorine (OC) Pesticides, Polychlorinated Biphenyls (PCBs), and Siltation in Calleguas Creek, Its Tributaries, and Mugu Lagoon				X

TOTAL MAXIMUM DAILY LOAD	NEW TO REGIONAL MS4 PERMIT	2012 LA COUNTY MS4 PERMIT	2014 CITY OF LONG BEACH MS4 PERMIT	2010 VENTURA COUNTY MS4 PERMIT
TMDL for Toxicity, Chlorpyrifos, and Diazinon in the Calleguas Creek, its Tributaries, and Mugu Lagoon				X
TMDL for Metals and Selenium in Calleguas Creek, its Tributaries, and Mugu Lagoon				X
Revolon Slough and Beardsley Wash Trash TMDL				X
TMDL for Boron, Chloride, Sulfate, and TDS (Salts) in the Calleguas Creek Watershed				X
TMDLs for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3 (U.S. EPA established)	X			
SANTA MONICA BAY WMA				
Santa Monica Bay Beaches Bacteria TMDL		X		
Santa Monica Bay Nearshore and Offshore Debris TMDL		X		
Santa Monica Bay TMDL for DDTs and PCBs (U.S. EPA established)		X		
MALIBU CREEK SUBWATERSHED				
Malibu Creek and Lagoon Bacteria TMDL		X		X
Malibu Creek Watershed Trash TMDL		X		
TMDLs for Nutrients - Malibu Creek Watershed (U.S. EPA established)		X		X
Malibu Creek & Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Community Impairments (U.S. EPA established)	X			
BALLONA CREEK SUBWATERSHED				
Ballona Creek Trash TMDL		X		
Ballona Creek Estuary Toxic Pollutants TMDL		X		
Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL		X		
Ballona Creek Metals TMDL		X		
Ballona Creek Wetlands TMDL for Sediments and Invasive Exotic Vegetation (U.S. EPA established)		X		
MARINA DEL REY SUBWATERSHED				

TOTAL MAXIMUM DAILY LOAD	NEW TO REGIONAL MS4 PERMIT	2012 LA COUNTY MS4 PERMIT	2014 CITY OF LONG BEACH MS4 PERMIT	2010 VENTURA COUNTY MS4 PERMIT
Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL		X		
Marina del Rey Harbor Toxic Pollutants TMDL		X		
DOMINGUEZ CHANNEL AND GREATER HARBORS WATERS WATERSHED				
Los Angeles Harbor Bacteria TMDL (Inner Cabrillo Beach and Main Ship Channel)		X		
Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL		X	X	
MACHADO LAKE SUBWATERSHED				
Machado Lake Trash TMDL		X		
Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL		X		
Machado Lake Pesticides and PCBs TMDL		X		
LOS ANGELES RIVER WATERSHED				
Los Angeles River Watershed Trash TMDL		X	X	
Los Angeles River Nitrogen Compounds and Related Effects TMDL		X	X	
Los Angeles River and Tributaries Metals TMDL		X	X	
Los Angeles River Watershed Bacteria TMDL		X	X	
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL (U.S. EPA established)		X	X	
Legg Lake Trash TMDL		X		
Los Angeles Area Lakes TMDLs (U.S. EPA established for Legg Lake, Lake Calabasas, Echo Park Lake, and Peck Road Park Lake)		X		
SAN GABRIEL RIVER WATERSHED				
San Gabriel River and Impaired Tributaries Metals and Selenium TMDL (U.S. EPA established)		X	X	
San Gabriel River, Estuary and Tributaries Indicator Bacteria TMDL	X			

TOTAL MAXIMUM DAILY LOAD	NEW TO REGIONAL MS4 PERMIT	2012 LA COUNTY MS4 PERMIT	2014 CITY OF LONG BEACH MS4 PERMIT	2010 VENTURA COUNTY MS4 PERMIT
Los Angeles Area Lakes TMDLs (U.S. EPA established for Puddingstone Reservoir)		X		
LOS CERRITOS CHANNEL AND ALAMITOS BAY WATERSHED				
Los Cerritos Channel Metals TMDL (U.S. EPA established)		X	X	
Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs and Metals TMDL		X	X	

D. Manner of TMDL Incorporation

The TMDLs incorporated into the Order express WLAs in different ways. In general, a WLA is a pollutant threshold that must be achieved in order to ensure that water quality standards are attained in the receiving water. The WLA may be expressed in terms of mass or concentration of a pollutant. However, in some cases, a WLA may be expressed as a receiving water condition such as an allowable number of exceedance days of the bacteria water quality objectives.

In the Order, TMDL WLAs have been translated into WQBELs and/or receiving water limitations that are consistent with the assumptions and requirements of the TMDL WLAs. The assumptions and requirements include, but are not limited to, numeric values and averaging periods. For those TMDLs that do not specify averaging periods for the WLAs, the averaging period for the WQBELs and/or receiving water limitations in the Order are based on the averaging period for the TMDL numeric targets. For each TMDL pollutant category, to the extent possible, the WLAs have been incorporated into the Order in a consistent manner. Some TMDLs specify alternative means of demonstrating compliance with WLAs; these alternative means of demonstrating compliance are included in the TMDL provisions in Part IV.B and Attachments K through S of the Order. The manner of incorporation for each TMDL pollutant category is discussed below in more detail.

A number of the TMDLs for various categories of pollutants such as bacteria, metals, and toxics establish WLAs that are assigned jointly to a group of Permittees whose stormwater and/or non-stormwater discharges are or may be commingled in the MS4 prior to discharge to the receiving water subject to the TMDL. TMDLs address commingled MS4 discharges by assigning a WLA to a group of MS4 Permittees based on co-location within the same subwatershed.

The applicability of TMDLs to Permittees as specified in Attachment J of the Order is consistent with the previous MS4 permits and the TMDLs. Where a TMDL assigns WLAs to categories of certain types of discharges or dischargers (e.g., MS4 permittees), but does not specifically name the “responsible Permittees”, current GIS data, drainage area boundaries, and other relevant information have been used to determine the applicability of a categorical WLA to individual Permittees.

1. Expression of Bacteria TMDLs as Permit Limitations

Ten bacteria TMDLs are incorporated into the Regional MS4 Permit as listed below:

- Harbor Beaches of Ventura County Bacteria TMDL (Attachment L)
- Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL (Attachment M)
- Santa Monica Bay Beaches Bacteria TMDL (Attachment O)
- Malibu Creek and Lagoon Bacteria TMDL (Attachment O)
- Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL (Attachment O)
- Marina del Rey Harbor Mothers’ Beach and Back Basins Bacteria TMDL (Attachment O)
- Los Angeles Harbor Bacteria TMDL (Attachment P)
- Los Angeles River Watershed Bacteria TMDL (Attachment Q)

- Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL – U.S. EPA Established TMDL (Attachment Q)
- San Gabriel River, Estuary and Tributaries Indicator Bacteria TMDL (Attachment R)

In general, the bacteria TMDLs express the WLAs as an allowable number of exceedance days of the bacteria water quality objectives within the water body; therefore, the WLAs are translated into receiving water limitations. In addition to the receiving water limitations, WQBELs for MS4 outfalls are established to allow the opportunity for Permittees to individually demonstrate compliance at an outfall or jurisdictional boundary, thus isolating the Permittee's pollutant contributions from those of other Permittees and from other pollutant sources to the receiving water. The WQBELs are based on the bacteria water quality objectives in the Basin Plan at the time the TMDL was established.[179] For the bacteria TMDLs that apply to marine and ocean waters,[180] the WQBELs are based on the multi-part bacteriological water quality objectives for total coliform, fecal coliform and enterococcus. For the bacteria TMDLs for freshwater,[181] the WQBELs are based on the bacteria water quality objectives for *E. coli*. No exceedances of the WQBELs are permitted unless expressly authorized by the TMDL (e.g., Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL). The rationale for not allowing any exceedances of the WQBELs is that MS4 outfalls are monitored less frequently than the receiving waters, which are generally sampled at least weekly. According to the equations used to express WLAs as allowable exceedance days in the bacteria TMDLs, as the frequency of monitoring decreases, the allowable number of exceedance days approaches zero, such that water quality objectives must be met for each monitoring event. Given the frequency at which outfalls are monitored, the allowable number of exceedance days for outfalls is zero and

[179] In 2018, the State Water Board adopted statewide bacteria water quality objectives and implementation provisions to protect recreational users from the effects of pathogens in California water bodies (Bacteria Provisions). The Bacteria Provisions supersede numeric REC-1 water quality objectives for bacteria contained in a basin plan prior to the effective date of the Bacteria Provisions (February 4, 2019). The Los Angeles Water Board incorporated these Bacteria Provisions into the Basin Plan. The Bacteria Provisions did not change bacteria TMDLs established before February 4, 2019 and these TMDLs remain in effect. The Los Angeles Water Board may convene a public meeting to evaluate the effectiveness of these TMDLs in attaining the Bacteria Provisions at a later date.

[180] These include: Harbor Beaches of Ventura County Bacteria TMDL (Attachment L); Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL (discharges to the Santa Clara River Estuary and Santa Clara River Reaches 1 and 2) (Attachment M); Santa Monica Bay Beaches Bacteria TMDL (Attachment O); Malibu Creek and Lagoon Bacteria TMDL (discharges to the Lagoon) (Attachment O); Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL (discharges to the Estuary) (Attachment O); Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL (Attachment O); Los Angeles Harbor Bacteria TMDL (Attachment P); Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL – U.S. EPA Established TMDL (Attachment Q); and San Gabriel River, Estuary, and Tributaries Indicator Bacteria TMDL (discharges to the San Gabriel River Estuary) (Attachment R).

[181] These include: Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL (discharges to Santa Clara River Reaches 3 and above) (Attachment M); Malibu Creek and Lagoon Bacteria TMDL (Malibu Creek discharges) (Attachment O); Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL (Ballona Creek and Sepulveda Channel discharges) (Attachment O); Los Angeles River Watershed Bacteria TMDL (Attachment Q); and the San Gabriel River, Estuary and Tributaries Indicator Bacteria TMDL (discharges to the San Gabriel River and tributaries) (Attachment R).

therefore no exceedances of the WQBELs are permitted unless otherwise specified.

The following TMDLs require additional discussion either because the manner of incorporation has changed from previous MS4 permits or information in the TMDL regarding the naming of responsible Permittees requires clarification.

Santa Monica Bay Beaches Bacteria TMDL, Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL, Los Angeles Harbor Bacteria TMDL, and Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL. A change that was made in the Order from the way these bacteria TMDLs were previously incorporated into the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit is the removal of open beach compliance locations. Since the Order regulates MS4 discharges, only sampling sites that are or could be impacted by an MS4 discharge are included as receiving water compliance locations. MS4 compliance locations are defined as sites that are within 400 yards of storm drain outfalls.[182] Open beach sites are regulated under a different mechanism, such as the Nonpoint Source Program.

For the Santa Monica Bay Beaches Bacteria TMDL (SMB Bacteria TMDL) specifically, the removal of open beach compliance locations affects the calculation of the interim wet-weather single sample indicator bacteria receiving water limitations for each jurisdictional group. The SMB Bacteria TMDL's interim wet-weather milestones were based on a cumulative percentage reduction from the total wet-weather exceedance-day reductions required for each jurisdictional group. These reduction milestones were translated into the number of exceedance days to be reduced plus the number of annual allowable wet-weather exceedance days for each jurisdictional group. By July 15, 2018, the SMB Bacteria TMDL required each jurisdictional group to achieve a 50% cumulative percent reduction from the total wet-weather exceedance-day reductions required for each jurisdictional group as defined in Table 7-4.2b of the Basin Plan . Table 7-4.2b defines each jurisdictional group and the monitoring sites assigned to that group, which includes both open beach and MS4 compliance locations. The Order incorporates the SMB Bacteria TMDL interim wet-weather milestones as interim wet-weather receiving water limitations to be achieved by the effective date of the Order. For each jurisdictional group, the interim wet-weather receiving water limitations have been recalculated to remove open beach compliance locations. In addition, for MS4 compliance locations that are sampled weekly instead of daily, the interim wet-weather receiving water limitations have been scaled according to equation 8.2 in the Santa Monica Bay Beaches Wet-Weather Bacteria TMDL staff report dated November 7, 2002.

Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL (SCR Bacteria TMDL). Unlike other bacteria TMDLs, the SCR Bacteria TMDL only provided values for allowable exceedance days when daily sampling is conducted and provided equations to calculate values for more or less frequent sampling. Interim annual allowable exceedance days of the single sample water quality objective are calculated for daily, weekly, and less than weekly (3 wet and 2 dry weather) sampling frequencies according to the equation included in Table 7-36.3 of the Basin Plan. Final annual allowable exceedance days are calculated for daily

[182] "An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay." Santa Monica Bay Restoration Project.

and weekly sampling frequencies according to the equation included in Table 7-36.2 of the Basin Plan.

The SCR Bacteria TMDL identifies wet weather as the critical condition. However, the TMDL did not define the wet-weather period. Therefore, the wet-weather period for the SCR Bacteria TMDL is determined based on the same approach as the Santa Monica Bay Beaches Bacteria TMDL (a day with 0.1 inch of rain or greater and the three days following the rain event).[183]

The Order identifies the City of Oxnard as one of the responsible Permittees for the SCR Bacteria TMDL even though the TMDL contains conflicting direction about the inclusion of the City of Oxnard. While the TMDL assigns WLAs to different general categories of pollutants[184], the implementation section of the TMDL does not specifically name the City of Oxnard as one of the entities responsible for MS4 WLAs.[185] However, the TMDL Staff Report does name the City of Oxnard as one of the entities responsible for MS4 WLAs[186] and shows the City as discharging to Reach 1 and Reach 2, which drain to the Estuary, in Figure 2-1 of the TMDL Staff Report[187]. Therefore, including the City of Oxnard as a responsible Permittee for the SCR Bacteria TMDL is consistent with the assumptions and requirements of the TMDL.

The Order includes indicator bacteria WQBELs for MS4 dischargers that discharge to Reaches 3 or above based on allowable exceedance days for Reaches 3, 5, 6, and 7. Ventura County Permittees have not been assigned indicator bacteria WQBELs for discharges to Reaches 4B, 5, 6, and 7 because there are no MS4 discharges from Ventura County MS4 Permittees to these reaches. For Reaches 6 and 7, the drainage area for MS4 discharges is completely within Los Angeles County. Reach 5 partially falls within Ventura County, but Ventura County Permittees do not have any MS4 discharges to the portion of Reach 5 that falls within Ventura County[188]. This is consistent with the TMDL Staff Report, which shows a map of the Santa Clara River Reach 5 subwatershed as draining mainly Los Angeles County.[189] Therefore, the Order assigns indicator bacteria WQBELs for discharges to Reach 5 exclusively to Los Angeles County Permittees draining to Reach 5. For Reach 4B, although it is completely within Ventura County[190], there are no MS4 discharges from Ventura County Permittees to Santa Clara River Reach 4B. The Order may be reopened to name Ventura County Permittees as responsible Permittees for Santa Clara River Reach 4B and 5 if there is future development of MS4 infrastructure and discharges to these reaches.

[183] Los Angeles Water Board. Total Maximum Daily Loads for Indicator Bacteria in Santa Clara River Estuary and Reaches 3, 5, 6, and 7 [Staff Report]. July 8, 2010. p. 49.
[184] Los Angeles Water Board. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Chapter 7 p. 7-433.
[185] Los Angeles Water Board. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Chapter 7 p. 7-435
[186] Los Angeles Water Board. Total Maximum Daily Loads for Indicator Bacteria in Santa Clara River Estuary and Reaches 3, 5, 6, and 7 [Staff Report]. July 8, 2010. pp. 52-53.
[187] Los Angeles Water Board. Total Maximum Daily Loads for Indicator Bacteria in Santa Clara River Estuary and Reaches 3, 5, 6, and 7 [Staff Report]. July 8, 2010. p. 23.
[188] Ventura County GIS data and MS4 drainage area maps (July 15, 2016)
[189] Los Angeles Water Board. Total Maximum Daily Loads for Indicator Bacteria in Santa Clara River Estuary and Reaches 3, 5, 6, and 7 [Staff Report]. July 8, 2010. p. 15.
[190] Ventura County GIS data and MS4 drainage area maps (July 15, 2016)

2. Expression of Metals TMDLs as Permit Limitations

Six metals TMDLs are incorporated into the Regional MS4 Permit as listed below:

- Metals and Selenium in the Calleguas Creek, its Tributaries and Mugu Lagoon TMDL (Attachment N)
- Ballona Creek Metals TMDL (Attachment O)
- Los Angeles River and Tributaries Metals TMDL (Attachment Q)
- TMDLs for Metals and Selenium - San Gabriel River and Impaired Tributaries – U.S. EPA Established TMDL (Attachment R)
- Los Angeles Area Lakes TMDLs: Puddingstone Reservoir Mercury TMDL – U.S. EPA Established TMDL (Attachment R)
- Los Cerritos Channel TMDLs for Metals – U.S. EPA Established TMDL (Attachment S)

The following TMDLs require additional discussion because the manner of incorporation has changed from previous MS4 permits.

Los Angeles River and Tributaries Metals TMDL, Ballona Creek Metals TMDL, **San Gabriel River and Impaired Tributaries Metals and Selenium TMDL, and Los Cerritos Channel Metals TMDL.** These TMDLs assign mass-based WLAs to the Permittees during dry-weather and wet-weather conditions expressed as mass per day. For ease of implementation, these WLAs are incorporated into the Order as mass-based WQBELs as well as alternative concentration-based WQBELs. Demonstrating compliance with concentration-based values rather than mass-based values is more practical given the nature of monitoring requirements in the Order.

The TMDLs' dry-weather numeric targets are used for the alternative concentration-based dry-weather WQBELs. This approach is consistent with the assumptions and requirements of these TMDLs. The Los Angeles River and Tributaries Metals TMDL and Ballona Creek Metals TMDL both state that concentration-based permit limits equal to dry-weather reach-specific numeric targets may apply during dry weather.[191] The San Gabriel River and Los Cerritos Channel TMDLs do not contain this explicit language, but as they follow the same calculation approach as the Los Angeles River and Ballona Creek TMDLs, the same approach for incorporation into permits may apply.

The wet-weather mass-based WLAs are expressed as equations. In the Order, the terms of these equations have been rearranged to express WQBELs as an "effective concentration" of a metal that when multiplied by the volume of flow in the river for the assessed day (i.e. the daily volume in liters) gives the calculated effluent limitation as a load.

$$Effluent\ Limitation = (Effective\ Concentration)\ x\ (daily\ volume)$$

As an example, the grouped wet-weather effluent limitation for cadmium in the Los Angeles River is a load expressed as kg/day:

[191] Los Angeles Water Board. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Chapter 7 p. 7-132 (Ballona Creek Metals TMDL) and p. 7-156 (Los Angeles and Tributaries Metals TMDL).

$$Effluent\ Limitation = WER\ x\ (2.8x10^{-9})\ x\ (daily\ volume) - 1.8$$

Setting the two equations equal and rearranging the variables to solve for the "effective concentration," the equation becomes:

$$(Effective\ Concentration)\ x\ (daily\ volume) = WER\ x\ (2.8x10^{-9})\ x\ (daily\ volume) - 1.8$$

$$Effective\ Concentration = \frac{WER\ x\ (2.8x10^{-9})\ x\ (daily\ volume) - 1.8}{(daily\ volume)}$$

$$Effective\ Concentration = WER\ x\ (2.8x10^{-9}) - \frac{1.8}{(daily\ volume)}$$

This equation results in an effective concentration for cadmium expressed as kg/L; to convert to µg/L, apply the conversion factor 1 kg = 1 x 10^9 µg:

$$Effective\ Concentration = \left[WER\ x\ (2.8x10^{-9}) - \frac{1.8}{(daily\ volume)}\right]\left(\frac{1\ x\ 10^9\ \mu g}{1\ kg}\right)$$

$$Effective\ Concentration\ \left(\frac{\mu g}{L}\right) = WER\ x\ 2.8 - \frac{1.8\ x\ 10^9}{(daily\ volume)}$$

The concentration WQBELs for the Los Angeles River and Tributaries Metals TMDL based on this methodology are the following:

$$Cadmium\ \left(\frac{\mu g}{L}\right) = WER\ x\ 2.8 - \frac{1.8\ x\ 10^9}{(daily\ volume)}$$

$$Copper\ \left(\frac{\mu g}{L}\right) = WER\ x\ 15 - \frac{9.5\ x\ 10^9}{(daily\ volume)}$$

$$Lead\ \left(\frac{\mu g}{L}\right) = WER\ x\ 85 - \frac{3.2\ x\ 10^{10}}{(daily\ volume)}$$

$$Zinc\ \left(\frac{\mu g}{L}\right) = WER\ x\ 140 - \frac{8.3\ x\ 10^{10}}{(daily\ volume)}$$

The Los Angeles River Metals TMDL defines wet weather as any day when the maximum daily flow instream is equal to or greater than 500 cfs at the Wardlow station. A flow of 500 cfs results in a daily volume of 1.22 x 10^9 L. Using this daily volume, a WER default value of 1 except for copper, which has a site-specific WER of 3.97, in these equations result in the following effective concentrations:

$$Cadmium\text{: } 1\ x\ 2.8 - \frac{1.8\ x\ 10^9}{1.22\ x\ 10^9} = 1.32\ \frac{\mu g}{L}$$

$$Copper\text{: } 3.97\ x\ 15 - \frac{9.5\ x\ 10^9}{1.22\ x\ 10^9} = 51.76\ \frac{\mu g}{L}$$

$$Lead\text{: } 1\ x\ 85 - \frac{3.2\ x\ 10^{10}}{1.22\ x\ 10^9} = 58.77\ \frac{\mu g}{L}$$

$$Zinc: 1\ x\ 140 - \frac{8.3\ x\ 10^{10}}{1.22\ x\ 10^{9}} = 71.97\ \frac{\mu g}{L}$$

The equations for the wet-weather mass-based WQBELs for the Ballona Creek Metals TMDL, San Gabriel River Metals TMDL, and Los Cerritos Channel Metals TMDL are simpler than for the Los Angeles River Metals TMDL because they do not account for the allocations for wastewater treatment plants. Thus, when the equations for the Ballona Creek Metals TMDL, San Gabriel River Metals TMDL, and Los Cerritos Channel Metals TMDL are rearranged, the effective concentration is a value. As an example, the grouped wet-weather effluent limitation for copper in Ballona Creek is a load expressed as grams per day:

$$Effluent\ Limitation = WER\ x\ (1.297\ x\ 10^{-5})\ x\ (daily\ volume)$$

As in the previous example, the effluent limitation is expressed as an "effective concentration":

$$Effluent\ Limitation = (Effective\ Concentration)\ x\ (daily\ volume)$$

Setting the two equations equal and rearranging the variables to solve for the "effective concentration" the equation becomes:

$$(Effective\ Concentration)\ x\ (daily\ volume) = WER\ x\ (1.297\ x\ 10^{-5})\ x\ (daily\ volume)$$

$$Effective\ Concentration\ = \frac{WER\ x\ (1.297\ x\ 10^{-5})\ x\ (daily\ volume)}{(daily\ volume)}$$

$$Effective\ Concentration\ =\ WER\ x\ 1.297\ x\ 10^{-5}$$

This equation results in an effective concentration for copper expressed as g/L; to convert to µg/L, apply the conversion factor 1 g = 1 x 10^6 µg:

$$Effective\ Concentration\ = (WER\ x\ 1.297\ x\ 10^{-5})\left(\frac{1\ x\ 10^{6}\ \mu g}{1\ g}\right)$$

$$Effective\ Concentration\ \left(\frac{\mu g}{L}\right) = WER\ x\ 12.97$$

The concentration WQBELs for the Ballona Creek Metals TMDL based on this methodology are the following:

$$Copper\ \left(\frac{\mu g}{L}\right) = WER\ x\ 12.97$$

$$Lead\ \left(\frac{\mu g}{L}\right) = WER\ x\ 72.65$$

$$Zinc\ \left(\frac{\mu g}{L}\right) = WER\ x\ 99.17$$

This methodology for determining effective concentrations to be used as the alternative wet-weather concentration-based WQBELs is consistent with the assumptions and requirements of these TMDLs because the equations are the same as the WLA equations assigned by the TMDLs; the terms have merely been rearranged for ease of compliance determination.

3. Expression of Nutrient TMDLs as Permit Limitations

Twelve nutrient TMDLs are incorporated into the Regional MS4 Permit as listed below:

- TMDL for Algae, Eutrophic Conditions, and Nutrients in the Ventura River and its Tributaries (Attachment K)
- Santa Clara River Nitrogen Compounds TMDL (Attachment M)
- Santa Clara River Lakes Nutrients TMDL (Lake Elizabeth) (Attachment M)
- TMDLs for Nutrients - Malibu Creek Watershed – U.S. EPA Established TMDLs (Attachment O)
- Malibu Creek and Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Community Impairments – U.S. EPA Established TMDLs (Attachment O)
- Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL (Attachment P)
- Los Angeles River Nitrogen Compounds and Related Effects TMDL (Attachment Q)
- LA Area Lakes TMDLs: Echo Park Lake Nutrient TMDL – U.S. EPA Established TMDL (Attachment Q)
- LA Area Lakes TMDLs: Peck Road Park Lake Nutrient TMDL – U.S. EPA Established TMDL (Attachment Q)
- LA Area Lakes TMDL: Legg Lake System Nutrient TMDL – U.S. EPA Established TMDL (Attachment Q)
- LA Area Lakes TMDLs: Lake Calabasas Nutrient TMDL – U.S. EPA Established TMDL (Attachment Q)
- LA Area Lakes TMDL: Puddingstone Reservoir Nutrient TMDL – U.S. EPA Established (Attachment R)

The following TMDLs require additional discussion either because the manner of incorporation has changed from previous MS4 permits or there is inconsistent information in the TMDL about the naming of responsible Permittees.

Santa Clara River Lakes Nutrients TMDL (Lake Elizabeth only). The *Santa Clara River Lakes Nutrients TMDL* assigns grouped WLAs to all MS4 discharges for Lake Elizabeth, Munz Lake, and Lake Hughes. Only WLAs for Lake Elizabeth were incorporated in Attachment M of the Order because there are no Permittee discharges subject to the Order into Lake Hughes or Lake Munz.[192] The WLAs for MS4 discharges to Munz Lake and Lake Hughes were assigned to additional responsible entities in the future under Phase II of the U.S. EPA Stormwater Permitting Program; or the residual designation authority of the state under Clean Water Action section 402(p)(2)(E), and other applicable regulatory programs.[193]

Los Angeles River Nitrogen Compounds and Related Effects TMDL. In the *Los Angeles River Nitrogen Compounds and Related Effects TMDL* (LAR Nitrogen

[192] Total Maximum Daily Load for Nutrients in Elizabeth Lake, Munz Lake, and Lake Hughes in the Santa Clara River Watershed [Staff Report]. September 8, 2016. Table 4 pp. 16-17.

[193] Los Angeles Water Board. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Chapter 7 pp. 7-564-565

TMDL) the total ammonia as nitrogen WLAs are dependent on the temperature and pH of receiving waters as well as the presence of early life stages (ELS) of fish. The WQBELs incorporated into the Regional MS4 Permit for total ammonia as nitrogen are based on the calculation procedure for translation of objectives into effluent limits in Chapter 3 of the Basin Plan, page 3-16 to 3-25. Following this procedure is consistent with the LAR Nitrogen TMDL, which states, "It would be consistent with the findings and assumptions of this TMDL to calculate total ammonia WLAs based on temperature and pH data from the most recent three years of monitoring data when incorporating WLAs into permits. In applying this approach, 90th percentile pH data shall be used to establish one-hour average WLAs and the 50th percentile of pH and temperature data shall be used to establish 30-day average WLAs. The procedure for translation of objectives into effluent limits specified in Chapter 3 of this Basin Plan, as amended by Resolution R02-011 and R04-022, shall be used to translate WLAs into effluent limitations." The three years of receiving water monitoring data used to calculate the ammonia WQBELs were from the Donald C. Tillman Water Reclamation Plant (WRP), the Los Angeles-Glendale WRP, and the Whittier Narrows WRP.

The Donald C. Tillman WRP is located at the Sepulveda Basin and discharges to Reach 5. There are receiving water monitoring stations in Reach 5 (Sepulveda Basin) and Reach 4 (below Sepulveda Basin). Monitoring data from receiving water monitoring stations RSW-LATT628 (Reach 5) and RSW-LATT630 (Reach 4) were used to calculate the ammonia site specific 30-day average limitations. The Los Angeles-Glendale WRP discharges to Los Angeles River Reach 3. Monitoring data from receiving water monitoring station RSW-LAGT650 (Reach 3) were used to calculate the ammonia site specific 30-day average limitations. Whittier Narrows WRP is located adjacent to Rio Hondo Reach 3 (above Whittier Narrows Dam). Monitoring data from receiving water monitoring station RSW-006 (Rio Hondo Reach 3) were used to calculate the ammonia site specific 30-day average limitations. For the three WRPs, the receiving water monitoring data from January 1, 2018 to December 31, 2020, were used to calculate the 50th percentile for pH and temperature values, which were used to calculate the ammonia WQBELs.

4. Expression of Salts TMDLs as Permit Limitations

Three salts TMDLs are incorporated into the Regional MS4 Permit as listed below:

- Santa Clara River Reach 3 Chloride TMDL – U.S. EPA Established TMDL (Attachment M)
- Upper Santa Clara River Chloride TMDL (Attachment M)
- Calleguas Creek Watershed Salts TMDL (Attachment N)

The following TMDLs require additional discussion either because the manner of incorporation has changed from previous MS4 permits or there is inconsistent information in the TMDL about the naming of responsible Permittees.

Santa Clara River Reach 3 Chloride TMDL. The SCR Reach 3 Chloride TMDL recommends incorporating WLAs as an instantaneous maximum. However, the WLAs were incorporated into Attachment M of the Order as a daily maximum. Based on the monitoring frequency required in the MRP of the Order, the daily maximum is effectively the same as an instantaneous maximum WQBEL.

Upper Santa Clara River Chloride TMDL. The *Upper Santa Clara River Chloride TMDL* (USCR Chloride TMDL) includes a 3-month rolling average WLA for chloride. However, the 2012 Los Angeles County MS4 Permit includes WLAs as an instantaneous maximum. Based on the monitoring frequency required in the MRP of the Order, the daily maximum is effectively the same as an instantaneous maximum. Therefore, consistent with the 2012 Los Angeles County MS4 Permit, the WLA for chloride is incorporated in Attachment M of the Order as a daily maximum WQBEL.

Although the USCR Chloride TMDL did not specifically list individual responsible Permittees, it assigned WLAs to "Other NPDES discharges." Consistent with the SCR Bacteria TMDL, Ventura County Permittees have not been assigned chloride WQBELs for discharges to the upper reaches of the Santa Clara River (Reaches 4Band 5) because there are no MS4 discharges from Ventura County MS4 Permittees to these reaches.[194]

Boron, Chloride, Sulfate, and TDS (Salts) in the Calleguas Creek Watershed TMDL (Calleguas Creek Salts TMDL). Among the other Permittees specifically named in the Calleguas Creek Salts TMDL, the Los Angeles Water Board has determined that the Cities of Oxnard and Simi Valley are responsible Permittees for this TMDL because their MS4s discharge to the subwatersheds to which the TMDL assigns WLAs (Pleasant Valley (Revolon) and Simi)[195]. This determination was made based on current GIS information on MS4s and their drainage areas.

5. Expression of Toxic Pollutants and Sediment TMDLs as Permit Limitations

There are twenty-one (21) toxic pollutants and sediment TMDLs that are incorporated into the Regional MS4 Permit as listed below:

- Calleguas Creek OC Pesticides and PCBs TMDL (Attachment N)
- Calleguas Creek Toxicity TMDL (Attachment N)
- TMDLs for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3 – U.S. EPA Established (Attachment N)
- Santa Monica Bay TMDLs for DDTs and PCBs – U.S. EPA established (Attachment O)
- Ballona Creek Estuary Toxic Pollutants TMDL (Attachment O)
- Ballona Creek Wetlands TMDLs for Sediment and Invasive Exotic Vegetation – U.S. EPA established (Attachment O)
- Marina del Rey Harbor Toxic Pollutants TMDL (Attachment O)
- Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL (Attachment P)
- Machado Lake Pesticides and PCBs TMDL (Attachment P)
- LA Area Lakes TMDLs: Echo Park Lake Chlordane, Dieldrin and PCBs TMDL – U.S. EPA Established (Attachment Q)
- LA Area Lakes TMDLs: Peck Road Park Lake Chlordane, Dieldrin, DDTs and PCBs TMDL – U.S. EPA Established (Attachment Q)
- LA Area Lakes TMDLs: Puddingstone Reservoir Chlordane, Dieldrin, DDTs and PCBs TMDLs – U.S. EPA Established (Attachment R)
- Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL (Attachment S)

[194] Ventura County GIS data and MS4 drainage area maps (July 15, 2016).
[195] Los Angeles Water Board. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Chapter 7 p 7-273

The following TMDLs require additional discussion either because the manner of incorporation has changed from previous MS4 permits or there is inconsistent information in the TMDL about the manner of incorporation.

Organochlorine (OC) Pesticides, Polychlorinated Biphenyls (PCBs), and Siltation in Calleguas Creek, its Tributaries, and Mugu Lagoon TMDL (Calleguas Creek OC Pesticides and PCBs TMDL). The Calleguas Creek OC Pesticides and PCBs TMDL includes a siltation WLA, which is allocated to all NPDES permitted MS4s, including Caltrans. The WLA is expressed as a reduction from the baseline sediment yield to Mugu Lagoon. The TMDL states on page 7 that "the [waste] load allocation will apply after the baseline is established, as described in the Implementation Plan." The TMDL Implementation Plan requires Ventura County Permittees to propose a baseline load per Special Study #1. Ventura County Permittees have completed Special Study #1. However, the study did not determine the baseline sedimentation yield but rather claimed that Mugu Lagoon is unimpaired for sedimentation based on habitat conversion and benthic community degradation. Mugu Lagoon has not been removed from the 303(d) list for sedimentation. Nonetheless, until a baseline sedimentation yield is calculated, it is not possible to incorporate the sedimentation WLA into the Order because of the way the WLA is expressed in the TMDL. Therefore, the siltation WLA for Mugu Lagoon is not incorporated into Attachment N of the Order. The Los Angeles Water Board will reopen the Order to incorporate a siltation WLA depending upon the decision regarding the impairment status of Mugu Lagoon.

Calleguas Creek Toxicity TMDL. The Toxicity, Chlorpyrifos, and Diazinon in the Calleguas Creek, its Tributaries, and Mugu Lagoon TMDL (Calleguas Creek Toxicity TMDL) includes 1-hour (acute) and 4-day (chronic) WLAs for both chlorpyrifos and diazinon. Based on the monitoring frequency required in the MRP of the Order, the daily maximum is effectively the same as the 1-hour and 4-day frequency. Hence, WLAs are incorporated as a daily maximum. Consistent with other Los Angeles Water Board-adopted toxics TMDLs, acute WLAs were interpreted to apply to wet weather and chronic WLAs were interpreted to apply to dry weather.

E. WQBELs for Trash

1. Previous Permit Requirements

The Los Angeles Water Board amended the 2001 Los Angeles County MS4 Permit (Order No. 01-182) on December 10, 2009 to incorporate provisions implementing the Los Angeles River Trash TMDL. At that time, the Los Angeles Water Board incorporated the WLAs from the Los Angeles River Trash TMDL into the 2001 Los Angeles County MS4 Permit as numeric WQBELs.[196] The 2001 Los Angeles County MS4 Permit stated: "Each Permittee identified in Appendix 7-1 shall comply with the interim and final effluent limitations set forth in Appendix 7-1 hereto."[197] Appendix 7-1 expressed the numeric effluent limitations for trash as progressively decreasing allowable amounts of trash discharged from each applicable permittee's jurisdictional area within the watershed. Each applicable permittee was

[196] See generally 2001 Permit, Part 7, pp. 79-84, Appendix 7-1, and Appendix 7-2. See also, 2001 Permit, Findings Related to the Incorporation of the Los Angeles River Trash TMDL, pp. 15-20; see also 2012 Permit, Fact Sheet, pp. F-13, F-23..

[197] 2001 Permit, Part 7, p. 79 and Appendix 7-1.

required to make annual reductions of its discharges of trash over a 7-year period (2010-2016), until the final effluent limitation of zero trash discharged from the MS4 was achieved. "Permittees shall achieve their final effluent limitation of zero trash discharge for the 2015-2016 storm year and every year thereafter."[198] Consistent with the TMDL, the Los Angeles Water Board provided Permittees the option to be deemed in compliance with the numeric effluent limitations through the installation of certain BMPs (i.e., certified full capture devices).[199]

In the 2012 Los Angeles County MS4 Permit, the Los Angeles Water Board carried over the effluent limitations and compliance deadlines, as well as the compliance approaches, established in the 2001 Los Angeles County MS4 Permit.[200] Part A of Attachment O of the 2012 Los Angeles County MS4 Permit included the interim and final numeric WQBELs and compliance deadlines implementing the Los Angeles River Trash TMDL. Applicable permittees were required to "comply with the final water quality-based effluent limitation of zero trash discharged to the Los Angeles River no later than September 30, 2016 and every year thereafter."[201] The 2012 Los Angeles County MS4 Permit also included provisions implementing 8 other trash TMDLs, including interim and final numeric WQBELs and compliance deadlines and provisions outlining the method of compliance for all trash TMDLs.

The 2014 City of Long Beach MS4 Permit included similar requirements for the Los Angeles River Trash TMDL. As discussed in Part II.F of this Fact Sheet, the 2012 Los Angeles County MS4 Permit was reopened in 2016 to incorporate revisions to the Los Angeles River Trash TMDL and Ballona Creek and Wetlands Trash TMDL. At the same time, the 2014 City of Long Beach MS4 Permit was also reopened to incorporate the same revisions to the Los Angeles River Trash TMDL. The 2010 Ventura County MS4 Permit included provisions for the Revolon Slough and Beardsley Wash Trash TMDL and the Ventura River Estuary Trash TMDL. These provisions in the Ventura County MS4 Permit included WLAs expressed as WQBELs of "zero trash", compliance monitoring, and actions and special studies.

2. Manner of Trash TMDLs Incorporation

There are eleven (11) trash TMDLs that are incorporated into the Regional MS4 Permit, listed below, consistent with the assumptions and requirements of the TMDL WLAs.

- Ventura River Estuary Trash TMDL (Attachment K)
- Lake Elizabeth Trash TMDL (Attachment M)
- Revolon Slough and Beardsley Wash Trash TMDL (Attachment N)
- Santa Monica Bay Nearshore and Offshore Debris TMDL (Attachment O)
- Malibu Creek Watershed Trash TMDL (Attachment O)

[198] *Id*., Part 7, Appendix 7-1, footnote 3.
[199] *Id*., Part 7, pp. 79-84 and Appendix 7-2.
[200] 2012 Permit, Part VI.E.5, pp. 151-157 and Attachment O, Part A, pp. O-1 to O-3.. See also *id*., Fact Sheet, p. F-37 ("This Order carries over the final receiving water limitations and WQBELs that were included to implement the Marina del Rey Harbor Back Basins and Mothers' Beach Bacteria TMDL and the Los Angeles River Trash TMDL, respectively, in the 2007 and 2009 amendments to Order No. 01-182.").
[201] *Id*., Part A.2, p. O-1..

- Ballona Creek Trash TMDL (Attachment O)
- Machado Lake Trash TMDL (Attachment P)
- Los Angeles River Watershed Trash TMDL (Attachment Q)
- Legg Lake Trash TMDL (Attachment Q)
- LA Area Lakes TMDLs: Echo Park Lake Trash TMDL – U.S. EPA Established (Attachment Q)
- LA Area Lakes TMDLs: Peck Road Park Lake Trash TMDL – U.S. EPA Established (Attachment Q)

The WLAs for trash are expressed as progressively decreasing allowable amounts of trash discharged from a Permittee's jurisdictional area within the drainage area to the impaired water body. The Trash TMDLs require each Permittee to make annual reductions of its discharges of trash over a set period, until the numeric target of zero trash discharged from the MS4 is achieved. The Trash TMDLs specify a specific formula for calculating and allocating annual reductions in trash discharges from each jurisdictional area within a watershed. The formula results in specified annual amounts of trash that may be discharged from each jurisdiction into the receiving waters. Translation of the WLAs or compliance points described in the TMDLs into jurisdiction-specific load reductions from the baseline levels, as specified in the TMDL, logically results in the articulation of an annual limitation on the amount of a pollutant that may be discharged. The specification of allowable annual trash discharge amounts meets the definition of an "effluent limitation", as that term is defined in subdivision (c) of section 13385.1 of the California Water Code. Alternatively, if Permittees choose to comply with the WLAs for trash by progressively installing full capture systems to address 100% of the drainage area to the impaired waterbody within their jurisdiction, the specification of the percentage of the drainage area (or percentage of catch basins) that must be addressed meets the definition of an "effluent limitation." Specifically, the trash discharge limitations or, alternatively, percentage of area addressed by full capture systems constitute a "numeric restriction … on the quantity [or] discharge rate … of a pollutant or pollutants that may be discharged from an authorized location."

3. Compliance Schedules for Trash TMDLs

Trash TMDL compliance schedules are incorporated into the Regional MS4 Permit consistent with the TMDLs. Note that the Santa Monica Bay Debris TMDL included a mechanism where Permittees would receive a three-year extension of the final TMDL implementation deadline if they adopted certain local ordinances. The cities of Manhattan Beach, Hermosa Beach, and Malibu adopted local ordinances to ban plastic bags, smoking in public places, and single use expanded polystyrene food packaging. Therefore, the final TMDL implementation deadline for these Permittees is extended from March 20, 2020 to March 20, 2023.

4. Trash TMDLs Compliance Methods

Part IV.B.3 of the Order sets forth the trash WQBELs, Permittees' compliance options with respect to trash WBQELs, and additional trash TMDL provisions. The compliance options included in the Order are consistent with the compliance options included in the previous 2012 Los Angeles County and 2014 City of Long Beach MS4 Permits, with the exception of the following:

a. Under the 2012 Los Angeles County and 2014 City of Long Beach MS4 Permits, a Permittee could request a less frequent assessment of its daily generation rate (DGR) subject to Executive Officer approval. Part IV.B.3.b.ii.(a)(1)(iii) of the Order, however, allows Permittees to reduce the frequency of DGR recalculation to every five years upon achieving full compliance with final WQBELs without the requirement for Executive Officer approval. This change was made due to the time and tracking costs associated with tracking and responding to such requests and does not affect requirements for annual reporting and, thus, the ability to assess compliance with the final WQBELs on an ongoing basis.

b. Two trash TMDL compliance approaches included in previous MS4 permits, "Partial Capture Devices and Institutional Controls" and "Combined Compliance Approaches," have been combined into the "Mass Balance Compliance Approach" detailed in Part IV.B.3.b.ii of the Order. This approach allows Permittees to comply with their interim and final effluent limitations using a combination of full capture systems, partial capture devices, and institutional controls. Furthermore, performance of full capture systems and partial capture devices (i.e., trash removal efficiency) may be accounted for in calculating the "Total Storm Year Trash Discharge," using the forms provided in Attachment I of the Order. The change to combine the "Partial Capture Devices and Institutional Controls" and "Combined Compliance Approaches" from the previous permits does not constitute a change in trash TMDL compliance options.

c. Additionally, the Order takes into account additional full capture system compliance options for the Malibu Creek Watershed Trash TMDL and the Revolon Slough and Beardsley Wash Trash TMDL. These additional full capture system compliance options are consistent with recent updates to these TMDLs, which are now in effect (See Table F-24). These compliance options allow Permittees to demonstrate compliance with the WQBELs by installing certified full capture systems on conveyances that collect drainage from priority land use areas as defined in the Trash Amendments.

F. U.S. EPA Established TMDLs

U.S. EPA has established ten TMDLs that include waste load allocations for MS4 discharges in Los Angeles and Ventura counties. These TMDLs are listed below with their effective dates:

- March 21, 2003 – TMDLs for Nutrients - Malibu Creek Watershed (Attachment O)
- June 18, 2003 – TMDL for Chloride in the Santa Clara River, Reach 3 (Attachment M)
- March 26, 2007 – TMDLs for Metals and Selenium - San Gabriel River and Impaired Tributaries (Attachment R)
- March 17, 2010 – Los Cerritos Channel TMDLs for Metals (Attachment S)
- October 6, 2011 – TMDLs for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3 (Attachment N)
- March 26, 2012 – Santa Monica Bay TMDLs for DDTs and PCBs (Attachment O)

- March 26, 2012 – Ballona Creek Wetlands TMDLs for Sediment and Invasive Exotic Vegetation (Attachment O)
- March 26, 2012 – Long Beach City Beaches and Los Angeles River Estuary TMDLs for Indicator Bacteria (Attachment Q)
- March 26, 2012 – Los Angeles Area Lakes TMDLs for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs (Attachments O, Q, and R)
- July 2, 2013 – Malibu Creek and Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Community Impairments (Attachment O)

As discussed above, in contrast to State-established TMDLs, U.S. EPA-established TMDLs do not contain a program of implementation. The Clean Water Act does not allow U.S. EPA to either adopt programs of implementation or establish implementation schedules for its TMDLs. Such decisions are generally left with the states. The Los Angeles Water Board may, and has in some cases, subsequently adopted a separate program of implementation as a Basin Plan Amendment for U.S. EPA-established TMDLs, including schedules of implementation, which can be included as compliance schedules in permits where applicable. Alternatively, considering the specific approach taken in the Regional MS4 Permit and specific facts pertaining to the U.S. EPA-established TMDLs, the Los Angeles Water Board can determine that no compliance schedule should be provided or may approve a schedule in a Watershed Management Program.

In the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit, Permittees subject to WLAs in U.S. EPA-established TMDLs were required to propose and implement best management practices (BMPs) that would be effective in achieving compliance with U.S. EPA-established numeric WLAs and a schedule to implement the proposed BMPs in their WMPs. The Los Angeles Water Board's approach in these two prior permits was based the fact that the TMDLs were being newly incorporated and, because they did not have State adopted programs of implementation, the numeric WLAs would take effect immediately. Further, through the WMP Provisions in these two permits, the Los Angeles Water Board created an alternative compliance pathway that provided a rigorous process for identifying BMPs and a schedule for implementing the BMPs that would ensure that the WLAs would be achieved. Therefore, the Los Angeles Water Board determined that it was appropriate to express the TMDL WLAs as narrative WQBELs and allow Permittees to propose BMPs to meet the numeric WLAs and a schedule that was as short as possible in a Watershed Management Program during the terms of these two permits. If Permittees did not propose such BMPs in their WMPs, and receive approval of their WMP, they were required to immediately comply with numeric WQBELs equivalent to the numeric WLAs.[202]

In developing the Order, the Los Angeles Water Board revisited, and is clarifying, its approach to U.S. EPA-established TMDL WLAs in the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit, which these permits anticipated the Los Angeles Water Board would do. In revisiting its approach, the Los Angeles Water Board considered (a) whether it had adopted a program of implementation for the TMDL pursuant to Water Code sections 13240 and 13242; (b) whether the WLAs for the U.S. EPA-established TMDL were equivalent to existing pollutant loads (thus

[202] Note that per 40 CFR § 130.2(h) "WLAs constitute a type of water quality-based effluent limitation [WQBEL]."

requiring no reductions); (c) whether Permittees were currently achieving the WLAs; and (d) whether load reductions are still required to meet the WLAs.

In some cases, the Los Angeles Water Board is allowing Permittees the option to continue implementing proposed BMPs per a specified schedule in a Watershed Management Program. In other cases, the Los Angeles Water Board is incorporating compliance schedules where it has adopted a program of implementation for the U.S. EPA TMDL. And, finally, in some cases, the Los Angeles Water Board has concluded that additional time to comply with the TMDL-based WQBELs is not needed. The manner of incorporation and compliance schedules for each of the U.S. EPA TMDLs is set forth and explained below.

1. U.S. EPA TMDLs with State Programs of Implementation

The Los Angeles Water Board adopted the following three separate programs of implementation to address four U.S. EPA-established TMDLs:

- Implementation Plan for the (a) TMDLs for Nutrients - Malibu Creek Watershed and the (b) Malibu Creek and Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Impairments (effective date: May 16, 2017)
- Implementation Plan for the TMDLs for Metals and Selenium - San Gabriel River and Impaired Tributaries (effective date: October 13, 2014)
- Implementation Plan for the Los Cerritos Channel TMDLs for Metals (effective date: October 13, 2014)

For these U.S. EPA-established TMDLs, the WLAs are incorporated into the Order as numeric WQBELs and/or receiving water limitations with corresponding compliance schedules consistent with the TMDLs and programs of implementation adopted by the Los Angeles Water Board. Permittees have the option to address these U.S. EPA-established TMDLs in a Watershed Management Program in the same manner as Los Angeles Water Board-adopted TMDLs.

Through establishment of these state programs of implementation the Los Angeles Water Board has undergone a comprehensive evaluation of implementation strategies, cost considerations including the estimated cost of implementing the measures to achieve the WLAs, and the time required to fully implement control measures to achieve the final WLAs.

2. U.S. EPA TMDLs That Do Not Have State Programs of Implementation

The remaining six U.S. EPA established TMDLs do not have State programs of implementation. The Los Angeles Water Board's decision as to how to incorporate WQBELs and/or receiving water limitations for these six U.S. EPA established TMDLs is based on an evaluation of (1) whether the WLAs in the U.S. EPA-established TMDLs were based on existing MS4 loads and (2) whether Permittees were currently achieving WLAs.

a. U.S. EPA TMDLs Where WLAs Were Based on Existing MS4 Loads at Time of TMDL Adoption

After a fact-specific re-evaluation of how each U.S. EPA-established TMDL should be incorporated, the Los Angeles Water Board has determined that numeric WQBELs and/or receiving water limitations must be achieved by the effective date of the Order for the U.S. EPA-established TMDLs where the WLAs were established equal to existing MS4 pollutant loads. The following

TMDLs established by U.S. EPA have WLAs that are equivalent to existing MS4 pollutant loads at the time of TMDL adoption:

- Santa Monica Bay TMDLs for DDTs and PCBs[203]
- Ballona Creek Wetlands TMDLs for Sediment and Invasive Exotic Vegetation[204]
- Echo Park Lake Nutrients TMDL and Peck Road Park Lake Nutrients TMDL[205]

For these TMDLs, the U.S. EPA TMDL specifies that the WLAs are set equal to the existing pollutant loads at the time of TMDL adoption. Therefore, no reductions in pollutant loads should be required. Permittees must continue to maintain and not increase pollutant loads in MS4 discharges as compared to the WLAs. Accordingly, these WLAs are incorporated as numeric WQBELs and/or receiving water limitations that must be complied with as of the effective date of the Order. No compliance schedules or alternative to propose BMPs and schedules of implementation in Watershed Management Programs are provided.

b. U.S. EPA TMDLs Where Permittees Are Achieving WLAs

For U.S. EPA-established TMDLs where Permittees are currently achieving WLAs, the Los Angeles Water Board has also incorporated these WLAs as numeric WQBELs and/or receiving water limitations that must be complied with as of the effective date of the Order. The rationale for this manner of incorporation is further explained below.

The previous MS4 Permits required Permittees to propose and implement BMPs to achieve compliance with the WLAs. Therefore, the Los Angeles Water Board evaluated the Permittees' TMDL implementation strategies, monitoring data, and the time required to fully implement control measures to achieve the final WLAs in the WMPs and Annual Reports. Based on this information, the Los Angeles Water Board determined that Permittees will be able to comply immediately with the numeric WQBELs and/or receiving water limitations as of the effective date of the Order.

Based on this information, for the following TMDLs, the WLAs are incorporated as numeric WQBELs and/or receiving water limitations that must be complied with as of the effective date of the Order. No compliance schedules or alternative to propose BMPs and schedules of implementation in Watershed Management Programs are provided.

Santa Clara River Reach 3 Chloride TMDL. On June 18, 2003, U.S. EPA established the *TMDL for Chloride in the Santa Clara River Reach 3* (SCR Reach 3 Chloride TMDL). Based on outfall monitoring data (site IDs MO-SPA and MO-FIL) from October 2010 through May 2017, there were three

[203] U.S. EPA. Santa Monica Bay Total Maximum Daily Loads for DDTs and PCBs. March 26, 2012. pp. 49-51.
[204] U.S. EPA. Ballona Creek Wetlands Total Maximum Daily Loads for Sediment and Invasive Exotic Vegetation. March 26, 2012. pp. 73-74.
[205] U.S. EPA. Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs. March 26, 2012. pp. 6-17 and 4-18.

exceedances out of 51 samples of the 80 mg/L WQBEL[206]. Furthermore, recent monitoring data from January 2018 to January 2019 for these outfall sites indicate no exceedances out of 19 samples. For these reasons, the WLA in the SCR Reach 3 Chloride TMDL is incorporated in Attachment Q of the Order as a numeric WQBEL and no compliance schedule or option to propose BMPs and an implementation schedule in a Watershed Management Program is included. Thus, this numeric WQBEL must be complied with as of the effective date of the Order.

Echo Park Lake Trash TMDL and the Peck Road Park Lake Trash TMDL. The Echo Park Lake Trash TMDL and Peck Road Park Lake Trash TMDL are part of the *Los Angeles Area Lakes TMDLs for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs*. The Upper Los Angeles River EWMP 2017-18 Annual Report (p. 29) for the Echo Park Lake Trash TMDL states, "The target of zero trash established in the Echo Park Lake Trash TMDL was met at Echo Park Lake." The Upper Los Angeles River EWMP is the only Watershed Management Program that addresses Echo Park Lake. Having achieved the TMDL WLA, Permittees are expected to maintain compliance.

The Rio Hondo/San Gabriel River EWMP proposed September 30, 2016 as the final compliance date to meet the Peck Road Park Lake Trash TMDL (Table 2-10, p. 59 of the EWMP), which has passed. The City of Irwindale reports in the 2017-18 Annual Report (p. 23) that they have achieved full compliance with the Peck Road Park Lake Trash TMDL. The City of El Monte in their WMP (pp. 1-57 to 1-58) states that the City does not discharge to Peck Road Park Lake. In summary, for the Peck Road Park Lake Trash TMDL Permittees have either proposed a compliance schedule for which the final deadline has passed or have reported full compliance in their latest annual reports; therefore, Permittees are expected to be in compliance and maintain compliance with the TMDL WLAs.

For these reasons, the WLAs in the Echo Park Lake Trash TMDL and Peck Road Park Lake Trash TMDL were incorporated in Attachment Q of the Order as numeric WQBELs that must be complied with as of the effective date of the Order. No compliance schedules or alternative to propose BMPs and additional schedules of implementation in Watershed Management Programs are provided.

c. Remaining U.S. EPA TMDLs

Some U.S. EPA-established TMDLs without state programs of implementation have WLAs that were not based on existing pollutant loads, therefore, they required pollutant load reductions; and Permittees may still not be meeting the WLAs.

The following U.S. EPA established TMDLs are included in the Order as narrative WQBELs whereby Permittees have the option of proposing BMPs that have a reasonable assurance of achieving the TMDL WLAs along with a schedule to implement the BMPs that is as short as possible in a Watershed Management Program. The State Water Board upheld this approach in WQ-

[206] California Environmental Data Exchange Network (CEDEN). Accessed August 7, 2020. https://ceden.waterboards.ca.gov/AdvancedQueryTool.

2015-0075.[207] The Los Angeles Water Board may, at its discretion, revisit this decision within the term of the Order or in a future permit, as more information is developed to support the inclusion of numeric WQBELs for these U.S. EPA-established TMDLs:

- TMDLs for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3
- Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL
- Los Angeles Area Lakes TMDLs for Nitrogen, Phosphorus, Mercury, Trash, OC Pesticides and PCBs
    - Legg Lake System Nutrient TMDL
    - Lake Calabasas Nutrient TMDL
    - Echo Park Lake Chlordane, Dieldrin and PCBs TMDL
    - Peck Road Park Lake Chlordane, Dieldrin, DDTs and PCBs TMDL
    - Puddingstone Reservoir Nutrient, Mercury, Chlordane, Dieldrin, DDTs and PCBs TMDLs

For these U.S. EPA established TMDLs, the Order allows Permittees subject to these TMDLs to propose and implement BMPs that will be effective in achieving the TMDL WLAs in a Watershed Management Program, subject to Los Angeles Water Board approval. [208] Where these TMDLs were previously included in the 2012 Los Angeles County MS4 Permit and 2014 City of Long Beach MS4 Permit, some Permittees have already done so. In the case of Ventura County Permittees, the 2010 Ventura County MS4 Permit did not include the alternative to develop and implement a Watershed Management Program and, further, the one TMDL applicable to the Ventura County Permittees that is in this category is a TMDL that is newly incorporated into the Order.

For Permittees developing a Watershed Management Program, or revising an existing approved Watershed Management Program, Permittees must propose a schedule for implementing the BMPs that is as short as possible. The Los Angeles Water Board finds that, at this time, it is reasonable to include permit requirements for some of the U.S. EPA established TMDLs that allow Permittees to develop Watershed Management Programs that include BMPs, interim requirements and schedules for actions to achieve the TMDL WLAs. More detail on the required elements of a Watershed Management Program is included in Part X of this Fact Sheet. These Watershed Management Programs will facilitate a comprehensive planning process, including coordination among Permittees where necessary, on a watershed basis to identify the most effective watershed control measures and implementation strategies to achieve the TMDL WLAs much like a state program of implementation for a TMDL facilitates.

Based on the nature and timing of the proposed watershed control measures, the Los Angeles Water Board will consider appropriate actions on its part, which may include: (1) no action and continued reliance on permit

[207] State Water Board Order WQ 2015-0075, pp. 59-61.
[208] The requirements for Permittees who do not choose to participate in a WMP are set forth *infra*.

requirements that require implementation of the approved watershed control measures throughout the permit term per an approved Watershed Management Program; (2) adopting a program of implementation and corresponding schedule through the Basin Plan Amendment process and then incorporating a compliance schedule into this Order consistent with the State-adopted program of implementation; or (3) issuing a separate enforcement order (e.g., Time Schedule Order or Cease and Desist Order) to provide the necessary time to fully implement the watershed control measures to achieve the WQBELs.

Further detail on specific TMDLs is provided below, including limitations to schedules proposed in a Watershed Management Program.

Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL. The *Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL* (LB City Beaches and LA River Estuary Bacteria TMDL) addresses the Long Beach City Beaches that drain an area of 505 acres within the City of Long Beach. The TMDL, on page 6, refers to this drainage area as the "LBC beaches direct drainage" where there are five "sewersheds," or storm drain basins that collect, convey, and discharge stormwater and dry weather flow from these basins to the impaired beaches. Flows from other adjacent areas are directed away from the Long Beach City Beaches.

To determine whether additional time for BMP implementation is appropriate for the Long Beach City Beaches during dry weather conditions, the Los Angeles Water Board considered the manner this TMDL was previously incorporated into the City of Long Beach MS4 Permit. Per Part VIII.G.1.c.iv.(1) of the 2014 City of Long Beach MS4 Permit, it states that "For the City of Long Beach City Beaches Bacteria TMDL established by U.S. EPA in 2012, for all locations with the exception of the Los Angeles River Estuary, in no case shall the time schedule to achieve the final numeric WLAs during dry weather exceed five years from the effective date of the Order"; five years from the effective date of the 2014 City of Long Beach MS4 Permit was March 28, 2019, which is a past deadline. Therefore, the Order requires the City of Long Beach to comply with numeric WQBELs and receiving water limitations during dry weather at the Long Beach City Beaches as of the effective date of the Order.

To determine whether additional time for BMP implementation is appropriate for the Long Beach City Beaches during wet weather conditions, the Los Angeles Water Board considered the factors discussed above along with other considerations such as the time needed to implement BMPs and information on the cost of implementing the BMPs. The Order requires Permittees participating in a WMP to propose a schedule for implementing BMPs to achieve WQBELs and receiving water limitations during wet weather at the Long Beach City Beaches that is as short as possible. Similarly, the Order requires Permittees participating in a WMP to propose a schedule for implementing BMPs to achieve geometric mean WQBELs and receiving water limitations at the Long Beach City Beaches consistent with the schedule proposed to achieve WQBELs and receiving water limitations at the Long Beach City Beaches during wet weather.

To determine whether additional time for BMP implementation is appropriate for the Los Angeles River Estuary, the Los Angeles Water Board considered the Estuary's geographic relationship to the Los Angeles River. The Los Angeles River Estuary is downstream of the waterbodies addressed by the Los Angeles Water Board-adopted Los Angeles River Bacteria TMDL. Therefore, it is appropriate to align implementation schedules for the Los Angeles River Estuary with the compliance schedules for the Los Angeles River Bacteria TMDL. For Permittees participating in a WMP, the Order requires Permittees to propose a schedule for implementing BMPs to achieve WQBELs and receiving water limitations for the Los Angeles River Estuary during dry weather not to exceed the compliance schedule for Segment A (Rosecrans Avenue to Willow Street) in Table Q – 1 of Attachment Q. Table Q-1 of Attachment Q includes dry weather compliance schedules for the Los Angeles River Bacteria TMDL where the schedule for Segment A was deemed most appropriate for the Los Angeles River Estuary. Likewise, for the Los Angeles River Estuary during wet weather, the proposed schedule for implementing BMPs to achieve WQBELs and receiving water limitations in the WMP shall not to exceed the final compliance deadline incorporated in the Order for the Los Angeles River Bacteria TMDL for wet weather (March 23, 2037). Similarly, the Order requires Permittees participating in a Watershed Management Program a to propose a schedule to comply with geometric mean WQBELs and receiving water limitations for the Los Angeles River Estuary consistent with the schedule proposed for wet weather.

Legg Lake System Nutrients TMDL. The Legg Lake System Nutrients TMDL is part of the *Los Angeles Area Lakes TMDLs for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs*. Per Table 9-7 and pages 9-18 and 9-19 of the TMDL, the Legg Lake System Nutrients TMDL WLAs for total phosphorus are based on existing MS4 loads at the time of TMDL adoption. However, a load reduction is required to achieve the TMDL WLAs for total nitrogen. Considering that Permittees typically implement the same suite of BMPs to address nutrients, the Los Angeles Water Board determined that it is reasonable for Permittees to be provided with the same compliance options to achieve WQBELs and receiving water limitations for both total nitrogen and total phosphorous. Therefore, the Order incorporates WQBELs and receiving water limitations in Attachment Q consistent with the TMDL WLAs with the option of proposing BMPs and a schedule to implement the BMPs that is as short as possible.

G. Compliance Schedules for Achieving TMDL Requirements

A Regional Water Board may include a compliance schedule in an NPDES permit when the state's water quality standards or regulations include a provision that authorizes such schedules in NPDES permits.[209] In California, TMDL programs of implementation[210] are typically adopted through amendments to a regional water

[209] See *In re Star-Kist Caribe, Inc.*, (Apr. 16, 1990) 3 E.A.D. 172, 175, modification denied, 4 E.A.D. 33, 34 (EAB 1992).

[210] TMDL programs of implementation consist of those measures, along with a schedule for their implementation, that the Water Boards determine are necessary to correct an impairment. The NPDES implementation measures are thus required by Clean Water Act sections 303(d) and 402(p)(3)(B)(iii). State law also requires the Water Boards to implement basin plan requirements. (See Wat. Code §§ 13263, 13377; *State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 189.)

board's basin plan. The TMDL program of implementation, which is part of the basin plan amendment, becomes a regulation upon approval by the State of California Office of Administrative Law (OAL).[211] Pursuant to California Water Code sections 13240 and 13242, TMDL programs of implementation adopted by the Regional Water Board "shall include … a time schedule for the actions to be taken [for achieving water quality objectives]," which allows for compliance schedules in future permits. This basin plan amendment becomes the applicable regulation that authorizes an MS4 permit to include a compliance schedule to achieve effluent limitations derived from TMDL WLAs.

Where a TMDL implementation schedule has been established through a basin plan amendment, it is incorporated into the Order as a compliance schedule to achieve interim and final WQBELs and corresponding receiving water limitations, in accordance with 40 CFR section 122.47. WQBELs must be consistent with the assumptions and requirements of any WLA, which includes applicable implementation schedules.[212] California Water Code sections 13263 and 13377 state that waste discharge requirements must implement water quality controls plans (i.e., basin plans).[213] Therefore, permit compliance schedules for attaining WQBELs and receiving water limitations derived from WLAs must be based on a state-adopted TMDL programs of implementation and cannot exceed the maximum time that the implementation schedule allows.

In determining the TMDL implementation schedules, the Los Angeles Water Board considered numerous factors to ensure that the schedules are as short as possible. Factors examined include, but are not limited to, the size and complexity of the watershed; the pollutants being addressed; the number of responsible agencies involved; time for Permittees to negotiate memorandum of agreements; development of water quality management plans; the cost of compliance; identification of funding sources; determination of an implementation strategy based on the recommendations of water quality management plans and/or special studies; and time for the implementation strategies to yield measurable results. Implementation schedules may be altered based on the monitoring and reporting results as set forth in the individual TMDLs by revising the TMDL.

In many ways, the incorporation of interim and final WQBELs, receiving water limitations, and associated compliance schedules is consistent with the inclusion of TMDLs in previous permits in that progress toward compliance with the final effluent limitations may occur over the course of many years. However, because many of the waterbodies in the Los Angeles Region are impaired due to MS4 discharges, it is necessary to establish more specific provisions in order to: (i) ensure measurable reductions in pollutant discharges from the MS4, resulting in progressive water quality

[211] See Gov. Code, § 11353, subd. (b). Every amendment to a Basin Plan, such as a TMDL and its program of implementation, requires approval by the State Water Board and OAL. When the TMDL and program of implementation is approved by OAL, it becomes a state regulation.

[212] See 40 CFR § 122.44(d)(1)(vii)(B).

[213] Cal. Wat. Code, § 13263, subd. (a) ("requirements shall implement any relevant water quality control plans that have been adopted"); Cal. 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 necessary to implement waste quality control plans, or for the protection of beneficial uses, or to prevent nuisance*"); see also, State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 189.

improvements, and (ii) establish a final date for completing implementation of BMPs and, ultimately, achieving WQBELs and receiving water limitations.

The compliance schedules established in the Order are consistent with the implementation schedules established in the individual TMDLs. The TMDL implementation deadlines for each TMDL are listed below in Table F-26. As previously noted, TMDLs established by U.S. EPA do not contain implementation schedules. Unless the Los Angeles Water Board has adopted a separate program of implementation and schedule as a Basin Plan amendment for a U.S. EPA-established TMDL, the implementation date in the table below is the date the TMDL was established by U.S. EPA.

Table F-26. TMDL Final Implementation Deadlines

TOTAL MAXIMUM DAILY LOADS (TMDLs)	Final Implementation Deadline has passed	Final Implementation Deadline between years 1 and 5 (2021-2025)	Final Implementation Deadline between years 6 and 10 (2026-2030)	Final Implementation Deadline after 10 years (2031 and onwards)
VENTURA RIVER WATERSHED				
Ventura River Estuary Trash TMDL	March 6, 2016			
TMDL for Algae, Eutrophic Conditions, and Nutrients in the Ventura River and its Tributaries				
• Wet Weather	June 28, 2013			
• Dry Weather	June 28, 2019			
MISCELLANEOUS VENTURA COASTAL WMA				
Harbor Beaches of Ventura County (Kiddie Beach and Hobie Beach) Bacteria TMDL				
• Dry Weather	December 18, 2013			
• Wet Weather	December 18, 2018			
SANTA CLARA RIVER WATERSHED				
Santa Clara River Nitrogen Compounds TMDL	March 23, 2004			
TMDL for Chloride in the Santa Clara River, Reach 3 (U.S. EPA established)	June 18, 2003			
Upper Santa Clara River Chloride TMDL	April 28, 2015			
Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL				
• Dry Weather		March 21, 2023		
• Wet Weather			March 21, 2029	
Lake Elizabeth, Munz Lake, and Lake Hughes Trash TMDL (Lake Elizabeth only)	March 6, 2016			
Santa Clara River Lakes Nutrients TMDL (Lake Elizabeth only)				June 27, 2032

TOTAL MAXIMUM DAILY LOADS (TMDLs)	Final Implementation Deadline has passed	Final Implementation Deadline between years 1 and 5 (2021-2025)	Final Implementation Deadline between years 6 and 10 (2026-2030)	Final Implementation Deadline after 10 years (2031 and onwards)
CALLEGUAS CREEK WATERSHED				
TMDL for Organochlorine (OC) Pesticides, Polychlorinated Biphenyls (PCBs), and Siltation in Calleguas Creek, Its Tributaries, and Mugu Lagoon			March 24, 2026	
TMDL for Toxicity, Chlorpyrifos, and Diazinon in the Calleguas Creek, its Tributaries, and Mugu Lagoon	March 24, 2008			
TMDL for Metals and Selenium in Calleguas Creek, its Tributaries, and Mugu Lagoon		March 27, 2022		
Revolon Slough and Beardsley Wash Trash TMDL	March 6, 2016			
TMDL for Boron, Chloride, Sulfate, and TDS (Salts) in the Calleguas Creek Watershed		December 2, 2023		
TMDLs for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3 (U.S. EPA established)	October 6, 2011			
SANTA MONICA BAY WATERSHED				
Santa Monica Bay Beaches Bacteria TMDL[214]				
• Summer Dry Weather	July 15, 2006			
• Winter Dry Weather	November 1, 2009			
• Wet Weather	July 15, 2021			

[214] The following deadlines for the Santa Monica Bay Beaches Bacteria TMDL are applicable until the effective date of the revised SMB Bacteria TMDL (Attachment A to Resolution No. R21-001).

TOTAL MAXIMUM DAILY LOADS (TMDLs)	Final Implementation Deadline has passed	Final Implementation Deadline between years 1 and 5 (2021-2025)	Final Implementation Deadline between years 6 and 10 (2026-2030)	Final Implementation Deadline after 10 years (2031 and onwards)
Santa Monica Bay Beaches Bacteria TMDL (Revised)[215]				
• Summer Dry Weather	July 15, 2006			
• Winter Dry Weather	November 1, 2009			
• Wet Weather – Antidegradation Beach Sites	July 15, 2021			
• Wet Weather – Jurisdictional Groups 1, 4, 5, 6, and 9		July 15, 2024		
• Wet Weather – Jurisdictional Groups 2 and 3			July 15, 2026	
Santa Monica Bay Nearshore and Offshore Debris TMDL[216]				
• Permittees, except Manhattan Beach	March 20, 2020			
• Manhattan Beach		March 20, 2023		
Santa Monica Bay Nearshore and Offshore Debris TMDL (Revised)[217]				
• Permittees, except Hermosa Beach, Malibu and Manhattan Beach	March 20, 2020			
• Hermosa Beach, Malibu and Manhattan Beach		March 20, 2023		
Santa Monica Bay TMDL for DDTs and PCBs (U.S. EPA established)	March 26, 2012			

[215] Upon the effective date of the revised SMB Bacteria TMDL (Attachment A to Resolution No. R21-001), the following deadlines shall be applicable.
[216] The following deadlines for the Santa Monica Bay Nearshore and Offshore Debris TMDL (SMB Debris TMDL) are applicable until the effective date of the revised SMB Debris TMDL (Attachment A to Resolution No. R19-004).
[217] Upon the effective date of the revised SMB Debris TMDL (Attachment A to Resolution No. R19-004), the following deadlines shall be applicable.

TOTAL MAXIMUM DAILY LOADS (TMDLs)	Final Implementation Deadline has passed	Final Implementation Deadline between years 1 and 5 (2021-2025)	Final Implementation Deadline between years 6 and 10 (2026-2030)	Final Implementation Deadline after 10 years (2031 and onwards)
MALIBU CREEK SUBWATERSHED				
Malibu Creek and Lagoon Bacteria TMDL[218]				
• Dry Weather	January 24, 2012			
• Wet Weather	July 15, 2021			
Malibu Creek and Lagoon Bacteria TMDL (Revised)[219]				
• Dry Weather	January 24, 2012			
• Wet Weather			July 15, 2026	
Malibu Creek Watershed Trash TMDL	July 7, 2017			
TMDLs for Nutrients - Malibu Creek Watershed (U.S. EPA established)[220]				
• Los Angeles County Permittees above Malibou Lake		December 28, 2021		
• Ventura County Permittees			Five years from effective date of the Order	
TMDLs for Nutrients - Malibu Creek Watershed (U.S. EPA established) (Revised Program of Implementation)[221]				
• Los Angeles County Permittees above Malibou Lake			July 15, 2026	

[218] The following deadlines for the Malibu Creek and Lagoon Bacteria TMDL (Malibu Creek Bacteria TMDL) are applicable until the effective date of the revised Malibu Creek Bacteria TMDL (Attachment C to Resolution No. R21-001).

[219] Upon the effective date of the revised Malibu Creek Bacteria TMDL (Attachment C to Resolution No. R21-001), the following deadlines shall be applicable.

[220] The following deadlines for the TMDLs for Nutrients - Malibu Creek Watershed are applicable until the effective date of the revised Implementation Plan for the U.S. EPA-Established Malibu Creek Nutrients TMDL and the U.S. EPA-Established Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments (Implementation Plan for Malibu Creek Nutrients and Sedimentation TMDLs) (Attachment H to Resolution No. R21-001).

[221] Upon the effective date of the revised Implementation Plan for Malibu Creek Nutrients and Sedimentation TMDLs (Attachment H to Resolution No. R21-001), the following deadlines shall be applicable.

TOTAL MAXIMUM DAILY LOADS (TMDLs)	Final Implementation Deadline has passed	Final Implementation Deadline between years 1 and 5 (2021-2025)	Final Implementation Deadline between years 6 and 10 (2026-2030)	Final Implementation Deadline after 10 years (2031 and onwards)
• Ventura County Permittees			Five years from effective date of the Order	
Malibu Creek and Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Community Impairments (U.S. EPA established)[222]				
• Los Angeles County Permittees below Malibou Lake (Nitrogen and Phosphorus)		December 28, 2023		
• Los Angeles County Permittees below Malibou Lake (Sediment)		December 28, 2025		
Malibu Creek and Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Community Impairments (U.S. EPA established) (Revised Program of Implementation)[223]				
• Los Angeles County Permittees below Malibou Lake (Nitrogen and Phosphorus)			July 15, 2026	
• Los Angeles County Permittees below Malibou Lake (Sediment)		December 28, 2025		
BALLONA CREEK SUBWATERSHED				
Ballona Creek Trash TMDL	September 30, 2015			

[222] The following deadlines for the Malibu Creek and Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Community Impairments are applicable until the effective date of the revised Implementation Plan for Malibu Creek Nutrients and Sedimentation TMDLs (Attachment H to Resolution No. R21-001).

[223] Upon the effective date of the revised Implementation Plan for Malibu Creek Nutrients and Sedimentation TMDLs (Attachment H to Resolution No. R21-001), the following deadlines shall be applicable.

TOTAL MAXIMUM DAILY LOADS (TMDLs)	Final Implementation Deadline has passed	Final Implementation Deadline between years 1 and 5 (2021-2025)	Final Implementation Deadline between years 6 and 10 (2026-2030)	Final Implementation Deadline after 10 years (2031 and onwards)
Ballona Creek Estuary Toxic Pollutants TMDL[224]				
• Metals, Total Chlordane and Total DDTs	January 11, 2021			
• Total PCBs		January 11, 2025		
Ballona Creek Estuary Toxic Pollutants TMDL (Revised)[225]				
• Metals, Total Chlordane, Total DDTs, and Total PCBs			July 15, 2026	
Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL[226]				
• Dry Weather	April 27, 2013			
• Wet Weather	July 15, 2021			
Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL (Revised)[227]				
• Dry Weather	April 27, 2013			
• Wet Weather			July 15, 2026	
Ballona Creek Metals TMDL[228]				
• Dry Weather	January 11, 2016			
• Wet Weather	January 11, 2021			
Ballona Creek Metals TMDL (Revised)[229]				
• Dry Weather	January 11, 2016			

[224] The following deadlines for the Ballona Creek Estuary Toxic Pollutants TMDL are applicable until the effective date of the revised Ballona Creek Estuary Toxic Pollutants TMDL (Attachment D to Resolution No. R21-001).

[225] Upon the effective date of the revised Ballona Creek Estuary Toxic Pollutants TMDL (Attachment D to Resolution No. R21-001), the following deadlines shall be applicable.

[226] The following deadlines for the Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL (Ballona Creek Bacteria TMDL) are applicable until the effective date of the revised Ballona Creek Bacteria TMDL (Attachment F to Resolution No. R21-001).

[227] Upon the effective date of the revised Ballona Creek Bacteria TMDL (Attachment F to Resolution No. R21-001), the following deadlines shall be applicable.

[228] The following deadlines for the Ballona Creek Metals TMDL are applicable until the effective date of the revised Ballona Creek Metals TMDL (Attachment G to Resolution No. R21-001).

[229] Upon the effective date of the revised Ballona Creek Metals TMDL (Attachment G to Resolution No. R21-001), the following deadlines shall be applicable.

TOTAL MAXIMUM DAILY LOADS (TMDLs)	Final Implementation Deadline has passed	Final Implementation Deadline between years 1 and 5 (2021-2025)	Final Implementation Deadline between years 6 and 10 (2026-2030)	Final Implementation Deadline after 10 years (2031 and onwards)
• Wet Weather			July 15, 2026	
Ballona Creek Wetlands TMDL for Sediments and Invasive Exotic Vegetation (U.S. EPA established)	March 26, 2012			
MARINA DEL REY SUBWATERSHED				
Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL[230]				
• Dry Weather	March 18, 2007			
• Wet Weather	July 15, 2021			
Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL (Revised)[231]				
• Dry Weather	March 18, 2007			
• Wet Weather		July 15, 2024		
Marina del Rey Harbor Toxic Pollutants TMDL[232]				
• Back Basins D, E and F	March 22, 2018			
• Front Basins A, B, C, G and H	March 22, 2021			
Marina del Rey Harbor Toxic Pollutants TMDL (Revised)[233]				
• Basins A through H		July 15, 2024		
DOMINGUEZ CHANNEL AND GREATER HARBORS WATERS WATERSHED				
Los Angeles Harbor Bacteria TMDL (Inner Cabrillo Beach and Main Ship Channel)	March 10, 2010			

[230] The following deadlines for the Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL (MdRH Bacteria TMDL) are applicable until the effective date of the revised MdRH Bacteria TMDL (Attachment B to Resolution No. R21-001).

[231] Upon the effective date of the revised Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL (Attachment B to Resolution No. R21-001), the following deadlines shall be applicable.

[232] The following deadlines for the Marina del Rey Harbor Toxic Pollutants TMDL are applicable until the effective date of the revised Marina del Rey Harbor Toxic Pollutants TMDL (Attachment E to Resolution No. R21-001).

[233] Upon the effective date of the revised Marina del Rey Harbor Toxic Pollutants TMDL (Attachment E to Resolution No. R21-001), the following deadlines shall be applicable.

TOTAL MAXIMUM DAILY LOADS (TMDLs)	Final Implementation Deadline has passed	Final Implementation Deadline between years 1 and 5 (2021-2025)	Final Implementation Deadline between years 6 and 10 (2026-2030)	Final Implementation Deadline after 10 years (2031 and onwards)
Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL				March 23, 2032
Machado Lake Trash TMDL	March 6, 2016			
Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL	September 11, 2018			
Machado Lake Pesticides and PCBs TMDL	September 30, 2019			
LOS ANGELES RIVER WATERSHED				
Los Angeles River Watershed Trash TMDL	September 30, 2016			
Los Angeles River Nitrogen Compounds and Related Effects TMDL	March 23, 2004			
Los Angeles River and Tributaries Metals TMDL				
• Dry Weather		January 11, 2024		
• Wet Weather			January 11, 2028	
Los Angeles River Watershed Bacteria TMDL				
• Dry Weather: Segment B – Alternative Compliance Plan		March 23, 2022		
• Dry Weather: Segment B – Load Reduction Strategy (LRS)			September 23, 2028	
• Dry Weather: Segment B Tributaries – Alternative Compliance Plan		September 23, 2023		
• Dry Weather: Segment B Tributaries – LRS			March 23, 2030	

TOTAL MAXIMUM DAILY LOADS (TMDLs)	Final Implementation Deadline has passed	Final Implementation Deadline between years 1 and 5 (2021-2025)	Final Implementation Deadline between years 6 and 10 (2026-2030)	Final Implementation Deadline after 10 years (2031 and onwards)
• Dry Weather: Segment A – Alternative Compliance Plan		March 23, 2024		
• Dry Weather: Segment A – LRS				September 23, 2031
• Dry Weather: Segment A Tributary – Alternative Compliance Plan		September 23, 2025		
• Dry Weather: Segment A Tributary – LRS				March 23, 2032
• Dry Weather: Segment E – Alternative Compliance Plan		March 23, 2025		
• Dry Weather: Segment E – LRS				September 23, 2031
• Dry Weather: Segment E Tributaries – Alternative Compliance Plan			March 23, 2029	
• Dry Weather: Segment E Tributaries – LRS				September 23, 2035
• Dry Weather: Segment C, Segment C Tributaries, Segment D, Segment D Tributaries – Alternative Compliance Plan			September 23, 2030	
• Dry Weather: Segment C, Segment C Tributaries, Segment D, Segment D Tributaries – LRS				March 23, 2037
• Wet Weather				March 23, 2037
Long Beach City Beaches and Los Angeles River Estuary	March 26, 2012			

TOTAL MAXIMUM DAILY LOADS (TMDLs)	Final Implementation Deadline has passed	Final Implementation Deadline between years 1 and 5 (2021-2025)	Final Implementation Deadline between years 6 and 10 (2026-2030)	Final Implementation Deadline after 10 years (2031 and onwards)
Bacteria TMDL (U.S. EPA established)				
Legg Lake Trash TMDL	March 6, 2016			
Los Angeles Area Lakes TMDLs: Legg Lake System, Lake Calabasas, Echo Park Lake and Peck Road Park Lake TMDLS (U.S. EPA established)	March 26, 2012			
SAN GABRIEL RIVER WATERSHED				
San Gabriel River and Impaired Tributaries Metals and Selenium TMDL (U.S. EPA established)				
• Dry Weather		September 30, 2023		
• Wet Weather			September 30, 2026	
San Gabriel River, Estuary and Tributaries Indicator Bacteria TMDL				
• Dry Weather			June 14, 2026	
• Wet Weather				June 14, 2036
Los Angeles Area Lakes TMDLs: Puddingstone Reservoir Nutrient, Mercury, Chlordane, Dieldrin, DDTs and PCBs TMDLs (U.S. EPA established)	March 26, 2012			
LOS CERRITOS CHANNEL AND ALAMITOS BAY WATERSHED				
Los Cerritos Channel Metals TMDL (U.S. EPA established)				
• Dry Weather		September 30, 2023		
• Wet Weather			September 30, 2026	
Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs and Metals TMDL	July 28, 2018			

H. Considerations Regarding Extensions of TMDL Deadlines

Using mechanisms outside of the Order (e.g., Time Schedule Orders, Basin Plan Amendments to revise TMDL implementation schedules), for Los Angeles Water Board-adopted TMDL implementation schedules, the Los Angeles Water Board may consider providing additional time to implement measures to achieve WQBELs and receiving water limitations to more closely align with available funding from the Benefit Assessment Program, Safe, Clean Water Program, and other funding sources available to Permittees as summarized in Part XIII.D.3 of this Fact Sheet (Economic Considerations – Funding Sources).

1. Benefit Assessment Program

On April 14, 1992, the Ventura County Board of Supervisors approved the concept of a countywide NPDES permit program and the use of the Flood Management District (presently the Watershed Protection District) benefit assessment authority to finance it. On June 30, 1992, the Ventura County Board of Supervisors adopted a benefit assessment fee for stormwater and flood management in the unincorporated areas of Ventura County and the cities within the County, to be used in part to finance the implementation of a countywide NPDES municipal stormwater permit program. The Ventura County Permittees except for the City of Moorpark entered into an agreement with the Watershed Protection District to finance the activities related to the Ventura County MS4 Permit for shared and district-wide expenses. The Permittees are also given the option to use the Benefit Assessment Program to finance their respective activities related to reducing the discharge of pollutants from their MS4s under the MS4 Permit.

2. Safe, Clean Water Program

In November 2018, Los Angeles County voters approved Measure W, adopting the Safe, Clean Water Program, which will generate up to $285 million per year from a special parcel tax on private property to capture, conserve, and treat stormwater to improve water quality, increase local water supply, and enhance communities. The County began dispersing revenues from the collected taxes. (See, Table F-20) The Safe, Clean Water Program will be reevaluated in 30 years. Fifty percent of the Safe, Clean Water Program funds will be allocated to the “Regional Program”, which will consist of projects and programs at the watershed scale to address stormwater from multiple municipalities. As of August 2020, the current projected revenue for the Regional Program is $140.6 million per year. Forty percent of the funds will be allocated directly to municipalities as part of the “Municipal Program” for local stormwater projects and programs. As of August 2020, the current projected revenue for the Municipal Program is $112.6 million per year. Ten percent of the Safe, Clean Water Program funds will be allocated to the “District Program” for general administration of the program including, but not limited to, technical assistance teams, watershed coordinators funded through the Regional Technical Resources Program (TRP), stormwater education programs, and District Projects.

The Los Angeles Water Board may decide to extend deadlines based on availability and distribution of Safe, Clean Water Program funding and other dedicated funding sources, on the funding allocation schemes contained in the Stormwater Investment Plans developed by each Watershed Area Steering Committee for the Regional Program funds, and funding allocations in the fiscal year plans developed by each municipality for the Municipal Program funds. Based

on a comparison of the locations of prioritized projects and those waterbodies with upcoming deadlines, the Los Angeles Water Board can determine if additional time is warranted to allow for Safe, Clean Water Program revenues to accrue to fund in part or total the projects needed to comply with WQBELs and receiving water limitations.

VII. RATIONALE FOR RECEIVING WATER LIMITATIONS

Clean Water Act section 402(p)(3)(B)(iii) requires MS4 permits to include "such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants." U.S. EPA interprets this provision to mandate "controls to reduce the discharge of pollutants to the maximum extent practicable, *and where necessary water quality-based controls*."[234] U.S. EPA has reiterated 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."[235] U.S. EPA 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.[236] Likewise, the State Water Board has affirmed that MS4 permits must include requirements necessary to achieve compliance with the applicable technology-based standard of MEP and to achieve water quality standards.[237] The permitting agency, be it the Los Angeles Water Board or U.S. EPA, must therefore include provisions when it finds it is appropriate to do so to control pollutants in a specific geographic area. California Water Code section 13377 also requires that NPDES permits include limitations necessary to implement water quality control plans. Both the State Water Board and Los Angeles 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 necessary and appropriate to control MS4 discharges in the Los Angeles Region.

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 1159, 1166 (1999)) 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 has 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 included in the Order to ensure that individual and collective discharges from the MS4 do not cause or contribute to exceedances of water quality standards necessary to protect the beneficial uses of the receiving waters.

The receiving water limitations in the Order consist of all applicable numeric or narrative water quality objectives or criteria, or limitations to implement the applicable water quality

[234] Phase I Stormwater Regulations, Final Rule, 55 Fed. Reg. 47990, 47994 (Nov. 16, 1990) (emphasis added); see also *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd*. (2004) 124 Cal.App.4th 866, 882-887).

[235] See, e.g., Phase II Stormwater Regulations, Final Rule, 64 Fed. Reg. 68722, 68737.

[236] See, e.g., letter from Alexis Strauss, Acting Director, Water Division, U.S. EPA Region IX, to Walt Pettit, Executive Director, State Water Board, re: SWRCB/OCC File A-1041 for Orange County, dated January 21, 1998.

[237] See, e.g., State Water Board Orders WQ 99-05, WQ 2001-15, and WQ 2015-0075.

objectives or criteria, for receiving waters as contained in Chapters 3 and 7 of the Basin Plan, or in water quality control plans or policies adopted by the State Water Resources Control Board, including Resolution No. 68-16, or in federal regulations, including but not limited to, 40 CFR sections 131.12 and 131.38. The water quality objectives in the Basin Plan and other State Water Board plans and policies have been approved by U.S. EPA and combined with the designated beneficial uses and the state's antidegradation policy constitute the water quality standards required under federal law.

The receiving water limitations provisions in the Order are carried over from the previous permits and are based on precedential State Water Board Orders WQ 98-01, WQ 99-05, and WQ 2015-0075. In Order 99-05, the State Water Board directed that all MS4 permits contain specific language explaining how receiving water limitations will be implemented. Since 2001, the Los Angeles Water Board has included this language in all MS4 permits. After re-examining the receiving water limitations and iterative process in MS4 permits statewide, in 2015, the State Water Board proclaimed the following:

> As the storm water management programs of municipalities have matured, an increasing body of monitoring data indicates that many water quality standards are in fact not being met by many MS4s. The iterative process has been underutilized and ineffective to date in bringing MS4 discharges into compliance with water quality standards. Compliance with water quality standards is and should remain the ultimate goal of any MS4 permit. We reiterate and confirm our determination that provisions requiring compliance with receiving water limitations are "appropriate for the control of . . . pollutants" addressed in MS4 permits and that therefore, consistent with our authority under the Clean Water Act, we will continue to require compliance with receiving water limitations. (Order WQ 2015-0075, p. 14.)

Having determined that it will not depart from its prior precedent regarding compliance with water quality standards, the State Water Board directed that the "regional water boards shall continue to require compliance with receiving water limitations in municipal storm water permits through incorporation of receiving water limitations provisions consistent with State Water Board Order WQ 99-05." (*Id*., p. 76.)

Thus, consistent with State Water Board Order 99-05, the 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 Water 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.[238]

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 so-called "iterative process" whereby certain actions are

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

required when exceedances of receiving water limitations occur and discharges from the MS4 are implicated. This iterative process includes submitting a Receiving Water Limitations Compliance Report; revising the stormwater management program and its components to include additional BMPs, an implementation schedule and additional monitoring to address the exceedances; and implementing the revised stormwater management program. The inclusion of this protocol for estimating BMP effectiveness and taking additional actions such as implementing additional BMPs and/or modifying BMPs to improve their effectiveness when monitoring demonstrates that they are necessary to protect water quality is consistent with U.S. EPA's expectations for MS4 permits.[239]

The State and Los Angeles Water Boards have stated that each of the three provisions are independently applicable, meaning that compliance with one provision does not provide a "safe harbor" where there is non-compliance with another provision (i.e., compliance with the third provision does not shield a Permittee who may have violated the first or second provision from an enforcement action). Rather, the third provision is intended to ensure that the necessary stormwater management programs and controls are in place, and that they are modified by Permittees in a timely fashion when necessary, so that the first two provisions are achieved as soon as possible. U.S. EPA expressed the importance of this independent applicability in a series of comment letters on MS4 permits proposed by various regional water boards. At that time, U.S. EPA expressly objected to certain MS4 permits that included language stating, "permittees will not be in violation of this [receiving water limitation] provision …[if certain steps are taken to evaluate and improve the effectiveness of the Drainage Area Management Plan (DAMP)]," concluding that this phrase would not comply with the CWA.[240]

The Receiving Water Limitations provisions of the 2001 Los Angeles County MS4 permit (Order No. 01-182) have been litigated twice, and in both cases the courts have upheld the language and the State and Los Angeles Water Boards' interpretation of it. Both courts ruled that the first two provisions are independently applicable from the third provision that establishes the "iterative process" requirements and no "safe harbor" exists.

The provisions were first litigated in 2005 where the Los Angeles County Superior Court stated, "In sum, the Regional [Water] Board acted within its authority when it included Parts 2.1 and 2.2 in the Permit without a 'safe harbor,' whether or not compliance therewith requires efforts that exceed the 'MEP' standard." (*In re L.A. Cnty. Mun. Storm Water Permit Litig.* (L.A. Super. Ct., No. BS 080548, Mar. 24, 2005) Statement of Decision from Phase I Trial on Petitions for Writ of Mandate, pp. 4-5, 7.) The Court of Appeal upheld the 2001 Los Angeles County MS4 Permit. (*County of Los Angeles et al. v. California State Water Resources Control Board et al.* (2006) 143 Cal.App.4th 985).

The provisions were again litigated in 2011. In that case, the Ninth Circuit Court of Appeals in *NRDC v. County of Los Angeles* (673 F.3d 880, 886) affirmed that the iterative process (in Part 2.3 of Order No. 01-182) does not "forgive" violations of the discharge prohibitions (in Parts 2.1 and 2.2 of Order No. 01-182). The court acknowledged that Part 2.3 clarifies that Parts 2 and 3 interact, but the court concluded that Part 2.3 "offers no textual support for the proposition that compliance with certain provisions shall forgive non-compliance with the

[239] See, e.g., U.S. EPA 2014 memorandum, "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs'" dated November 26, 2014.

[240] 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.

discharge prohibitions." The Ninth Circuit further concluded that, "[a]s opposed to absolving noncompliance or exclusively adopting the MEP standard, the iterative process ensures that if water quality exceedances 'persist,' despite prior abatement efforts, a process will commence whereby a responsible Permittee amends its SQMP. Given that Part 3 of the [2001] Permit states that SQMP implementation is the 'minimum' required of each Permittee, the discharge prohibitions serve as additional requirements that operate as enforceable water-quality-based performance standards required by the Regional Board."

Additionally, in 2015, the State Water Board specifically addressed the issue of whether compliance with the "iterative process" in part 3 constituted compliance with parts one and two of the receiving water limitation provisions in precedential State Water Board Order WQ 2015-0075 (concerning the 2012 Los Angeles MS4 Permit).[241] Given "significant confusion" amongst permittees, the State Water Board clarified once again that compliance with the "iterative process" is not a "safe harbor" and that MS4 discharges that are causing or contributing to an exceedance of water quality standards are in violation of the permit.[242] The State Water Board also expressly rejected arguments that State Water Board Order WQ 2001-15 stands for the proposition that the iterative process is a "safe harbor." [243]

VIII. RATIONALE FOR STANDARD PROVISIONS

Standard Provisions incorporated in the Order have been carried over from the previous MS4 permits.

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in Attachment D. Dischargers must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

B. Legal Authority

A Permittee must have adequate legal authority to implement its stormwater management program, including minimum control measures, and all equivalent actions if implemented through a Watershed Management Program (see 40 CFR section 122.26(d)(2)(i)(A)-(F) and 40 CFR section 122.26(d)(2)(iv)). Without adequate legal authority, the Permittee would be unable to perform many functions such as performing inspections, requiring remedies, and requiring installation of control measures. In addition, the Permittee would not be able to conduct enforcement, where necessary. Additionally, pursuant to 40 CFR sections 122.26(d)(1)(ii) and 122.26(d)(2)(iv), each Permittee must also maintain the necessary legal authority to control the contribution of pollutants to its MS4 and must include in its stormwater management program a comprehensive planning process that includes intergovernmental coordination, where necessary. As noted elsewhere, federal, state, regional or local entities not named as a Permittee in the Order may operate MS4 facilities and/or discharge to the Permittees' MS4s and water bodies covered by the Order (e.g., California Department of Transportation). The abovementioned requirement is intended to address, in part, these circumstances.

[241] See generally discussion pages 10-12 of State Board Order WQ 2015-0075.
[242] *Id*. at 12.
[243] *Id*. at p. 12, fn. 44.

C. Fiscal Resources

Section 122.26(d)(2)(vi) of Title 40 of the Code of Federal Regulations requires, for each fiscal year to be covered by the permit, a fiscal analysis of the necessary capital and operation and maintenance expenditures necessary to accomplish the activities of the stormwater management program, including monitoring program. The analysis is to include a description of the source(s) of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds. Additionally, 40 CFR section 122.42(c)(5) requires that annual reports for MS4 permits include annual expenditures and budget for year following each annual report. The inclusion of the requirement to perform a fiscal analysis annually in the Regional MS4 Permit was carried over from the previous permits. The annual fiscal analysis will show the allocated resources, expenditures, and staff resources necessary to comply with the Regional MS4 Permit, including implementation of the Permittee's Watershed Management Program, where applicable. The annual analysis is necessary to show that the Permittee has adequate resources to meet all Permit requirements. The analysis can also show year-to-year changes in funding for the MS4 program. A summary of the annual analysis must be reported in the annual report. This analysis will help the Los Angeles Water Board understand the resources that are dedicated to compliance with this permit including the implementation of Watershed Management Programs, and track how costs change over time. Permittees will provide their annual fiscal analysis in Attachment H (Annual Report Form) of the Order. Attachment H of the Order identifies a consistent reporting format for this fiscal analysis as recommended by the State Auditor in its Report 2017-118 on the State and Regional Water Boards MS4 programs. This reporting format is based on the statewide guidance, "Guidance for Obtaining Phase I Municipal Separate Storm Sewer System Permit (MS4) Compliance Costs," prepared by the State Water Board in response to the State Auditor's recommendation.[244]

D. Responsibilities of the Permittees

Because of the complexity and networking of the storm drain system and drainage facilities within the Los Angeles Region, the Los Angeles Water Board adopted a region-wide approach in permitting stormwater and urban runoff discharges. (See Part I.D of this Fact Sheet) Note that the 2010 Ventura County MS4 Permit was structured to assign certain requirements to the Principal Permittee (Ventura County Watershed Protection District) and other requirements to the other Ventura County Permittees. As this is a Regional MS4 Permit and applies to both Los Angeles County and Ventura County MS4 Permittees, the retention of a Principal Permittee as discussed in Part II.D of this Fact Sheet is no longer applicable. Accordingly, there are no separate requirements for the Principal Permittee in the Regional MS4 Permit. Consistent with the previous permits, the Regional MS4 Permit is structured to require all Permittees to comply with the requirements of the Order as applicable to its discharges. However, it does not hold a Permittee responsible for implementation of provisions applicable to other Permittees. Note that, in some cases, the Order includes specific requirements for Los Angeles County Permittees and others for Ventura County Permittees and, in some cases, the Order includes specific requirements for the two flood control districts. These cases are clearly indicated in the Order.

[244] State Water Resources Control Board (2020) "Guidance for Obtaining Phase I Municipal Separate Storm Sewer System Permit (MS4) Compliance Costs." August 12, 2020.

Parts VI.D.4-5 of the Order requires inter- and intra-agency coordination to facilitate implementation of the Order. This requirement is based on 40 CFR section 122.26(d)(2)(iv), which requires "a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate […]."

E. Public Review and Los Angeles Water Board Review

Public review and Los Angeles Water Board review provisions have been carried over from the previous permits. These provisions reflect federal and state requirements to make documents available to members of the public pursuant to the Freedom of Information Act (5 U.S.C. § 552 (as amended)) and the Public Records Act (Cal. Government Code § 6250 et seq.). They also reflect the Los Angeles Water Board's commitment to public participation during implementation of the Regional MS4 Permit.

F. Reopener and Modification Provisions

These provisions are based on 40 CFR sections 122.44, 122.62, 122.63, 122.64, 124.5, 125.62, and 125.64, and are also carried over from the previous permits. The Los Angeles Water Board may reopen the permit to modify permit conditions and requirements, as well as revoke, reissue, or terminate in accordance with federal regulations. Causes for such actions include, but are not limited to, endangerment to human health or the environment; acquisition of newly-obtained information that would have justified the application of different conditions if known at the time of Order adoption; to incorporate provisions as a result of new federal or state laws, regulations, plans, or policies (including TMDLs and other Basin Plan amendments); modification in toxicity requirements; violation of any term or condition in the Order; and/or minor modifications to correct typographical errors or require more frequent monitoring or reporting by a Permittee. The Order also includes two additional causes for modification, which have been carried over from prior permits, including: 1) where the revisions warrant a change to the provisions of the Order, the Los Angeles Water Board may modify the Order consistent with the assumptions and requirements of the revised WLA(s), including the program of implementation and schedule; and 2) to include provisions or modifications to WQBELs in Part IV and Attachments K-S in the Order prior to the final compliance deadlines, if practicable, that would allow an action-based, BMP compliance demonstration approach with regard to final WQBELs for stormwater discharges based on the Los Angeles Water Board's evaluation of whether Watershed Management Programs in Part VI.C of the Order have resulted in attainment of interim WQBELs for stormwater and review of relevant research, including but not limited to data and information provided by Permittees and other stakeholders, on stormwater quality and the efficacy and reliability of control technologies.

G. Other Provisions

Other provisions in the Standard Provisions of the Order not specifically discussed above were carried over from the previous permits.

IX. RATIONALE FOR STORMWATER MANAGEMENT PROGRAMS AND MCMs

The required components of stormwater management programs and minimum control measures (MCMs) are specifically set forth in Part VIII.D through Part VIII.I of the Order. However, each of these six Parts have several overlapping requirements (including timelines

for implementation, municipal employee and contractor training and progressive enforcement), which are addressed in Part VIII.A through Part VIII.C of the Order.

A. General Requirements

1. Basis for Minimum Control Measures (MCMs)

40 CFR section 122.26(d)(2)(iv) establishes required elements of the Permittees' stormwater management program. The previous permits included six categories of minimum control measures (or MCMs) that are the baseline programmatic elements for meeting the requirements of 40 CFR section 122.26(d)(2)(iv). The minimum control measures require Permittees to implement BMPs that are considered necessary to reduce pollutants in stormwater to the MEP and to effectively prohibit non-stormwater discharges. In lieu of implementing the MCMs as described in Part VIII.A.1 of the Order, the Order allows Permittees to develop alternative BMPs to comply with 40 CFR section 122.26(d)(2)(iv) when implemented through a Watershed Management Program approved by the Los Angeles Water Board.

2. Timelines for Implementation

The timelines for implementation of MCMs are specified in Part VIII.A.2 of the Order where all Permittees must implement the MCMs no later than 6 months from the effective date of the Order or per specific timelines indicated in the Order. If participating in a Watershed Management Program, the MCMs are required to be integrated in the new or revised Watershed Management Program. Since Permittees have been implementing MCMs in the previous permits, they are expected to continue implementing their MCMs. Ventura County Permittees that elect to develop a Watershed Management Program shall continue to implement their existing stormwater management programs, including actions within each of the six categories of minimum control measures consistent with 40 CFR section 122.26(d)(2)(iv) until the Watershed Management Program is approved by the Los Angeles Water Board. Likewise, Los Angeles County Permittees that opt to continue implementing an approved Watershed Management Program shall continue to implement the six categories of MCMs as approved in their Watershed Management Program until any revision to their Watershed Management Program is approved by the Los Angeles Water Board.

3. Municipal Employee and Contractor Training

Municipal training requirements are necessary to implement CWA section 402(p)(3)(B)(ii) and (iii). The Los Angeles Water Board finds that specifying training requirements for municipal employees and contractors is necessary to prevent or minimize the potential discharge of pollutants through the MS4 to receiving waters as explained in the following paragraphs. Municipal employees whose jobs affect stormwater quality must be trained in stormwater management to ensure that non-stormwater discharges are effectively prohibited, the discharge of pollutants in stormwater is reduced to the maximum extent practicable, and other provisions to control pollutants in MS4 discharges are implemented as required. The Order retains municipal employee and contractor training requirements from the previous Los Angeles County, City of Long Beach, and Ventura County permits. Note that the previous permits included training requirements within each MCM. Specific requirements were included in the Public Agency Activities MCM, Illicit Connection and Illicit Discharge MCM, Construction MCM, and Planning and Land

Development MCM. For better organization, the Order includes these provisions under the General Provisions in Part VIII.A of the Order where training requirements apply to all municipal employees and contractors implementing the stormwater management program and includes specific training requirements for the Illicit Discharge Detection and Elimination (IDDE), Construction, and Industrial/Commercial Facilities MCMs.

U.S. EPA's MS4 Permit Improvement Guide supports the conclusion that municipal employee and contractor training requirements are necessary to meet federal requirements. U.S. EPA states, "[f]ederal stormwater regulations (see 40 C.F.R. 122.34(b)(6) and 40 C.F.R. 122.26(d)(2)(iv)(A)) require the operator of a regulated MS4 community to develop a program to… [t]rain employees on how to incorporate pollution prevention/good housekeeping techniques into municipal operations."[245] The Guide includes example permit provisions that state, "[p]ermittees must develop an annual training program for appropriate employees involved in implementing pollution prevention and good housekeeping practices in the preceding Parts" and "[t]he permittee must provide oversight of contractor activities to ensure that contractors are using appropriate control measures and [standard operating procedures]."[246] U.S. EPA also provides several examples of permits with similar training requirements.[247] Moreover, U.S. EPA-issued MS4 permits commonly include pollution prevention training requirements for municipal staff.[248,249,250]

Federal regulations identify the need for a program to reduce pollutants in discharges from MS4s associated with the application of pesticides, herbicides, and fertilizer.[251] Training programs for the application of pesticides and fertilizer are necessary to comply with these regulations. A municipal training program addresses these federal requirements, in part, by including "certifications and other measures for commercial applicators and distributors." Federal regulations for small MS4s explicitly outline the requirement for permits to include training provisions:

> "The permit must identify the minimum elements and require the development and implementation of an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. Using training materials that are available from EPA, the State, Tribe, or other organizations, the program must include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building

[245] U.S. EPA. *MS4 Improvement Guide* (2010), pp. 67, 83.
[246] *Id*., at p. 84.
[247] Compendium of MS4 Permitting Examples, Part 1: Six Minimum Control Measures. Office of Wastewater Management, Water Permits Division. November 2016. 810-U-16-001.
[248] Maryland Department of the Environment, National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Discharge Permit, NPDES No. MD0068276, Effective October 9, 2015. p. 6.
[249] NPDES permit (DC0000221) issued to Government of the District of Columbia, with final signed Modification #1, effective November 9, 2012. pp. 20-21.
[250] NPDES permit (IDS-027561) issued to Ada County Highway District, Boise State University, City of Boise, City of Garden City. Drainage District #3, and the Idaho Transportation Department District #3. Effective February 1, 2013. p. 26 and 29.
[251] 40 CFR § 122.26(d)(2)(iv)(A)(6).

maintenance, new construction and land disturbances, and storm water system maintenance."[252]

Federal regulations at 40 CFR section 122.26(d)(2)(iv)(B)(6) require a description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials. The Order requires each Permittee to train field staff who may come into contact or observe illicit discharges on the identification and proper procedures for responding to and reporting illicit discharges. The previous Los Angeles County, City of Long Beach, and Ventura County permits had similar requirements. Municipal maintenance and repair activities are frequently conducted in areas where illicit connections and discharges occur. Therefore, municipal employees who are not assigned specifically to implement a municipality's illicit discharge detection and elimination (IDDE) program are often good resources for reporting illicit connections and discharges.

The U.S. EPA MS4 Permit Improvement Guide states that, "Phase I MS4 regulations specify that several key elements be included in Phase I MS4 stormwater management programs [to control pollutants in stormwater discharges to the MS4 from industrial and commercial facilities]. These elements include: adequate legal authority to require compliance and inspect sites, inspection of priority industrial and commercial facilities, establishing control measure requirements for facilities that may pose a threat to water quality, and enforcing stormwater requirements. In order to implement these requirements, MS4 permits require the development of an inventory of facilities and prioritization protocol *and adequate staff training to ensure proper inspection and enforcement of requirements*."[253]

40 CFR section 122.26(d)(2)(iv)(D)(4) requires that Permittees have appropriate educational and training measures for construction site operators.[254] More specifically, 40 CFR section 122.26(d)(2)(iv)(D)(3) requires that Permittees have "procedures for identifying priorities for inspecting sites and enforcing control measures…". An important element of such procedures is training for the individuals tasked with implementing the program. Therefore, the municipal employees and contractors training requirement in the Order is necessary to meet these federal requirements, by ensuring that Permittees are trained in technical standards for BMPs and that they make these technical standards readily available to the development community as educational and training measures. The U.S. EPA MS4 Permit Improvement Guide provides draft permit provisions that closely resemble the requirements for municipal employees and contractor training in the Order, including training for staff as well as third-party inspectors and plan reviewers.[255]

B. Progressive Enforcement

Progressive enforcement is a series of defined and reproducible enforcement actions whereby consequences of non-compliance increase with each incremental enforcement step. Progressive enforcement includes procedures to coordinate enforcement between the Los Angeles Water Board and Permittees. As the Los Angeles Water Board is the

[252] *Id*., § 122.34(b)(6)(i).
[253] U.S. EPA. *MS4 Permit Improvement Guide* (2010), Chapter 7, p. 85 (emphasis added).
[254] *Id*., subd. (d)(2)(iv)(D)(4).
[255] U.S. EPA. *MS4 Permit Improvement Guide* (2010), Chapter 4, p. 46.

regulating agency for the NPDES program, it has the authority to step in when enforcement actions of a Permittee are unsuccessful in bringing dischargers into compliance. As such, progressive enforcement is an effective strategy to achieve timely compliance. Previous permits included requirements for Permittees to develop and implement a progressive enforcement strategy, which are carried over to the Order. The Order eliminates the provision in the 2010 Ventura County MS4 Permit that allows the Los Angeles Water Board and Permittees to form a stormwater task force. This provision was removed because the ability for coordinated enforcement between the Los Angeles Water Board and Permittees is adequately established through remaining provisions within Part VIII.B of the Order. Also note that the 2010 Ventura County MS4 Permit includes progressive enforcement requirements within the Industrial/Commercial Facilities MCM and Construction MCM. However, the Progressive Enforcement provisions under Part VIII.B of the Order follow the same structure of the 2012 Los Angeles County and 2014 City of Long Beach MS4 permits and are inclusive of the progressive enforcement requirements that were previously within the two abovementioned MCMs in the 2010 Ventura County MS4 Permit.

C. Modifications/Revisions

The Order requires each Permittee to modify its stormwater management programs, protocols, practices, and municipal codes to be consistent with the Order. This provision is necessary to ensure that each Permittee takes all the steps necessary to update the core and ancillary programs that are required to ensure compliance with the Order.

D. Public Information and Participation Program

1. Federal Requirements

The Los Angeles Water Board has incorporated the Public Information and Participation Program into the Regional MS4 Permit per the following federal requirements:

Clean Water Act section 402(p)(3)(B)(iii) requires that "[p]ermits for discharges from municipal storm sewers 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."

NPDES regulations at 40 CFR section 122.26(d)(2)(iv) require as part of a stormwater management program "a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate."

NPDES regulations at 40 CFR section 122.26(d)(2)(iv)(A)(6) provide that the proposed management program include "[a] description of a program to reduce to the maximum extent practicable, pollutants in discharges from MS4s associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-way's and at municipal facilities."

NPDES regulations at 40 CFR section 122.26(d)(2)(iv)(B)(6) provide that the proposed management program includes "[a] description of education activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials."

40 CFR section 122.42(c) requires the owner or operator of an MS4 to submit an annual report that includes in part "(1) The status of implementing the components of the storm water management program that are established as permit conditions; (2) Proposed changes to the storm water management programs that are established as permit condition. Such proposed changes shall be consistent with §122.26(d)(2)(iii) of this part…" and "(6) A summary describing the number and nature of enforcement actions, inspections, and public education programs; …"

2. General Provisions

Part VIII.D.1 of the Order requires continued implementation of public participation in the stormwater management program, consistent with 40 CFR section 122.26(d)(2)(iv). It is generally more cost-effective to have multiple Permittees coordinate using an existing program than have each individual Permittee develop its own local program. Therefore, Permittees are encouraged to participate in a County-wide public information and participation program (PIPP) or in one or more Watershed Group sponsored PIPPs supplemented with additional information specific to local needs. While the previous 2010 Ventura County MS4 Permit required coordination among Permittees, this Regional Permit covers numerous Permittees over a larger area, making it difficult to coordinate amongst all Permittees. As a result, the Los Angeles Water Board encourages but does not require forming partnerships and coordination among Permittees. This is consistent with by 40 CFR §§122.26(d)(2)(iv), which specifies intergovernmental coordination as part of the stormwater management program where necessary.

Previous 2012 Los Angeles County and 2010 City of Long Beach MS4 permits required the Public Information and Participation Program to include contact information and means for public reporting of clogged catch basin inlets, illicit discharges/dumping, faded or missing catch basin labels, and general stormwater and non-stormwater pollution prevention information. These requirements are redundant with requirements in the Illicit Discharge Detection and Elimination Program and are removed from the Public Information and Participation section.

3. Objectives

The objectives of the PIPP are to involve and engage a diversity of socioeconomic groups and ethnic communities by building an understanding of stormwater issues and strengthening support for programs and projects. These objectives are established in the permit to provide a compass for Permittees as they adapt their program to address new information, water quality priorities, and MS4 program priorities. Through broad community support, the program objective in Part VIII.D.2 of the Order would instill the methods for proper management and disposal of used oil and toxic materials such that pollution prevention becomes common knowledge in the community.

The Order also includes an objective to use effective strategies to educate and involve residents and population subgroups through culturally effective methods. To accomplish this objective, Permittees may rely on the existing framework of their program and build upon existing methods to reach cultural subgroups. For

example, existing materials may be translated to other languages or recurring events may be promoted through television and radio stations that cater to specific subgroups.

The objectives in the Regional MS4 Permit support the broader federal requirements discussed earlier in this Fact Sheet by encouraging behavior changes that reduce pollutants in stormwater and non-stormwater. The programs must reach the general population, but also must reach a portion of the population who might otherwise be overlooked. U.S. EPA support for this provision is evident in a similar provision in the U.S. EPA-issued permit for the Middle Rio Grande Watershed.[256] In addition, *U.S. EPA, Tailoring Outreach Programs to Minority and Disadvantaged Communities and Children Fact Sheet*[257] finds that, "[m]any residents of ethnically and culturally diverse communities don't speak English." English messages contained in public education outreach materials may not be effectively reaching a significant portion of some communities. In addition, some lower income communities may have less access to the internet and would be more reachable through TV, radio, and neighborhood newspapers than through webpages.[258]

4. Program Requirements

a. Community involvement in stormwater planning and program implementation and awareness of stormwater program needs (Part VIII.D.3.a of the Order).

An emerging challenge for municipal stormwater programs is to promote the public's understanding for the need for planning and funding of stormwater programs and projects. Stormwater programs are a key component of water quality protection and are a legal requirement. By educating and involving the public on stormwater planning needs, municipalities may gain public support for funding stormwater programs. Through stakeholder input, the Los Angeles Water Board recognizes that a lack of support in planning and funding are often obstacles to effective program implementation. This requirement is supported by the U.S. EPA Memorandum dated October 26, 2016 that identifies lack of funding as a limiting factor in implementing stormwater pollution programs. The memorandum further recommends long-term planning to secure adequate funding for infrastructure and stormwater controls. Public awareness of long-term planning and implementation is therefore a necessary step towards gaining support and funds for short-term and long-term program implementation. First step methods for involving the community may include town meetings, webinars, citizen advisory committees or focus groups. Once community support is strengthened, the Permittee may also develop and promote ballot funding measures for stormwater projects and thus meet several PIPP requirements and achieve program objectives.

[256] NPDES Permit No. NMR04A000 issued to Middle Rio Grande Watershed, effective December 22, 2014. p. 48.

[257] U.S. EPA. 2006. "Tailoring Outreach Programs to Minority and Disadvantaged Communities and Children." National Pollutant Discharge Elimination System (NPDES). May 24, 2006. As noted on the website https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#edu, U.S. EPA is currently updating this document.

[258] See Internet/Broadband Fact Sheet. Pew Research Center, Internet and Technology. The center displays data showing lower internet use among non-white ethnic groups and lower income groups. http://www.pewinternet.org/fact-sheet/internet-broadband/. Accessed on May 11, 2016.

For example, this has been done successfully in Los Angeles County with the passage of Measure W, in Culver City with the passage of Measure CW, in the City of Los Angeles with the passage of Proposition O, and in the City of Santa Monica with the passage of Measure V.

U.S. EPA's *MS4 Permit Improvement Guide*[259] suggests the inclusion of a requirement to establish a citizen's advisory group to participate in the development and implementation of the community's stormwater program, explaining that "[b]y listening to the public's concerns and coming up with solutions together, the permittee will gain the public's support and the community will become invested in the program." Furthermore, the U.S. EPA document *Evaluation of the Role of Public Outreach and Stakeholder Engagement in Stormwater Funding Decisions in New England: Lessons from Communities*[260] describes benefits of engaging stakeholders in stormwater planning and funding that include, among other benefits: (1) providing a forum to share concerns and knowledge and (2) providing "[a]n opportunity to find the balance between costs and services that fee payers can support."

In Los Angeles County, this has been done on a regional basis through OurWaterLA, a diverse coalition of community leaders and organizations from across Los Angeles County, which was formed to support outreach to all residents in Los Angeles County about the importance of clean, safe, affordable and reliable water to the region's communities. OurWaterLA works to make water issues accessible by developing informational materials, bringing new partners to the coalition, and hosting workshops and community events throughout Los Angeles County. The coalition strives to listen and help communities understand their power to make neighborhoods greener and healthier while enhancing the local economy and quality of life. OurWaterLA was a key supporter of the passage of Measure W by the voters, which established a dedicated revenue stream for stormwater projects to improve water quality and local water supply and provide other community benefits. Citizen oversight committees have also been established to support implementation of some of the funding programs identified above, including Measure V and Proposition O. Coalitions and committees like these can be formed by Permittees to facilitate effective public participation in local and regional stormwater management programs.

b. Informational and Educational Activities (Part VIII.D.3.b of the Order).

The informational and educational activities requirements in previous permits for Ventura County, City of Long Beach, and Los Angeles County implemented federal requirements in 40 CFR sections 122.26(d)(2)(iv)(A) and (B)(6). This permit maintains the requirements from the previous permits, but allows for additional flexibility in how the Permittees may implement them. The Los Angeles Water Board recognizes that this flexibility will allow Permittees to focus resources and efforts on targeted pollutants and behaviors that are most problematic to individual communities or where efforts will result in the

[259] U.S. EPA. 2010. *MS4 Permit Improvement Guide*. Apr. 2010. p. 22.

[260] U.S. EPA. 2013. Evaluation of the Role of Public Outreach and Stakeholder Engagement in Stormwater Funding Decisions in New England: Lessons from Communities. EPA-100-K-13-0004. Office of Policy. June 2013. p. 27.

greatest improvements. These provisions support the broader federal requirements discussed earlier in this Fact Sheet.

For Part VIII.D.3.b of the Order, the Permittee has the flexibility of selecting activities and topics based on water quality priorities. Additionally, the Permittee may choose various methods for disseminating educational materials on pollution prevention or may promote pollution mitigation through public reporting of illicit discharges. In this way, the Permittee is expected to adapt the program efforts and resources to focus public education in targeted areas. This flexibility notwithstanding, the requirements implement federal regulations at 40 CFR sections 122.26(d)(2)(iv)(A) and 122.26(d)(2)(iv)(B)(6). The U.S. EPA *MS4 Permit Improvement Guide* supports flexibility in PIPP programs through example fact sheet language:

> *The public education and outreach program must be tailored and targeted to specific water quality issues of concern in the relevant community. These community-wide and targeted issues must then guide the development of the comprehensive outreach program, including the creation of appropriate messages and educational materials. The permit includes a list of potential residential and commercial waste topics, but the permittee may also choose other issues that contribute significant pollutant loads to stormwater*.[261]

The U.S. EPA-issued permit for Boise Area MS4[262] allows flexibility in that Permittees decide the effective methods and topics for prescribed target audiences. Similarly, the U.S. EPA-issued MS4 permit for the Rio Grande Watershed[263] allows for Permittees to use a "tailored public education program using a mix of locally appropriate strategies, to target specific audiences and communities" and "[use] material or outreach programs directed toward targeted groups of commercial, industrial, and institutional entities likely to have significant storm water impacts."

Resources for outreach methods and pollution prevention practices associated with Part VIII.D.3.b of the Order are available through U.S. EPA's Non-point Source Toolbox available at https://cfpub.epa.gov/npstbx/.

5. Documentation, Tracking and Measurement of Effectiveness.

Part VIII.D.4 of the Order requires the Permittee to document and track selected activities and targets as well as report on the effectiveness of public information and participation activities. This enables the Los Angeles Water Board to ensure the program requirements are implemented. It also helps the Permittee to ascertain the most successful public participation efforts.

The previous 2010 Ventura County MS4 Permit required documentation of activities and strategies implemented and required effectiveness measurements on outreach to school children and the general public related to stormwater quality. The previous 2014 City of Long Beach and 2012 Los Angeles County MS4 permits

[261] U.S. EPA. 2010. *MS4 Permit Improvement Guide*. Apr. 2010. p. 20.

[262] NPDES permit (*IDS-027561)* issued to Ada County Highway District, Boise State University, City of Boise, City of Garden City. Drainage District #3, and the Idaho Transportation Department District #3. Effective February 1, 2013. pp. 30-32.

[263] NPDES Permit No. NMR04A000 issued to Middle Rio Grande Watershed, effective December 22, 2014. p. 32.

required documentation and effectiveness information to be reported in annual reports. The Regional MS4 Permit requires Permittees to document the selected activities, dates of activities, methods, targeted behavior, targeted pollutant, targeted audience, cultural outreach effort, and the metric chosen to measure effectiveness of the activity. This information must be made available upon request to the Los Angeles Water Board and reported in annual reports.[264]

The Regional Permit includes a new requirement for all Permittees to develop metrics and evaluate the success of the program, based on chosen metrics, in educating, raising awareness, and changing behaviors. U.S. EPA emphasizes permit conditions related to MCMs must be clear, specific, and measurable.[265] U.S. EPA-issued permits[266] include clear, specific, measurable requirements to document and track effectiveness of public information and outreach activities. Additionally, several permit language examples in the *Compendium of MS4 Permitting Approaches*[267] require Permittees to develop and/or use metrics to measure improved understanding of stormwater quality, support for the program, and pollutant management and disposal behaviors as defined by objectives in Part VIII.D.2 of the Order.

6. Annual Report Requirements.

Requirements to report PIPP activities in Attachment H (Annual Report Form) of the Order as well as effectiveness using metrics established in Part VIII.D.4 of the Order are based on federal requirements in 40 CFR 122.42(c)(1), (c)(2), and (c)(6) among others as identified in the Monitoring and Reporting Program (Attachment E). These reporting requirements ensure that Permittees evaluate the success of the program, in educating, raising awareness, and changing behaviors.

E. Industrial/Commercial Facilities Program

1. Background

Since the Nationwide Urban Runoff Program (NURP) study[268] in the early 1980s, it has been demonstrated that sites of industrial activity have the potential to contribute higher quantities of pollutants in stormwater runoff when compared with other land uses. Data from the NURP study were analyzed further in the U.S. Geological Survey (USGS) Urban Storm Water Data Base for 22 Metropolitan Areas Throughout the United States study.[269] The USGS report summarized additional monitoring data compiled during the mid-1980s, covering 717 storm events at 99 sites in 22 metropolitan areas, and documented problems associated with metals and sediment concentrations in urban stormwater runoff.

[264] 40 CFR § 122.42(c)(4) requires “A summary of data, including monitoring data, that is accumulated throughout the reporting year;” 40 CFR § 122.42(c)(6) requires “A summary describing the number and nature of enforcement actions, inspections, and public education programs;”
[265] Federal Register/ Vol. 79, No. 245/Monday, December 22, 2014/ Notices. P. 89320.
[266] For example, see footnote , p. 14 and footnote , p. 45.
[267] Compendium of MS4 Permitting Examples, Part 1: Six Minimum Control Measures. Office of Wastewater Management, Water Permits Division. November 2016. 810-U-16-001.
[268] Results of the Nationwide Urban Runoff Program, Volume 1—Final Report. U.S. EPA. 1983. Office of Water. Washington, D.C.
[269] U.S. Geological Survey Urban Storm Water Data Base for 22 Metropolitan Areas Throughout the United States. Driver, N.E., M.H. Mustard, R.B. Rhinesmith, and R.F. Middleburg. 1985. Report No. 85–337 USGS. Lakewood, CO.

2. Legal Authority

The Permittee is ultimately responsible for discharges from its MS4. The Phase I regulations require, in part, that the applicant: (i) develop adequate legal authority, (ii) perform a source identification, and (iii) develop a management program to reduce the discharge of pollutants. (40 CFR section 122.26(d)(2).)

The U.S. EPA *MS4 Permit Improvement Guide* states that, "Phase I MS4 regulations specify that several key elements be included in Phase I MS4 stormwater management programs [to control pollutants in stormwater discharges to the MS4 from industrial and commercial facilities]. These elements include: adequate legal authority to require compliance and inspect sites, inspection of priority industrial and commercial facilities, establishing control measure requirements for facilities that may pose a threat to water quality, and enforcing stormwater requirements. In order to implement these requirements, MS4 permits require the development of an inventory of facilities and prioritization protocol and adequate staff training to ensure proper inspection and enforcement of requirements."[270]

Federal regulations at 40 CFR section 122.26(d)(2)(ii) require MS4 operators to "[p]rovide an inventory, organized by watershed of the name and address, and a description (such as SIC codes) which best reflects the principal products or services provided by each facility which may discharge, to the municipal separate storm sewer, storm water associated with industrial activity."

Per 40 CFR section 122.26(d)(2)(iv)(C), with regards to industrial controls, the management plan shall include the following.

> "A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA),[271] and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system. The program shall:
>
> (1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.
>
> (2) Describe a monitoring program for storm water discharges associated with industrial facilities […]"

Per 40 CFR section 122.26(d)(2)(ii), as part of the Source Identification requirements, the municipality is required to "Provide an inventory, organized by watershed of the name and address, and a description (such as SIC codes) which best reflects the principal products or services provided by each facility which may discharge, to the municipal separate storm sewer, storm water associated with industrial activity."

In the preamble to the 1990 regulations, U.S. EPA clearly states the intended strategy for discharges of stormwater associated with industrial activity:

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[270] U.S. EPA. *MS4 Permit Improvement Guide* (2010), Chapter 7, p. 85 (emphasis added).

[271] See U.S. EPA's Toxic Release Inventory (TRI) Program webpage at: https://www.epa.gov/toxics-release-inventory-tri-program

> "…Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system."[272]

The U.S. EPA also notes in the preamble that "… municipalities will be required to meet the terms of their permits related to industrial dischargers."[273]

Similarly, in the U.S. EPA's Guidance Manual (Chapter 3.0), U.S. EPA specifies that MS4 applicants must demonstrate that they possess adequate legal authority to:

a. Control construction site and other industrial discharges to MS4s;

i. Prohibit illicit discharges and control spills and dumping;

ii. Carry out inspection, surveillance, and monitoring procedures.

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

In the same Guidance Manual (Chapter 6.3.3), U.S. EPA states that the Permittee is ultimately responsible for discharges from their MS4. Consequently, the MS4 applicant must describe how the municipality will help the U.S. EPA and States authorized to implement the federal NPDES permit program to:

a. Identify priority industries discharging to their systems;

i. Review and evaluate storm water pollution prevention plans (SWPPPs) and other procedures that industrial facilities must develop under general or individual permits;

ii. Establish and implement BMPs to reduce pollutants from these industrial facilities (or require industry to implement them); and

iii. Inspect and monitor industrial facilities discharging storm water to the municipal systems to ensure these facilities are in compliance with their NPDES storm water permit, if required.

Therefore, Permittees are required to implement programs to control stormwater discharges associated with industrial activities and other commercial facilities identified as significant contributors of pollutants through the implementation of a mandatory baseline minimum set of source control BMPs; performance of an inspection program to verify the adequacy of BMP implementation in the field and compliance with municipal ordinances; and assist the Los Angeles Water Board in ensuring that industrial activities subject to regulations are covered by the State Water Board's industrial stormwater general permit. Los Angeles Water Board will also assist the municipalities in case of instances of egregious non-compliance with the municipal ordinances and state and federal laws and regulations.

[272] Federal Register, Vol. 55, No. 222, November 16, 1990, pp. 47990-48091.
[273] Ibid.

The provisions contained in the Order pertaining to the inspection and facility control program requirements for industrial and commercial facilities are also based on the requirements found in the previous permits. Those requirements, among others, were the subject of litigation between several permittees and the Los Angeles Water Board on the 2001 Los Angeles County MS4 permit (Order No. 01-182). In that case, the Los Angeles County Superior Court upheld the inspection and facility control program requirements for industrial/commercial facilities and construction sites. The Court found that requiring permittees to inspect commercial and industrial facilities and construction sites is authorized under the Clean Water Act. The Court further determined that "[t]he Permit contains reasonable inspection requirements for these types of facilities. [Citation.] Additionally, permittees have the fee authority to impose a fee on the facility operator or owner to recover the cost of these inspections. As part of the scope of inspection, the Permit requires each permittee to confirm that operators are effectively implementing Best Management Practices (BMPs) in compliance with County and municipal ordinances, Regional Board Resolution 90-08 and the Stormwater Quality Management Plans (SQMPs). [Citation.] Addressing pollution after it has entered the storm sewer system is not working to meet legislative goals. More work is required at the source of pollution, and that is partially the basis on which this Court finds that the Permit's inspection requirements are reasonable, and not onerous and burdensome." (*In re L.A. Cnty. Mun. Storm Water Permit Litig.* (L.A. Super. Ct., No. BS 080548, Mar. 24, 2005), Statement of Decision from Phase II Trial on Petitions for Writ of Mandate, p. 17.)

There is currently pending litigation concerning the permittees' fee authority to pay for inspections of industrial, commercial, and construction sites. In 2003, several Los Angeles County MS4 permittees filed test claims with the Commission on State Mandates alleging the requirements to conduct inspections at industrial facilities, commercial facilities, and construction sites in the 2001 permit (Order No. 01-182) were unfunded state mandates subject to reimbursement by the state pursuant to article XIII B, section 6 of the California Constitution. In 2009, the Commission determined that the provisions imposed state mandates as the provisions were not specifically found in federal law, but found that the requirements were not reimbursable because the permittees could charge fees to fund the inspection requirements. Both the Water Boards and the permittees appealed various aspects of the Commission's decision. That litigation remains pending on several issues, including the permittees' challenge regarding their fee authority issue. To date, no court has ruled specifically on this issue. (*State of California Department of Finance, State Water Resources Control Board, and California Regional Water Quality Control Board, Los Angeles Region v. Commission on State Mandates; County of Los Angeles, et al., Real Parties in Interest* (Super. Ct. Los Angeles County, Case No. BS130730, B292446, app. pending).

3. Industrial/Commercial Facilities Program Implementation

The purpose of the Industrial/Commercial Facilities Pollutant Control Program is to ensure the implementation of adequate controls at all industrial and commercial sites in order to assist Permittees in achieving compliance with the water quality limitations for discharges from their MS4s. The applicable provisions in the Order are carried over from the prior MS4 permits. However, they have been slightly modified to better define the requirements. These provisions clarify the inventory requirements for all facilities that are critical sources of stormwater pollution, as

well as requirements for industrial facilities (i.e. facilities listed in Part VIII.E.2.a.i) of the Order and commercial facilities (i.e. facilities listed in Parts VIII.E.2.a.ii through iv).

Part VIII.E.2.b of the Order lists the minimum necessary information required to develop and maintain an effective list of all facilities that are critical sources of stormwater pollution.

For ease of compliance and more clear guidelines, the requirements for industrial facilities (i.e., facilities that require enrollment in the Industrial General Permit) have been separated from the other facilities. Part VIII.E.3 of the Order sets provisions specific to commercial facilities listed in Parts VIII.E.2.a.ii through iv of the Order and Part VIII.E.4 of the Order sets forth provisions specific to industrial facilities. While the requirements for all facilities include a business assistance program and facility inspections, the details of each component are tailored to the facility type. The commercial facilities' outreach and business assistance programs are tailored to raise awareness among commercial facility owners of their BMP requirements. The industrial facilities' business assistance program is tailored to raise awareness among industrial facility owners of the obligation to obtain and comply with permit requirements for their stormwater discharges. The inspection component for both commercial and industrial facilities is set forth to ensure effective implementation of BMPs to manage stormwater discharge from the facility. The Order also requires Permittees, during facility inspections, to confirm that industrial facilities are enrolled in the Industrial General Permit and have a current waste discharge identification (WDID) number. Inspection frequencies have been modified to start with more frequent inspections while giving the Permittee the opportunity to reduce the frequency for facilities that demonstrate compliance with the BMP requirements. This will give the Permittees the freedom to better utilize their resources by allocating them to areas of higher concern. Additionally, inspection frequencies for commercial facilities have been modified to require inspections of a facility every two years, ensuring that the first mandatory compliance inspection occurs no later than 2 years after the effective date of the Order. A minimum interval of 6 months between the compliance inspections is required. The scope of the inspections was clarified by listing possible BMPs that should be implemented at the facility to ensure that exposure of pollutants to stormwater is managed. The BMP categories are based on BMPs identified in the 2003 California Stormwater BMP Handbook, Industrial and Commercial as well as BMPs identified in Los Angeles Water Board Resolution No. 98-08.

Additionally, the provision for outreach is necessary to meet federal standards and federal requirements regarding stormwater management programs at 40 CFR section 122.26(d)(2)(iv), including subsections (A)(6) and (B)(6), which require educational outreach regarding pollutants in discharges of pesticides, herbicides, fertilizers, oil, and toxic materials.

Part VIII.E.6 of the Order sets requirements for a progressive enforcement procedure that outlines the minimum steps needed to enforce their municipalities' stormwater requirements. In recognition of some of the Permittees' concerns regarding the resource intensive efforts needed to elevate enforcement actions, a mechanism was provided through which Permittees can refer cases to the Los Angeles Water Board.

Due to the level of technicality of industrial and commercial facilities inspections, Part VIII.A.3 of the Order sets requirements for staff training. These requirements are set to ensure pertinent staff possess the appropriate knowledge of the program.

F. Planning and Land Development Program

1. Legal Authority

The permit application requirements described in 40 CFR section 122.26(d) have formed the foundation for MS4 permits and remain applicable as elements in a stormwater management program. 40 CFR section 122.26(d)(2)(iv) requires, in part, that the large and medium MS4 applicant develop a management program. Specifically, with regards to planning and land development and post-constructions controls, the management program shall include the following:

> *"(A) A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls. At a minimum, the description shall include:*
>
> > *(1) A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers;*
> >
> > *(2) A description of planning procedures including a comprehensive master plan to develop, implement and enforce controls to reduce the discharge of pollutants from municipal separate storm sewers which receive discharges from areas of new development and significant redevelopment. Such plan shall address controls to reduce pollutants in discharges from municipal separate storm sewers after construction is completed.*
> >
> > *(3) A description of practices for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems…*
> >
> > *(4) A description of procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible."*

2. Background

Land development and urbanization have been linked to the impairment of aquatic life beneficial uses in numerous studies. Poorly planned and constructed new development and re-development projects have the potential to impact the hydrology of the watershed and the water quality of the surface waters. Development without appropriate planning and controls often results in increased soil compaction, changes in vegetation and increased impervious surfaces. These conditions may lead to a reduction in groundwater recharge and changes in the flow regime of the surface water drainages. Historically, urban development has resulted in increased peak stream flows and flow duration, reduced base flows, and increased water temperatures. Pollutant loading in stormwater runoff often

increases due to post-construction activities and because the stormwater runoff is directly connected to the storm drain system or to the surface water body, without the benefit of filtration through soil and vegetation.

The Planning and Land Development Program provisions in the 2012 Los Angeles County, 2014 City of Long Beach, and 2010 Ventura County MS4 Permits require that Permittees impose requirements on development projects (including significant redevelopment projects) within their jurisdiction to address stormwater pollution and hydromodification impacts. These provisions establish:

- Water quality, flow reduction, and resources management criteria for applicable development projects within the Permittee's jurisdiction.
- Hydromodification mitigation criteria for applicable development projects within the Permittee's jurisdiction.
- Implementation requirements.

Except for some provisions that were updated and/or refined, the Order generally carries over the Planning and Land Development provisions included in the 2012 Los Angeles County, 2014 City of Long Beach, and 2010 Ventura County MS4 Permits.

3. Implementation

a. Priority Development Projects

Part VIII.F.1 of the Order establishes the term "Priority Development Projects" for new development and redevelopment projects subject to water quality, flow reduction, and resources management criteria. Although the term Priority Development Project was not used in the 2012 Los Angeles County, 2014 City of Long Beach, and 2010 Ventura County MS4 Permits, this change does not constitute a new requirement. The categories of development projects designated as Priority Development Projects are generally the same categories of new development and redevelopment projects that were subject to water quality, flow reduction, and resources management criteria in the previous permits. Part VIII.F.1.a.iv of the Order establishes that new development and redevelopment projects that create and/or replace 2,500 square feet or more of impervious area; discharge stormwater that is likely to impact a sensitive biological species or habitat; and are located in or directly to or are discharging directly to a "Sensitive Ecological Area" in Los Angeles County or an "Environmentally Sensitive Area" in Ventura County are Priority Development Projects. This is consistent with the 2012 Los Angeles County, 2014 City of Long Beach, and 2010 Ventura County MS4 Permits.

Part VIII.F.1.c of the Order includes exemptions from Priority Development Project Structural BMP Performance Requirements through implementation of an approved Local Ordinance Equivalence or an approved Regional Stormwater Mitigation Program. These exemptions were included in the 2012 Los Angeles County MS4 Permit and 2014 City of Long Beach MS4 Permit.

i. Hydromodification

Part VIII.F.2.a of the Order establishes hydromodification management requirements for Priority Development Projects within natural drainage systems for Los Angeles County Permittees and all development projects greater than 50 acres for Ventura County Permittees. This is the same

as the applicability requirements in the 2012 Los Angeles County, 2014 City of Long Beach, and 2010 Ventura County MS4 Permits. Under the 2012 Los Angeles County MS4 Permit, hydromodification requirements applied to all New Development and Redevelopment projects located in natural drainage systems. Under the 2010 Ventura County MS4 Permit, hydromodification requirements applied to all applicable New Development and Redevelopment projects identified in subpart 4.E.II of that permit (i.e., projects that would be referred to as Priority Development Projects under this Order), however hydromodification-specific controls are only required for projects disturbing lands areas of fifty acres of greater.

The hydromodification management control criteria outlined in Part VIII.F.2.c of the Order carry over the criteria included in the 2010 Ventura County MS4 Permit, 2012 Los Angeles County MS4 Permit, and 2014 City of Long Beach MS4 Permit.

ii. Implementation Requirements

Part VIII.F.3 of the Order establishes implementation requirements related to project coordination; maintenance agreements and transfers; and tracking, inspection, and enforcement of post-construction BMPs. These requirements are directly carried over from those included in the 2010 Ventura County MS4 Permit, 2012 Los Angeles County MS4 Permit, and 2014 City of Long Beach MS4 Permit.

b. Priority Development Project Structural BMP Performance Requirements

Part VIII.F.4 of the Order establishes requirements for Priority Development Projects for Permittees. Under these requirements, Permittees must require Priority Development Projects to retain a Stormwater Quality Design Volume (SWQDV). If retention of the SWQDV is infeasible or if there is an applicable groundwater replenishment opportunity, then Permittees may allow Priority Development Projects to use alternative compliance measures including: onsite biofiltration or onsite flow-based BMPs in conjunction with offsite infiltration projects, groundwater replenishment projects, or offsite retrofit projects. These requirements are generally consistent with the corresponding requirements in the 2012 Los Angeles County, 2010 Ventura County, and 2014 City of Long Beach MS4 Permits.

Part VIII.F.4.c.i of the Order provides that on-site biofiltration may be used as an alternative compliance measure. Unlike the 2012 Los Angeles County, 2010 Ventura County, and 2014 City of Long Beach MS4 Permits, the Order does not directly include design specifications for biofiltration systems but instead references the design specifications in the County of Los Angeles Department of Public Works' Low Impact Development Standards Manual and 2011 Ventura County Technical Guidance Manual. These specifications are generally consistent with the previous design specifications in Attachment H of the 2012 Los Angeles County MS4 Permit and 2011 Ventura County Technical Guidance Manual.

Part VIII.F.4.c.ii of the Order provides that on-site flow-based BMPs may be used as an alternative compliance measure for Permittees in situations where

on-site biofiltration is not technically feasible. This option was not included in the 2012 Los Angeles County, 2010 Ventura County, and 2014 City of Long Beach MS4 Permits. This alternative compliance measure option is included in the Order to give an on-site treatment option for projects in areas where on-site biofiltration is technically infeasible. The requirements are similar to the mitigation criteria in Part VIII.F.4.d of the Order, however the BMP must be certified for "Enhanced Treatment" under the Washington State Department of Ecology's TAPE Program; or an appropriate future BMP certification program developed by the State of California.

Part VIII.F.4.d of the Order establishes water quality mitigation criteria for projects in cases where the priority development project is utilizing offsite mitigation or an offsite ground water replenishment project to comply with its structural BMP performance requirements. This ensures that there is treatment of stormwater runoff from the project site. The Order updates the mitigation requirements included in the 2012 Los Angeles County, 2010 Ventura County, and 2014 City of Long Beach MS4 Permits.

G. Construction Program

1. Background

Soil disturbing activities during construction and demolition exacerbate sediment losses. Sediment is a primary pollutant impacting beneficial uses of watercourses. Sediment also transports other pollutants such as nutrients, metals, and oils and greases. Sediments, and other construction activity pollutants must be properly controlled to reduce or eliminate adverse impacts.

Construction activities addressed by the Construction Program in the Order include the following:

- Any construction or demolition activity, including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity.
- Construction activity related to residential, commercial, or industrial development on lands currently used for agriculture including, but not limited to, the construction of buildings related to agriculture that are considered industrial pursuant to U.S. EPA regulations, such as dairy barns or food processing facilities.
- Construction activity associated with linear underground/overhead project (LUPs) including, but not limited to, those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, pipelines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities) and include, but are not limited to, underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access road and pole/tower pad and cable/wire pull station, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, pipeline installations, welding, concrete and/or pavement repair or replacement, and stockpile/borrow locations.
- Construction activities associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities.

- Activities resulting in storm water discharges from dredge spoil placement that occur outside of U.S. Army Corps of Engineers jurisdiction[274] (upland sites) and that disturb one or more acres of land surface from construction activity. Construction projects that intend to disturb one or more acres of land within the jurisdictional boundaries of a CWA section 404 permit should contact the appropriate Regional Water Board to determine whether this permit applies to the project.

2. Legal Authority

With respect to construction site stormwater runoff control, federal regulations set forth requirements that include implementation of BMPs, site inspection, enforcement, and educational and training measures for construction site operators.

40 CFR section 126.26(d)(2)(iv)(D) requires "A description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system…"

Per 40 CFR section 126.26(d)(2)(iv)(D)(2), the program must include "A description of requirements for nonstructural and structural best management practices."

Per 40 CFR section 126.26(d)(2)(iv)(D)(3), the program must include "A description of procedures for identifying priorities for inspecting sites and enforcing control measures…"

Per 40 CFR section 126.26(d)(2)(iv)(D)(4), the program must include "A description of appropriate educational and training measures for construction site operators."

40 CFR section 122.34(b)(4) states that with respect to construction site stormwater runoff control for small MS4s, which is analogous to that for large MS4s:

> "(i) [the permittee] must develop, implement, and enforce a program to reduce pollutants in any storm water runoff to your small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre must be included in your program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. If the NPDES permitting authority waives requirements for storm water discharges associated with small construction activity in accordance with § 122.26(b)(15)(i), you are not required to develop, implement, and/or enforce a program to reduce pollutant discharges from such sites. (ii) Your program must include the development and implementation of, at a minimum: (A) An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State, Tribal, or local law; (B) Requirements for construction site operators to implement appropriate erosion and sediment control best management practices; (C) Requirements for construction site operators to

[274] A construction site that includes a dredge and/or fill discharge to any water of the United States (e.g., wetland, channel, pond, or marine water) requires a permit from the U.S. Army Corps of Engineers pursuant to CWA section 404 and a Water Quality Certification from the Regional Water Board or State Water Board pursuant to CWA section 401.

> control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality; (D) Procedures for site plan review which incorporate consideration of potential water quality impacts; (E) Procedures for receipt and consideration of information submitted by the public, and (F) Procedures for site inspection and enforcement of control measures."

The inspection requirements for construction sites contained in the Order are also based on the requirements found in the previous permits. As previously noted, the inspection requirements contained in the 2001 Los Angeles County MS4 permit (Order No. 01-182) for construction sites were the subject of litigation between several permittees and the Los Angeles Water Board. As provided in more detail above, the Los Angeles County Superior Court upheld the inspection requirements for industrial/commercial facilities and construction sites in Order No. 01-182, finding that the "[t]he Permit contains reasonable inspection requirements for these types of facilities" and also that permittees have the authority to impose a fee on the facility operator or owner to recover the cost of these inspections. (*In re L.A. Cnty. Mun. Storm Water Permit Litig.* (L.A. Super. Ct., No. BS 080548, Mar. 24, 2005), Statement of Decision from Phase II Trial on Petitions for Writ of Mandate, p. 17.) As previously noted above, there remains pending litigation on test claims filed by several Los Angeles County MS4 permittees concerning the permittees' fee authority to pay for inspections of industrial, commercial, and construction sites. The matter is currently at the Court of Appeal. To date, however, no court has ruled specifically on the fee authority issue. (*State of California Department of Finance, State Water Resources Control Board, and California Regional Water Quality Control Board, Los Angeles Region v. Commission on State Mandates; County of Los Angeles, et al., Real Parties in Interest* (Super. Ct. Los Angeles County, Case No. BS130730, B292446, app. pending).

3. Construction Program Implementation

The purpose of the Construction Program is to ensure the implementation of adequate controls at all construction sites in order to assist Permittees in achieving compliance with the receiving water limitation provisions and WQBELs applicable to discharges from their MS4s. The applicable provisions in the Order are carried over from existing MS4 Permits. However, they have been slightly modified to better define the requirements.

For ease of compliance and more clear guidelines, the requirements for construction sites that disturb one acre or greater of land (or construction sites less than one acre that are part of a common plan of development totaling one acre or greater) have been separated from construction sites that disturb less than one acre and are not part of a common plan of development. Part VIII.G.4 of the Order sets provisions specific to sites that disturb less than one acre of land while Part VIII.G.5 of the Order sets provisions specific to sites that disturb one acre or greater of land or sites less than one acre that are part of a common plan of development totaling one acre or greater.

Part VIII.G.4.a of the Order states that Permittees shall require the implementation of effective BMPs at construction sites disturbing less than one acre. To better assist Permittees, this part includes a list of applicable BMPs. To ensure effective implementation of these BMPs, Part VIII.G.4.b of the Order requires Permittees to inspect these sites.

Part VIII.G.5.a.i of the Order states that Permittees shall verify enrollment in the Construction General Permit prior to issuing a grading or building permit. Also, Permittees shall require operators of these sites to prepare and submit a post-construction plan for the Permittee's review and approval. These post-construction requirements are based on some of the provisions listed in Part VIII.F of the Order. These provisions are not listed in the Construction General Permit.

Part VIII.G.5.b of the Order lists the minimum necessary information required to develop and maintain an effective list of all construction sites one acre or greater.

Part VIII.G.5.c of the Order requires inspection of these sites to verify enrollment in the Construction General Permit, implementation of appropriate BMPs, or implementation of proper post-construction BMPs. The requirement for Permittees to develop standard operation procedures for their inspection procedures has been removed since inspection requirements are streamlined as part of the inspection requirements of the Order. Similarly, the requirement for Permittees to require an Erosion and Sediment Control Plan (ESCP) has been removed since an ESCP include the elements of a Storm Water Pollution Prevention Plan (SWPPP). Therefore, these requirements shall be satisfied via SWPPPs.

Part VIII.G.6 of the Order requires that Permittees implement their Progressive Enforcement Policy set forth in Part VIII.B as it pertains to ensuring that construction site operators come into compliance with all stormwater requirements.

Due to the technical nature of construction activities and BMP implementation, Part VIII.A.3 of the Order sets requirements for staff training. These requirements are set to ensure pertinent staff possess the appropriate knowledge of the program.

H. Public Agency Activities Program

1. Federal Requirements

The Los Angeles Water Board has incorporated the Public Agency Activities Program into the Order per the following federal requirements:

Clean Water Act section 402(p)(3)(B)(ii) and (iii) require that "[p]ermits for discharges from municipal storm sewers … shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and 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."

40 CFR section 122.26(d)(2)(iv)(A) requires that the stormwater management program is based on, among other items, "[a] description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls." This section goes on to identify component areas to address structural and source control measures. The components related to the Public Agency Activities Program include 40 CFR sections 122.26(d)(2)(iv)(A)(1), (3), (4), and (6), and are described below.

40 CFR section 122.26(d)(2)(iv)(A)(1) states that the stormwater management program must include "[a] description of maintenance activities and a

maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers;"

40 CFR section 122.26(d)(2)(iv)(A)(3) states that the stormwater management program must include "[a] description of practices for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of deicing activities;"

40 CFR section 122.26(d)(2)(iv)(A)(4) states that the stormwater management program must include "[a] description of procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible;" and

40 CFR section 122.26(d)(2)(iv)(A)(6) states that the stormwater management program must include "[a] description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities."

40 CFR section 122.41(n) describes conditions under which an upset of treatment may constitute an affirmative defense to an action brought for noncompliance. At 40 CFR section 122.41(n)(1) "[u]pset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation." The regulation further provides for conditions of affirmative defense and requirements to demonstrate an upset at 40 CFR sections 122.41(n)(2) and (3): Within the Regional MS4 Permit, the provisions for Emergency Procedures in Part VIII.H.10. of the Order allow for an affirmative defense subject to the conditions of 40 CFR 122.41(n)(1), (2), and (3).

40 CFR section 122.42(c) requires the owner or operator of an MS4 to submit an annual report that includes in part "(1) The status of implementing the components of the storm water management program that are established as permit conditions; (2) Proposed changes to the storm water management programs that are established as permit condition. Such proposed changes shall be consistent with §122.26(d)(2)(iii) of this part; (3) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under §122.26(d)(2)(iv) and (d)(2)(v) of this part; (4) A summary of data, including monitoring data, that is accumulated throughout the reporting year…" and "(6) A summary describing the number and nature of enforcement actions, inspections, and public education programs…"

2. General Provisions

Permittees previously covered under the 2012 Los Angeles County MS4 Permit, the 2014 City of Long Beach MS4 Permit, and the 2010 Ventura County MS4 Permit must continue existing programs while updating those programs, as necessary, to comply with the requirements of the Order. The Order consolidates requirements among the three previous permits, updates requirements to reflect completed program elements, and provides additional flexibility for BMP implementation. The most notable changes from previous permits are discussed below.

3. Public Agency Facility and Activity Management

The requirements for BMP implementation address federal requirements in 40 CFR sections 122.26(d)(2)(iv)(A)(1), (3), and (6). In addition, 40 CFR section 122.44(k) authorizes BMP requirements in permits for stormwater subject to Clean Water Act section 402(p). The BMP requirements in this section are similar to those in other permits, including the U.S. EPA-issued permit for Washington, D.C., which requires proper operation and maintenance, inspections, and proper disposal of residual water from treatment control BMPs.[275] Several examples in U.S. EPA's *Compendium of MS4 Permitting Approaches* require BMP implementation for municipal activities, often through development of a SWPPP.[276]

Part VIII.H.3 of the Order requires each Permittee implement BMPs (identified in the inventory in Part VIII.H.2 of the Order), which may be structural and/or nonstructural. For implemented BMPs, the Permittee must inspect, maintain, properly operate, and properly dispose of any residual water produced by a treatment control BMP.[277] Municipal operations are often performed by contractors; therefore, the Order requires contractual requirements to ensure BMPs are properly implemented.

The previous 2010 Ventura County MS4 Permit prescribed specific BMPs, referenced to the *Caltrans Storm Water Quality Handbook Maintenance Staff Guide* or as approved by the Executive Officer.[278] The Order allows the Permittee to determine appropriate BMPs corresponding to activities. In doing so, Permittees have flexibility to incorporate advanced techniques beyond those in the references. Nonetheless, the Los Angeles Water Board encourages Permittees to consult *Caltrans Storm Water Quality Handbook Maintenance Staff Guide* as guidance for selecting BMPs.

The Order removes requirements specific to flood management projects in the previous 2012 Los Angeles County and 2014 City of Long Beach MS4 permits because MCMs related to flood management projects and flood control procedures

[275] NPDES Permit No. DC0000221 issued to the Government of the District of Columbia, as modified November 9, 2012, pp. 16-17).

[276] Compendium of MS4 Permitting Examples, Part 1: Six Minimum Control Measures. Office of Wastewater Management, Water Permits Division. November 2016. 810-U-16-001. pp. 38-45.

[277] See Attachment A (Definitions). Residual Water means "In the context of the Order, water remaining in a structural BMP subsequent to the drawdown or drainage period. The residual water typically contains high concentration(s) of pollutants." Treatment Control BMP means "Any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media absorption or any other physical, biological, or chemical process."

[278] Appendix B of the Caltrans Storm Water Quality Handbook Maintenance Staff Guide, May 2003, and its addenda.

are now included in the inventory required by revised Part VIII.H.2 of the Order and, as such, the Permittee is required to assign appropriate BMPs, considering impacts of flood management projects on the water quality of the receiving water bodies. Flood control management is largely outside the scope of the MS4 permit; therefore, additional BMP requirements are not retained from previous Orders.

The Order removes numeric limitations for residual water produced by treatment control BMPs that were included in previous permits for Los Angeles County, City of Long Beach, and Ventura County. The Order includes treatment control BMPs in the requirements for Public Agency Facility and Activity Management. The numeric limitations are unnecessary as there is no longer an option in the Order to discharge residual water from treatment BMPs to the MS4. Their removal streamlines the permit requirements and improves clarity.

4. Vehicle and Equipment Washing; Landscape, Park, and Recreational Facilities Management; Storm Drain Operation and Maintenance; Road Reconstruction, Streets and Road Pollutant Management, and Parking Facilities.

The specific BMPs in Parts VIII.H.4 through 9 of the Order are based on section 402(p)(3)(B) of the CWA, which mandates that a permit for discharges from MS4s must effectively prohibit the discharge of non-stormwater to the MS4; require controls to reduce pollutants in discharges from the MS4 to the maximum extent practicable (MEP) including BMPs control techniques, and system, design and engineering methods; and such other provisions as the State deems appropriate for the control of pollutants. The specific BMPs for Parts VIII.H.4 through 9 of the Order are commonly accepted practices that the Los Angeles Water Board considers necessary to control pollutants discharged to the MS4 to the maximum extent practicable. Vehicle wash water is a prohibited non-stormwater discharge; thus, requirements in Part VIII.H.4 of the Order are also necessary to comply with the prohibition. U.S. EPA included BMP requirements similar to those in Part VIII.H.5 of the Order (Landscape, Park, and Recreational Facilities Management) in MS4 permits for Washington, D.C.,[279] and Boise Area,[280] and Middle Rio Grande Watershed.[281] Similarly, U.S. EPA provides example requirements to label catch basins in the MS4 Improvement Guide. Street sweeping reduces debris and pollutants that may become entrained in stormwater and urban runoff. Additionally, street sweeping may reduce clogging of catch basins and extend the life of infiltration BMPs.[282]

The Permittee must implement specific BMPs for vehicle and equipment washing; landscape, park, and recreational facilities management; storm drain operation and maintenance; catch basin cleaning; road reconstruction; streets and road pollutant

[279] NPDES permit (DC0000221) issued to Government of the District of Columbia, with final signed Modification #1, effective November 9, 2012. pp. 16-17.

[280] NPDES permit (IDS-027561) issued to Ada County Highway District, Boise State University, City of Boise, City of Garden City. Drainage District #3, and the Idaho Transportation Department District #3. Effective February 1, 2013. p. 25.

[281] NPDES Permit No. NMR04A000 issued to Middle Rio Grande Watershed, effective December 22, 2014. p. 29.

[282] Urban Drainage and Flood Control District, 2010. Urban Storm Drainage Criteria Manual, Volume 3. Chapter 5, Fact Sheet S-11, available at https://udfcd.org/wp-content/uploads/uploads/vol3%20criteria%20manual/01_USDCM%20Volume%203.pdf. Last accessed June 20, 2018.

management; and parking facilities maintenance. The Order's requirements in these areas have been updated from the previous permits to be consistent with the Trash Amendments[283] and to remove catch basin prioritization requirements already completed by the Permittees.

This Part of the Order does not require Permittees to quantify trash removed from catch basins, as was required in the 2010 Ventura County MS4 Permit, rather, the Order aligns trash requirements with the Statewide Trash Amendments. Trash requirements are included in Part III.B of the Order.

Previous permits for Los Angeles County, City of Long Beach, and Ventura County permits required that the public agency program address infiltration to sanitary sewers and related preventative maintenance. For the Order, these requirements are addressed as illicit connections and discharges in Part VIII.I of the Order to more closely align with federal requirements. Provisions for controls on infiltration to sanitary sewers and related preventative maintenance address federal requirements in 40 CFR section 122.26(d)(2)(iv)(B)(7) as a component of the IDDE program.

Parking areas were not specifically identified for additional BMPs in the previous Ventura County permit. The remaining BMP requirements under these Parts are retained from previous permits for Los Angeles County, City of Long Beach, and Ventura County, with a specification for parking areas with a sediment/gravel base. To provide a phased approach for parking area requirements to Ventura County Permittees, an applicability threshold for parking areas greater than 1 acre or any parking lot used for heavy vehicle storage was added.

5. Emergency Procedures

The provisions in Part VIII.H.10 of the Order are consistent with federal regulations in 40 CFR section 122.41(n) as described earlier in this Fact Sheet. Permittees are required to conduct repairs of essential public service systems and infrastructure in emergency situations. In these situations, a Permittee is allowed a self-waiver from implementing facility and activity specific BMPs identified in Part VIII.H.3 of the Order, as well as BMPs described in Part VIII.H.4 through 9 of the Order. An emergency includes only those situations included as conditions necessary for demonstration of an upset at 40 CFR section 122.41(n). For each claimed emergency, the Permittee shall submit to the Los Angeles Water Board a statement of the occurrence of the emergency, an explanation of the circumstances, and the measures that were implemented to reduce the threat to water quality, no later than required by applicable federal NPDES regulations.

6. Other Changes to Program Requirements

The Order discontinues cross references to other regulatory requirements that were provided in previous permits for Los Angeles County and the City of Long Beach. This change reduces unnecessary language, as it is naturally implied that Permittees are not exempt from other regulatory requirements within the Order (e.g., Development Construction, Planning and Land Development requirements)

[283] Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan). Final Resolution No. 2015-0019. The OAL approved the Trash Amendments on December 2, 2015. The U.S. EPA approved the Trash Amendments on January 12, 2016.

or general permit requirements (e.g., *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* [NPDES No. CAS000002] and/or the *General Permit for Storm Water Discharges Associated with Industrial Activities* [NPDES No. CAS000001]), if applicable).

The Order does not require the Public Agency Program to include an Inventory of Existing Development for Retrofitting Opportunities, as was required in the 2012 Los Angeles County and the 2014 City of Long Beach MS4 permits. The previous permit provisions addressed federal requirements in 40 CFR section 122.26(d)(2)(iv)(A)(4). This requirement has been completed by Los Angeles County and City of Long Beach Permittees and a similar requirement is included under the Planning and Land Development Program in the Order. The previous 2010 Ventura County MS4 Permit also contained a similar requirement related to identifying eligible public and private off-site mitigation project sites in the Planning and Land Development program.[284]

7. Documentation and Tracking

Federal regulations in 40 CFR section 122.44(k)(4) require the Permitting Authority to establish requirements for BMPs where "The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purpose and intent of the CWA." The regulation contains a footnoted reference to the *Guidance Manual for Developing Best Management Practices (BMPs)*,[285] for additional technical information on BMPs and the elements of BMPs. As described in the Manual, recordkeeping involves collecting background information that is pertinent to the BMP plan or the BMP itself. California Water Code section 13383 authorizes the Los Angeles Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Order requires documentation and tracking as a form of recordkeeping that is integral to BMP implementation. Without documentation and tracking, the Permittee cannot effectively ensure proper BMP implementation that is protective of water quality. U.S. EPA-issued MS4 permits such as the one issued to the District of Colombia,[286] routinely require documentation and tracking interconnected with clear, specific, measurable requirements.

The Permittee must document and track the Public Agency Activities Program through the inventory developed in Part VIII.H.2 of the Order. This inventory is a framework for setting up periodic facility assessments and for developing, where necessary, facility stormwater pollution prevention plans. Documenting and tracking of BMPs through the inventory help to ensure that public agency facilities are monitored and receiving water quality is protected.

Part VIII.H.2 of the Order addresses, in part, federal requirements in 40 CFR section 122.26(d)(2)(iv)(A)(1), (3), and (6). A public agency oversees numerous facilities and performs many activities and must therefore identify activities that may

[284] Waste Discharge Requirements for Storm Water (Wet Weather) and Non-storm Water (Dry Weather) Discharges from the Municipal Separate Storm Sewer Systems Within the Ventura County Watershed Protection District, County of Ventura and the Incorporated Cities Therein. Order 09-0057, NPDES No. CAS004002. Issued May 7, 2009, Corrected January 13, 2010.

[285] U.S. EPA, 1993. *Guidance Manual for Developing Best Management Practices (BMPs).* Office of Water. EPA No. 833/B-93-004. October 1993.

[286] NPDES permit (DC0000221) issued to Government of the District of Columbia, effective June 22, 2018. pp. 19-22.

result in discharges of pollutants to the MS4. As follows, the requirements in 40 CFR sections 122.26(d)(2)(iv)(A)(1), (3), and (6) effectively require such an inventory. The *MS4 Permit Improvement Guide* recommends an inventory that is similar to the requirements in the Order.[287]

Permittees must develop and maintain an inventory of public facilities that are potential sources of pollutants to the MS4. Permittees formerly covered under the 2012 Los Angeles County and 2014 City of Long Beach MS4 permits may use information from the Public Facilities Inventory developed under the previous permit to comply with this provision, provided that all requirements in Part VIII.H.2 of the Order are met. The previous 2010 Ventura County MS4 Permit did not require an inventory but required BMP implementation for specific activities and specific types of facilities as well as BMP documentation. Thus, the previous 2010 Ventura County MS4 Permit requirements are effectively similar to the Order's inventory requirement. Under the Order, activities with potential to discharge pollutants to the MS4 must be included in the inventory and must be associated with facilities where the activity occurs. The list of facility types to include in the inventory is retained from previous permits for Los Angeles County and the City of Long Beach and correspond to similar requirements in the 2010 Ventura County MS4 Permit; however, streets and roads; catch basins; and stormwater capture, control, and treatment devices are added to the inventory list. The Order consolidates information requirements from the three previous permits. The framework of this requirement is slightly different than the three previous permits, but results in equivalent requirements to implement BMPs.

The previous permit for the City of Long Beach required the Permittee to update the inventory twice during the permit term; whereas, the Regional MS4 Permit requires the inventory to be updated once per permit term. The Los Angeles Water Board believes that this change will allow for reduced burden, without diminishing the overall integrity of the inventory.

8. Annual Report Requirements

The reporting requirements for the Public Agency Activities Program in Attachment H (Annual Report Form) of the Order are based on federal requirements in 40 CFR 122.42(c) (1), (2), (3), (4) and (6) among others as identified in the Monitoring and Reporting Program (Attachment E) and are necessary to ensure program requirements are implemented.

I. Illicit Discharge Detection and Elimination Program

The title of this section has changed from Illicit Connections and Illicit Discharges Elimination Program in previous permits to Illicit Discharge Detection and Elimination (IDDE) Program. The change has been made to match federal regulation language.

1. Federal Requirements

The Los Angeles Water Board has incorporated the Illicit Discharge Detection and Elimination Program into the Regional MS4 Permit per the following federal requirements:

[287] U.S. EPA. 2010. *MS4 Permit Improvement Guide*. April 2010. pp. 67-69.

Clean Water Act section 402(p)(3)(B)(ii) requires that "[p]ermits for discharges from municipal storm sewers shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers;…"

Federal regulations at 40 CFR section 122.26(d)(2)(iv)(B) require that the stormwater management program shall be based on "a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer." The proposed management program shall include "[a] description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system," per subsection (1) of the above federal regulation.

Federal regulations at 40 CFR section 122.26(b)(2) define "illicit discharge" as "any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from firefighting activities." Federal regulations at 40 CFR section 122.26(d)(2)(iv)(B)(1) state that the following non-stormwater discharges may be allowed if they are not determined to be a significant source of pollutants to the MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from drinking water supplier distribution systems, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water. If, however, these discharges are determined to be a significant source of pollution then they must be prohibited.

Federal regulations at 40 CFR section 122.26(d)(2)(iv)(B)(1) through (7) provide the IDDE program requirements including a "description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system," field screening, investigation procedures, spill prevention, public reporting, educational activities, and a description of controls to limit infiltration of seepage from municipal sanitary sewers.

2. General Provisions

Part VIII.I.1 of the Order implements federal requirements in Clean Water Act section 402(p)(3)(B)(ii) and 40 CFR section 122.26(d)(2)(iv)(B)(3). The Permittee must continue to implement their IDDE program, maintain it in written form, and update it, as necessary. The requirements in the IDDE program are retained from previous permits for Los Angeles County, City of Long Beach, and Ventura County and have been reworded for improved clarity. Many of the program components are monitoring and reporting efforts. As such, some requirements are included in the MRP for non-stormwater outfall-based screening and monitoring.

The Regional MS4 Permit considers the procedures in the MRP for the non-stormwater outfall-based screening and monitoring program as part of the IDDE program. These Regional MS4 Permit requirements address federal regulations at 40 CFR 122.26(d)(2)(iv)(B)(2), (5), and (6), which are program requirements for the IDDE that state the permittee must include in the IDDE program: "(2) [a] description of procedures to conduct on-going field screening activities during the life of the

permit, including areas or locations that will be evaluated by such field screens;" "(5) [a] description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers" and "(6) [a] description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials."

3. Illicit Discharge Detection and Elimination

Clean Water Act section 402(p)(3)(B)(ii) requires MS4 permits to "effectively prohibit non-stormwater discharges into the storm sewers." Parts VIII.I.2 and 3 of the Order implement the federal requirement, in part, by requiring the development of procedures to investigate and eliminate illicit discharges. In addition to the broad federal requirement, the Regional MS4 Permit requires a timeline of 72 hours to initiate the investigation. This timeline is retained from previous permits for Los Angeles County and the City of Long Beach but is slightly different from the previous 2010 Ventura County MS4 Permit requirement of "one business day." Nonetheless, the Los Angeles Water Board believes "72 hours" is a clearer requirement. U.S. EPA encourages permit writers to include clear, specific, measurable requirements in permits as is evident through the Phase II remand rule[288] and guidance documents.[289]

The previous Los Angeles and City of Long Beach permits include a requirement to notify upstream jurisdictions when an illicit discharge has been determined to have originated upstream of their jurisdictional boundary. Communication with upstream jurisdictions is essential to eliminating illicit discharges as the upstream entity might not be aware of the discharge leaving their MS4.

The Regional MS4 Permit retains the requirement that if a Permittee is unable to eliminate an ongoing illicit discharge, or other circumstances prevent the full elimination of an ongoing illicit discharge, the Permittee shall require diversion of the entire flow to the sanitary sewer or treatment. In the event of either above circumstance, the Permittee shall notify the Los Angeles Water Board in writing within 30 days, providing a written plan for review and comment. The goal of this requirement is to provide a permanent solution for ongoing illicit discharges. This requirement was not included in the previous 2010 Ventura County MS4 Permit but it is necessary as it supports the federal requirement to effectively prohibit non-stormwater discharges through the MS4.

The illicit connection requirements as stated in the previous 2012 Los Angeles County, 2014 City of Long Beach, and 2010 Ventura County MS4 permits, have been combined with illicit discharge requirements in Part VIII.I of the Order. Combining illicit discharges and illicit connections into one section streamlines the Regional MS4 Permit while still meeting the NPDES requirements stated in 40 CFR section 122.26 (d)(1)(v)(B). Illicit connections are often treated as illicit discharges,

[288] U.S. EPA. 2016. National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System General Permit Remand Rule, 81 Federal Register, p 89326.
[289] U.S. EPA. 2010. *MS4 Permit Improvement Guide*. April 2010. p.5.

as is evident in U.S. EPA-issued permits for Boise Area[290] and District of Columbia.[291]

The illicit connection screening requirements included in the three previous permits are discontinued in the Regional MS4 Permit. They have been removed to eliminate redundancy and streamline the permit. As illicit connections are a source of illicit discharges by performing illicit discharge screening and investigations the Permittee is fulfilling that requirement. If the Permittee eliminates the sources of illicit discharges, then they will eliminate illicit connections.

4. Infiltration from Sanitary Sewer to MS4 – Preventative Maintenance

The NPDES requirements of 40 CFR section 122.26(d)(2)(vi)(B)(7) require that the IDDE program include "A description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary." The Sanitary Sewer Preventative Maintenance requirements were in the Public Agency Activity Program in the previous 2012 Los Angeles County and 2014 City of Long Beach MS4 permits but were not any section of the previous 2010 Ventura County MS4 Permit. Proper sanitary sewer preventative maintenance decreases the probability that a sanitary sewer line will back up, overflow, or leak, causing potential contact with the MS4 or directly to the receiving water. By moving these requirements into the IDDE section, the Regional Permit implements the above-mentioned requirements of 40 CFR 122.26(d)(2)(iv)(B)(7).

5. Spill Response

Federal regulations at 40 CFR section 122.26(d)(2)(iv)(B)(4) require a "description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer." Spills, leaks, sanitary sewer overflows, and illicit dumping or discharges can introduce a range of pollutants into the storm system. A quick response to a spill can prevent the pollutant from reaching the MS4 or the receiving water. Often, a different entity might be responsible for spill response in a community (e.g., fire department); therefore, it is imperative that adequate communication exists between stormwater and spill response staff to ensure that spills are documented and investigated in a timely manner.

The language in the Regional MS4 Permit has been streamlined to maintain the federal requirements but allow for flexibility for each Permittee to design their program to best fit the needs of their community. Other U.S. EPA-issued permits, such as the one issued to the District of Columbia,[292] include a similar streamlined approach to spill response that states "the permittee shall continue to implement procedures to prevent, contain, and respond to spills that may discharge into the MS4. The permittee shall provide for the training of appropriate personnel in spill

[290] NPDES permit (IDS-027561) issued to Ada County Highway District, Boise State University, City of Boise, City of Garden City. Drainage District #3, and the Idaho Transportation Department District #3. Effective February 1, 2013. p. 27 and 32.

[291] NPDES permit (DC0000221) issued to Government of the District of Columbia, with final signed Modification #1, effective November 9, 2012. pp. 35-36.

[292] NPDES permit (DC0000221) issued to Government of the District of Columbia, with final signed Modification #1, effective November 9, 2012. p. 25

prevention and response procedures." Additionally, the U.S. EPA-issued permit for Boise Area[293] also includes similar spill response requirements.[294]

6. Public Reporting of Non-Stormwater Discharges and Spills

Federal regulations at 40 CFR section 122.26(d)(2)(iv)(B)(5) require the permittee to develop a description of a program "to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewer." The Permittee(s) needs to promote the program to help in the identification and termination of illicit discharges. The Regional MS4 Permit establishes requirements for the Permittees, individually or as a group, to develop public education campaigns and public reporting of illicit discharges.

The language used in this Regional MS4 Permit has been streamlined to allow for adaptation of new technology other than telephone hotlines, such as websites, cellular telephone applications, and social media. Permittees must provide the public with at least one way of reporting illicit discharges, spills, and observed water quality impacts associated with the MS4.

7. Documentation and Tracking

The Regional MS4 Permit retains the overall documentation and tracking requirements in Part VIII.I.8 of the Order from the 2012 Los Angeles County and 2014 City of Long Beach MS4 permits. These requirements are more specific than in the previous 2010 Ventura County MS4 Permit but are necessary to ensure that Permittees are effectively prohibiting non-stormwater discharges, as required by Clean Water Act section 402(p)(3)(B)(ii). Additionally, the *EPA MS4 Permit Improvement Guide*[295] provides an example requirement to "track all investigations to document at a minimum the date(s) the illicit discharge was observed; the results of the investigation; any follow-up of the investigation; and the date the investigation was closed." Other U.S. EPA issued permits, such as for the Boise Area,[296] include similar approaches to IDDE, which require the Permittee to maintain a record documenting all complaints or reports of illicit discharges and responses take by the Permittee.

While the documentation requirements are less specific in some ways than those in the previous 2012 Los Angeles County and 2014 City of Long Beach MS4 permits, the requirements in the Regional MS4 Permit still meet the requirements of federal regulations. Specific documentation requirements are covered by Annual Reporting Requirements in the Regional MS4 Permit. The removal of specific requirements allows for flexibility, removes redundancy, and improves alignment

[293] NPDES permit (IDS-027561) issued to Ada County Highway District, Boise State University, City of Boise, City of Garden City. Drainage District #3, and the Idaho Transportation Department District #3. Effective February 1, 2013. p. 29.

[294] For example, a Permittee could follow the Cal OES: California Hazardous Materials Spill/Release Notification Guidance when reporting and addressing spills. The Booklet is a guidance document that summarizes emergency notification requirements including when to notify, who to notify, how to notify and what to include in the notification. (Anderson, Trevor et al. Cal OES Governor's Office of Emergency Services. California Hazardous Materials Spill/Release Notification Guidance. February 2014.)

[295] U.S. EPA. 2010. *MS4 Permit Improvement Guide*. April 2010. p. 33.

[296] NPDES permit (IDS-027561) issued to Ada County Highway District, Boise State University, City of Boise, City of Garden City. Drainage District #3, and the Idaho Transportation Department District #3. Effective February 1, 2013. p. 24 - 25.

among the three permits by allowing the Permittees to adjust their program to be the most effective within their community while still meeting the federal requirement.

The Permittee must track all suspected sources of non-stormwater discharges, starting with sources suspected of being sanitary sewage. To streamline tracking requirements within the Regional MS4 Permit, tracking requirements have been added to Part VIII.I.8 of the Order. To meet the documentation and tracking requirements, the Permittees may use the outfall database inventory developed per the MRP, which contains information on non-stormwater discharge characterization at outfalls. Documenting and tracking of illicit discharges through the inventory help to ensure that all illicit discharges are investigated and addressed, and water quality is protected.

8. Annual Report Requirements

The reporting requirements in Attachment H (Annual Report Form) are based on federal requirements in 40 CFR section 122.42(c)(1), (4) and (6) and others as identified in the Monitoring and Reporting Program (Attachment E) and are necessary to ensure program requirements are implemented.

X. RATIONALE FOR WATERSHED MANAGEMENT PROGRAMS

The Watershed Management Program is a voluntary alternative compliance pathway that allows Permittees to implement permit requirements in an integrated manner on a watershed basis, including demonstrating compliance with numeric WQBELs by implementing BMPs.

A. Previous Permit Requirements

Watershed Management Program provisions were carried over from the 2012 Los Angeles County and the 2014 City of Long Beach MS4 permits to the Regional MS4 Permit. Furthermore, the Regional MS4 Permit incorporates requirements and recommendations in the State Board Order WQ 2020-0038. However, one notable change from these two permits is the elimination of the option to develop either a Watershed Management Program (WMP) or an Enhanced Watershed Management Program (EWMP). In the previous permits, Permittees developing WMPs and EWMPs were largely subject to the same requirements except in two respects: 1) Permittees developing a WMP were not required to maximize opportunities to capture the 85th percentile, 24-hour storm event but were required to conduct a Reasonable Assurance Analysis (RAA) for every waterbody-pollutant combination in the WMP, and 2) Permittees developing an EWMP were required to maximize opportunities to capture the 85th percentile, 24-hour storm event by implementing regional multi-benefit stormwater projects but were not required to conduct a RAA except in drainage areas where retention to the 85th percentile, 24-hour storm event was not feasible. The previous permits allowed Permittees to either develop a WMP or EWMP with the expectation that only Permittees that had geotechnical issues with capturing the runoff from the 85th percentile, 24-hour storm event would opt for a WMP. However, Permittees implementing both WMPs and EWMPs sought opportunities to capture the runoff from the 85th percentile, 24-hour storm events and Permittees implementing both WMPs and EWMPs faced geotechnical issues related to capturing the runoff from the 85th percentile, 24-hour storm event throughout the area covered by the WMP or EWMP. Therefore, in practice, there was little distinction between the WMPs and EWMPs. For this reason, the Regional MS4 Permit eliminates the distinction made between a WMP

and EWMP so that these programs are now all termed Watershed Management Programs.

The 2010 Ventura County MS4 Permit did not include WMPs as an alternative compliance pathway. Rather, the prior permit only included the separate compliance pathways for receiving water limitations in the receiving water limitation provisions and water quality based effluent limitations based on TMDL WLAs in the TMDL provisions. It did not provide the opportunity to comply with permit provisions in a watershed-based integrated manner through WMPs. Ventura County Permittees proposed inclusion of the Watershed Management Program for their next permit in their ROWD, stating that "[t]he Program supports the inclusion of a watershed management approach within the next Ventura County MS4 Permit, similar to the Watershed Management Programs (WMP) outlined in Part VI.C of the 2012 Los Angeles County NPDES Permit (LA Permit)."[297] Therefore, this proposed approach was included for Ventura County Permittees in the Regional MS4 Permit.

B. General Rationale for All Watershed Management Programs

The WMPs are a voluntary alternative compliance pathway by which Permittees can meet the requirements in the Order, and are developed on a watershed or subwatershed basis. The purpose of the WMPs is to provide a framework for Permittees to implement the requirements of the Order in an integrated and collaborative fashion to address water quality priorities on a watershed scale, including complying with the requirements of Part V (Receiving Water Limitations), Part IV.B (Total Maximum Daily Load Provisions) and Attachments K through S, by customizing the control measures in Parts III.B (Prohibitions – Non-Stormwater Discharges) and Part VIII (Minimum Control Measures) of the Order. This watershed management paradigm is consistent with federal regulations that support the development of permit conditions, as well as the implementation of stormwater management programs, at a watershed scale (40 CFR §§ 122.26(a)(3)(ii), 122.26(a)(3)(v), and 122.26(d)(2)(iv)). U.S. EPA has issued a Watershed-Based NPDES Permitting Policy Statement (U.S. EPA, 2003) that defines watershed-based permitting as an approach that produces NPDES permits that are issued to point sources on a geographic or watershed basis. In this policy statement, U.S. EPA explains that, "[t]he utility of this tool relies heavily on a detailed, integrated, and inclusive watershed planning process." U.S. EPA identifies a number of important benefits of watershed permitting, including more environmentally effective results; the ability to emphasize measuring the effectiveness of targeted actions on improvements in water quality; reduced cost of improving the quality of the nation's waters; and more effective implementation of watershed plans, including TMDLs, among others.

Furthermore, the California Watershed Improvement Act of 2009 authorizes MS4 permittees statewide to develop and implement voluntary watershed improvement plans.[298] State Water Board Order WQ 2015-0075, which upheld the 2012 Los Angeles County MS4 Permit with some modifications, clarifies that "[t]he California Watershed Improvement Act of 2009 grants authority to local government permittees regulated by an MS4 permit to develop and implement watershed improvement plans, but does not limit the authority of a regional water board to impose terms related to watershed management in an MS4 permit. Further, the terms of the Watershed Management Programs are largely consistent with the watershed improvement plans authorized by

[297] Ventura Countywide Stormwater Quality Management Program. Report of Waste Discharge. January 2015.
[298] Wat. Code, §§ 16100 to 16104.

the Act, so a permittee can comply with the Regional Permit while also using the authority provided by the California Watershed Improvement Act of 2009 if it so chooses."[299]

Additionally, Public Law 115-436 Water Infrastructure Improvement Act approved on January 14, 2019 established section 402(s) of the Clean Water Act authorizing integrated plans that address both municipal wastewater and stormwater management as a potential compliance path that may be incorporated into an NPDES permit. Integrated planning is designed to help municipalities identify efficiencies in implementing requirements that arise from distinct permitting programs, particularly how best to make capital investments (Integrated Municipal Stormwater and Wastewater Planning Approach Framework, EPA, June 5, 2012). Under this law, an integrated plan can be used to implement any requirements relating to "a combined sewer overflow," "a capacity, management, operation, and maintenance program for sanitary sewer collection systems," "a municipal stormwater discharge," "a municipal wastewater discharge," and a "water quality-based effluent limitation to implement an applicable wasteload allocation in a total maximum daily load." The integrated plan can include "a schedule of compliance, under which actions taken to meet any applicable water quality-based effluent limitation may be implemented" and "the implementation of projects, including innovative projects, to reclaim, recycle, or reuse water; and green infrastructure." (33 USCA § 1342(s).) The integrated planning approach does not relax or change regulatory permitting standards, but rather recognizes existing flexibilities in the Clean Water Act to sequence and schedule compliance projects that may be relevant to multiple permitting programs. (*Id.* at subd. (s)(5).) While the watershed management programs authorized in the Order are not "integrated plans" as defined in section 402(s) of the Clean Water Act, these watershed level plans share many of the same underlying principles and advance the same goals that prompted the Los Angeles Water Board to adopt a watershed-based permitting approach for the Order. While all municipalities are encouraged to consider integrated planning approaches for their stormwater and wastewater management, municipalities participating in watershed management programs are particularly encouraged to use their watershed management programs as part of a larger integrated planning process where appropriate and useful.

Furthermore, SB 485 updated state law to expressly authorize the Sanitation Districts of Los Angeles County (LACSD) to use their facilities and expertise to help member agencies to meet MS4 permit requirements to specifically "divert, manage, treat, and discharge stormwater and dry weather runoff, as well as make beneficial use of the water." (Health & Safety Code § 4730.68) Passage of this law with further facilitate innovative, watershed level approaches to stormwater management that are consistent with the watershed-based permitting approach in the Order.

The watershed-based permitting approach is supported by a number of state and nationwide studies regarding MS4 pollution (Little Hoover Commission, Clearer Structure, Cleaner Water: Improving Performance and Outcomes at the State Water Boards (January 22, 2009). In 2008, the National Research Council published a report stating: "The course of action most likely to check and reverse degradation of the nation's aquatic resources would be to base all storm water and other wastewater discharge permits on watershed boundaries instead of political boundaries." (National Research Council, Urban Stormwater Management in the U.S. (October 15, 2008)

[299] State Water Board Order WQ 2015-0075, p. 8, footnote 30 (2015 AR, p. SB-AR-013203).

(emphasis in original).) The report acknowledged the challenges of such an approach would include "the inevitable limits of an urban municipality's authority within a larger watershed", but said the approach would be "essential" even though it would likely take years to implement.

As noted in subpart A above, the prior permits for Los Angeles County and the City of Long Beach included provisions related to the development and implementation of Watershed Management Programs as an alternative compliance pathway. However, the prior Ventura County Permit did not. The Order allows all Permittees, including those in Ventura County, to participate in WMPs as an alternative compliance pathway. There are many reasons supporting this approach, as set forth below.

First, a watershed-based structure for permit implementation is consistent with TMDLs for waterbodies in both Los Angeles and Ventura counties developed by the Los Angeles Water Board and U.S. EPA, which are established at a watershed or subwatershed scale. The majority of Los Angeles County Permittees have already been implementing approved Watershed Management Programs. Furthermore, Ventura County Permittees have already been collaborating on a watershed scale to develop and implement monitoring and implementation plans required by TMDLs.

Second, an emphasis on a watershed-based approach is appropriate and necessary at this stage in the region's MS4 program to shift the focus of the Permittees from rote program development and implementation to more targeted, water quality driven planning and implementation. Addressing MS4 discharges on a watershed scale focuses on water quality results by emphasizing the receiving waters within the watershed. The conditions of the receiving waters drive management actions, which in turn focus on the measures to address pollutant contributions from MS4 discharges. The ultimate goal of the Watershed Management Programs is to ensure that MS4 discharges: (i) achieve applicable WQBELs that implement TMDLs, (ii) do not cause or contribute to exceedances of receiving water limitations, and (iii) for non-stormwater discharges from the MS4, are not a source of pollutants to receiving waters.

Third, after 30 years of program implementation, it is critical that the Permittees design and implement their permit requirements based on their improved knowledge of stormwater and urban runoff and its impacts on local receiving waters and by employing BMPs and other control measures that have been developed and refined over the past three decades. The Watershed Management Programs are driven by strategic planning and implementation, which will ultimately result in more cost-effective implementation. The Watershed Management Programs will provide permittees with the flexibility to prioritize and customize control measures to address the water quality issues specific to the watershed or subwatershed, consistent with federal regulations (40 CFR § 122.26(d)(2)(iv)).

Importantly, a focus on watershed implementation does not mean that the Permittees must expend funds unrelated to their MS4 discharges. Rather, the Permittees within each watershed are expected to collaborate to develop a watershed strategy to address the high priority water quality problems within each watershed. They have the option of implementing the strategy in the manner they find to be most effective at achieving the necessary water quality outcomes. Each Permittee can implement the strategy individually within its jurisdiction, or the Permittees can group together to implement the strategy throughout the watershed.

While the Order includes a new compliance pathway for addressing MS4 discharges on a watershed basis for Ventura County Permittees, the Order includes recognition of the

importance of continued program implementation on jurisdictional levels. The Order also acknowledges that jurisdictional and watershed efforts may be integrated to achieve water quality outcomes.

In the Order, the watershed management program provisions serve as the mechanism for this program integration. Since jurisdictional activities also serve watershed purposes, such activities can be integrated into the Permittees' Watershed Management Programs. Such opportunities for program integration inherently provide flexibility to the Permittees in implementing their programs. Program integration can be expanded or minimized as the Permittees see fit. Some Permittees may opt to continue jurisdiction-specific implementation for certain programs, while for other program areas more collaborative watershed scale implementation may be more effective. Permittees identify individual roles and responsibilities as part of the Watershed Management Program.

Permittees can customize the BMPs to be implemented, or required to be implemented, for new and re-development, construction, and existing development areas. Flexibility to determine which industrial or commercial sites are to be inspected is also provided to the Permittees. Educational approaches are also to be determined by the Permittees under the Order. Significant leeway is also provided to the Permittees in using methods to assess the effectiveness of their various runoff management programs. This flexibility is further extended to the monitoring program requirements, which allow the Permittees to develop monitoring approaches to several aspects of the monitoring program.

The challenge in drafting the Order was to provide the flexibility described above, while ensuring that the Order provides baseline requirements and is still enforceable. To achieve this, the Order prescribes baseline or default requirements, such as receiving water limitations, discharge prohibitions, TMDL provisions, and minimum control measures, while providing the Permittees with flexibility to propose customized actions as part of their watershed management program.

C. Schedule for Development or Revision of the Watershed Management Program

Timelines to submit a Watershed Management Program to the Los Angeles Water Board for approval are indicated in Part IX of the Order. To encourage community and stakeholder involvement in the development of the Watershed Management Programs, the Order requires that the draft Watershed Management Programs are made available for public review prior to approval by the Los Angeles Water Board or Executive Officer on behalf of the Los Angeles Water Board.

The deadlines for Ventura County Permittees to develop the WMP(s) considered various factors such as: the small number of Ventura County Permittees compared to Los Angeles County Permittees (12 compared to 87); the well-established collaboration among Ventura County Permittees through their Ventura Countywide Stormwater Quality Management Program; the significantly fewer applicable TMDLs (16 compared to 35); and their decade long experience implementing watershed based TMDL implementation plans to achieve the 2010 Ventura County MS4 Permit TMDL provisions including WQBELs. Therefore, the timeframe to submit the draft plan(s) is adequate and consistent with the WMP timeframe provided in the previous 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit.

The deadlines for Los Angeles County Permittees to submit a revised RAA and revised WMP were included in the Los Angeles 2012 MS4 Permit. These deadlines were established in State Water Board Order WQ 2015-0075. The State Board Order also

specified a date of June 30, 2021 for Los Angeles County Permittees under the 2012 Los Angeles County MS4 Permit to submit a revised RAA and revised WMP to the Los Angeles Water Board. Although the State Water Board Order did not amend the 2014 City of Long Beach MS4 Permit, the City of Long Beach was also subject to this deadline due to its participation in three WMPs under the 2012 Los Angeles County MS4 Permit (Lower Los Angeles River WMP, Lower San Gabriel River WMP, Los Cerritos Channel WMP). However, the Nearshore Watersheds WMP, which was developed pursuant to the 2014 City of Long Beach MS4 Permit, was not subject to the deadline in the State Water Board Order WQ 2015-0075. Nevertheless, the Order requires all Los Angeles County MS4 Permittees to update their WMPs to conform to the requirements of the Regional MS4 Permit Order (e.g. address new or revised TMDL deadlines) within 3 months of receipt of comments from the Los Angeles Water Board that revisions are necessary, or as otherwise directed by the Executive Officer.

D. Participation in Watershed Management Programs

1. Ventura County Permittees

Ventura County Permittees that elect to develop a Watershed Management Program or join and existing Watershed Management Program must submit a Notice of Intent (NOI) to the Los Angeles Water Board. During the development of the WMP, Ventura County Permittees are deemed in compliance with the receiving water limitations pursuant to Part V of the Order for the waterbody pollutant combinations that are identified in the NOI provided they continue to implement their existing stormwater management programs and comply with all other parts of the Order (e.g. discharge prohibitions, standard provisions, minimum control measures) as discussed in Part IX.F.4 of the Order.

Ventura County Permittees may request an extension of the deadlines for submission of the NOI, submission of a draft plan, and submission of a final plan. The extension is subject to approval by the Los Angeles Water Board or the Executive Officer. Ventura County Permittees that are granted an extension for any deadlines for development of the Watershed Management Program shall be subject to the baseline requirements in Part VIII of the Order and shall demonstrate compliance with all receiving water limitations pursuant to Part V of the Order until Ventura County Permittees have an approved Watershed Management Program in place. Likewise, Ventura County Permittees that do not opt to develop a Watershed Management Program are subject to the baseline stormwater management program requirements in the Order and must demonstrate compliance with applicable WQBELs and receiving water limitations through monitoring data collected from the Permittee's outfall(s) and/or receiving waters as described in Part VII of the Order.

2. Los Angeles County Permittees

Los Angeles County Permittees that were on baseline requirements of the 2012 Los Angeles County MS4 Permit may choose to join an existing Watershed Management Program but may not develop a new individual Watershed Management Program. The City of Long Beach under the 2014 City of Long Beach MS4 Permit can choose to join another existing Watershed Management Program. Los Angeles County Permittees that participated in a Watershed Management Program approved under the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit are presumed to be participating in the Watershed Management Program in this Order unless the Permittee notifies the Los Angeles

Water Board of its intent to discontinue its participation. Los Angeles County Permittees that do not elect to continue participation in a Watershed Management Program are subject to the baseline stormwater management program requirements in the Order and must demonstrate compliance with applicable WQBELs and receiving water limitations through monitoring data collected from the Permittee's outfall(s) and/or receiving waters as described in Part VII of the Order.

Los Angeles County Permittees that opt to continue implementing an approved Watershed Management Program were required to revise their RAA and submit a revised Watershed Management Program per the timelines indicated in the 2012 Los Angeles County MS4 Permit. No changes to this requirement have been proposed consistent with deadlines established pursuant to State Water Board Order WQ 2015-0075 and WQ 2020-0038. Until a revised Watershed Management Program is approved by the Los Angeles Water Board, Los Angeles County Permittees are required to continue implementing their existing Watershed Management Program. Also note that any WMP development related provisions added by the aforementioned State Water Board 2015 WQ Order to the 2012 Los Angeles County MS4 Permit, including a section in the Watershed Management Program provisions titled "Watershed Management Program Resubmittal Process" is now integrated in Part IX of the Regional MS4 Permit Order as applicable and appropriate in context of the Regional MS4 Permit.

E. Program Development

The goal of a Watershed Management Program is to facilitate cooperative implementation of strategies, control measures, and BMPs among Permittees and, potentially, other partners within a watershed or subwatershed to control discharges of pollutants from the MS4 to levels that achieve WQBELs and do not cause or contribute to exceedances of receiving water limitations, and which are also implement the MEP standard for stormwater discharges and the requirement to effectively prohibit non-storm discharges through the MS4 to receiving waters. Each Watershed Management Program must:

- Prioritize water quality issues resulting from stormwater and non-stormwater discharges through the MS4 to receiving waters within each Watershed Management Area,
- Identify and implement strategies, control measures, and BMPs to achieve applicable water quality-based effluent limitations and/or receiving water limitations, consistent with applicable compliance schedules in the Order,
- Execute an integrated monitoring and assessment program to determine progress towards achieving applicable limitations, and
- Modify strategies, control measures, and BMPs as necessary based on analysis of monitoring data collected pursuant to the MRP to ensure that applicable water quality-based effluent limitations and receiving water limitations and other milestones set forth in the Watershed Management Program will be achieved.

Watershed Management Programs must be developed using the Los Angeles Water Board's Watershed Management Areas (see Attachments B and C of the Order). Where appropriate, Watershed Management Areas may be separated into subwatersheds to focus water quality prioritization and implementation efforts by receiving water. Furthermore, Permittees have the flexibility to format their WMP as appropriate (e.g.,

Ventura County Permittees can submit one WMP with subchapters for each watershed; a group of Los Angeles County Permittees can submit one WMP that includes portions of two adjacent watersheds; Ventura and Los Angeles County Permittees can submit one WMP for a watershed that straddles the two counties).

Permittees must identify the water quality priorities within each Watershed Management Area that will be addressed by the Watershed Management Program consistent with 40 CFR section 122.26(d)(2)(iv) and Part IX of the Order. At a minimum, these priorities must include achieving some or all applicable water quality-based effluent limitations and/or receiving water limitations established pursuant to TMDLs and included in the Order.

The Watershed Management Program must include an evaluation of existing water quality conditions, including characterization of stormwater and non-stormwater discharges from the MS4 and receiving water quality, consistent with 40 CFR §§ 122.26(d)(1)(iv) and 122.26(d)(2)(iii), to support identification and prioritization/ sequencing of management actions.

On the basis of the evaluation of existing water quality conditions, water body-pollutant combinations must be classified into one of the three categories listed in in Part IX.B.3 of the Order. If a Watershed Management Program does not identify a particular water body-pollutant combination, compliance with that water body-pollutant combination will not be covered under the Watershed Management Program and the Permittees have to demonstrate compliance with the baseline requirements (i.e., applicable receiving water limitations pursuant to Part V of the Order and with applicable interim and final water quality-based effluent limitations in Part IV and Attachments K-S of the Order for that water body-pollutant combination through monitoring collected from the Permittee's outfall(s) and/or receiving waters as described in Part VII of the Order).

Consistent with 40 CFR sections 122.26(d)(1)(iii) and 122.26(d)(2)(ii), Permittees must utilize existing information to identify known and suspected stormwater and non-stormwater pollutant sources in discharges to the MS4 and from the MS4 to receiving waters and any other stressors related to the highest water quality priorities (Categories 1 and 2). Based on the findings of the source assessment, the issues within each watershed must be prioritized and sequenced per the provisions in the Order.

Permittees must identify strategies, control measures, and BMPs to implement through their jurisdictional stormwater management programs, or collectively on a watershed scale, with the goal of creating an efficient program to focus individual and collective resources on watershed priorities, particularly achieving WQBELs and receiving water limitations addressed by the Watershed Management Program. The following provisions of the Order may be part of the watershed control measures within a Watershed Management Program:

- **Minimum Control Measures.** Permittees may assess the minimum control measures (MCMs) as defined in the Order to identify opportunities for focusing resources on the high priority issues in each watershed. For each of the 6 minimum control measures identified in the Order, Permittees may propose modifications that will achieve equivalent pollutant control given watershed priorities.
- **Non-Stormwater Discharge Measures.** Where Permittees identify non-stormwater discharges from the MS4 as a source of pollutants in the source assessment, the Watershed Control Measures must include strategies, control measures, and/or BMPs that will be implemented to effectively eliminate the source of pollutants.

These may include measures to prohibit the non-stormwater discharge to the MS4, additional BMPs to reduce pollutants in the non-stormwater discharge or conveyed by the non-stormwater discharge, or strategies to require the non-stormwater discharge to be separately regulated under a general NPDES permit. Note that the BMPs to comply with Part III.A (Prohibitions – Non-Stormwater Discharges) of the Order are customizable but the requirement to prohibit non-stormwater from being a source of pollutants is not customizable.

- **TMDL Control Measures.** Permittees must compile control measures that have been identified in TMDLs and corresponding implementation plans. If not sufficiently identified in previous documents, or if implementation plans have not yet been developed (e.g., EPA established TMDLs), the Permittees must evaluate and identify control measures to achieve water quality based effluent limitations and/or receiving water limitations established in the Order pursuant to these TMDLs.

As part of the Watershed Management Program, Permittees must conduct a Reasonable Assurance Analysis (RAA) that consists of an assessment (through quantitative analysis or modeling) to demonstrate that the activities and control measures (i.e., BMPs) identified in the Watershed Control Measures will achieve applicable water quality based effluent limitations and/or receiving water limitations with compliance deadlines during the permit term. The objective of the RAA shall be to demonstrate the ability of Watershed Management Programs to ensure that Permittees' MS4 discharges achieve applicable water quality-based effluent limitations and do not cause or contribute to exceedances of receiving water limitations.

Permittees must incorporate and, where necessary develop, interim requirements and compliance schedules into the plan consistent with 40 CFR section 122.47(a). Interim requirements and schedules shall be used to measure progress towards addressing the highest water quality priorities and achieving applicable water quality-based effluent limitations and/or receiving water limitations. Where the TMDL provisions do not include interim or final water quality based effluent limitations and/or receiving water limitations with compliance deadlines during the permit term, Permittees must identify interim requirements and compliance schedules to ensure significant progress toward achieving interim and final water quality based effluent limitations and/or receiving water limitations with deadlines beyond the permit term (40 CFR § 122.47(a)(3)).

Schedules must be developed for both the strategies, control measures and BMPs to be implemented by each individual Permittee within its jurisdiction and for those that will be implemented by multiple Permittees on a watershed scale. Schedules must be adequate for measuring progress throughout the permit term and incorporate deadlines as specified in Part IX.B.9 of the Order.

Where compliance schedules are not available (e.g., final TMDL deadlines), Permittees may request a Time Schedule Order as discussed in Part XI.E of this Fact Sheet. Permittees may propose a schedule in the Watershed Management Program that is longer than the compliance schedule set forth by the TMDL if a TSO has been approved by the Los Angeles Water Board for a waterbody pollutant combination in that TMDL.

F. Watershed Management Program Implementation

Each Permittee must implement the Watershed Management Program immediately after determination by the Los Angeles Water Board that the Watershed Management Program meets the requirements of the Order and is approved.

Permittees may request an extension of deadlines for achievement of interim milestones and final compliance deadlines established pursuant to Part IX.C.3 of the Order, only with the exception of those final compliance deadlines established in a TMDL program of implementation adopted through the state's basin plan amendment process. Permittees shall provide requests in writing sufficiently in advance of the deadline to allow the Los Angeles Water Board to evaluate the request and shall include in the request the justification for the extension. Extensions must be affirmatively approved by the Los Angeles Water Board.

G. Integrated Watershed Monitoring and Assessment

Clean Water Act section 402(a)(2) among other statutory and regulatory provisions as identified in the MRP (Attachment E) requires the permitting authority to prescribe conditions for MS4 permits to ensure compliance, including conditions on data and information collection, reporting, and such other requirements as appropriate. Consistent with this requirement, Permittees in each Watershed Management Area must develop an integrated monitoring program to assess the progress toward achieving the water quality based effluent limitations and/or receiving water limitations per the compliance schedules, and the progress toward addressing the highest water quality priorities for each Watershed Management Area. The integrated watershed monitoring and assessment program shall contain the basic elements (receiving water monitoring, stormwater outfall monitoring, non-stormwater outfall monitoring), and achieve the objectives of, the Monitoring and Reporting Program (MRP) (Attachment E of the Order).

Note that unlike the WMP which is voluntary, the development of an integrated monitoring program pursuant to the MRP is a requirement for all Permittees regardless of participation in a WMP. Therefore, participants in an integrated monitoring program do not have to match the participants in a Watershed Management Program. For example, if a Permittee indicates in their WMP NOI that they are leaving a Watershed Management Program, this does not automatically apply to the corresponding integrated monitoring program. The Permittee shall continue to be part of the existing integrated monitoring program unless the Permittee specifically provides the Los Angeles Water Board written notification. In such a case, Part III.D.1.d of the MRP applies.

H. Adaptive Management Process

Permittees in each Watershed Management Program must implement an adaptive management process, which is a periodic, comprehensive program evaluation, including re-analysis of data and/or modeling, and modification process to determine progress toward achieving WQBELs and receiving water limitations and to adapt the Watershed Management Program to become more effective at achieving WQBELs and receiving water limitations. Permittees shall submit the results in conjunction with their ROWD. In implementing the adaptive management process, Permittees shall consider the elements specified in Part IX.E of the Order. Note that in the 2012 Los Angeles County Permit and the 2014 City of Long Beach MS4 Permit, the adaptive management process was required to be implemented every 2 years and the results were submitted in conjunction with the Annual Report and the ROWD. Many Permittees in their ROWDs requested to decrease the adaptive management results submittal frequency. This is a reasonable request because requiring Permittees to implement the adaptive management process every 2 years is unnecessary given the multi-year nature of many projects and programs where the design, construction, and implementation often span

more than 2 years. Furthermore, Permittees are already reporting their progress on an annual basis through their Annual Reports and may propose modifications to their Watershed Management Programs at any point in response to this annual evaluation. Therefore, the Order requires Permittees to submit adaptive management results in conjunction with the ROWD (180 days prior to the Order expiration date) with the expectation that Permittees are implementing their adaptive management process throughout the implementation of their Watershed Management Program when necessary.

Permittees are required to report on the adaptive management process results per Part IX.E.4 of the Order. Based on the results of the adaptive management process, Permittees may propose any modifications necessary to improve the effectiveness of the Watershed Management Program as a separate submittal to the Los Angeles Water Board as necessary. Permittees must implement any modifications to the Watershed Management Program upon approval by the Los Angeles Water Board.

XI. RATIONALE FOR COMPLIANCE DETERMINATION PROVISIONS

The Order adds Part X, Compliance Determination for WQBELs and receiving water limitations. In the previous permits, there was no single compliance determination section. Rather, the previous permits included individual compliance determination provisions within many different sections and Permittees were required to read them all together to determine how their compliance would be determined.[300] For better organization and for ease of determining compliance, the Order consolidates many of these provisions where appropriate, particularly those related to WQBELs and receiving water limitations, into one section to reduce redundancies and improve clarity.

Provisions specifying that compliance with the Watershed Management Program provisions in Part IX of the Order may constitute compliance with the receiving water limitation provisions in Part V of the Order were previously included in the 2012 Los Angeles County Permit and the 2014 Long Beach Permit. They were not previously included in the 2010 Ventura County Permit. In the Order, the Los Angeles Water Board continues to offer multiple paths to compliance with receiving water limitations. The number of TMDLs, and myriad water quality issues that the TMDLs address, is unprecedented anywhere else in California. The Los Angeles Water Board worked closely with U.S. EPA in implementing the requirements of the 1999 consent decree between U.S. EPA and several environmental groups when developing these TMDLs. As shown in Table F-24, the TMDLs implemented in the Order cover every coastal watershed in the Los Angeles Region. Most of these TMDLs were initially incorporated in the prior MS4 permits (Order No. R4-2010-0108, Order No. R4-2012-0175, and Order No. R4-2014-0024). The extensive and enforceable TMDL implementation programs, coupled with Permittee commitments to implement watershed solutions to address all impairments in regional waters, allowed this Board to incorporate alternative compliance mechanisms contingent upon implementation of approved Watershed Management Programs. This unique compliance mechanism provided an incentive and robust framework for Permittees in the 2012 Los Angeles County MS4 Permit and the 2014 Long Beach MS4 Permit to craft comprehensive pathways to achieve compliance with receiving water limitations – both those addressed by TMDLs and those not addressed by TMDLs. In the Order, the Los Angeles Water Board extends this approach to Ventura County Permittees that choose to take advantage of this compliance alternative.

[300] For example, the 2012 Los Angeles County Permit included compliance related provisions in the following sections among others: interim and final WQBELs, Watershed Management Programs, Time Schedule Orders, and Monitoring and Reporting Program Requirements.

The Compliance Determination provisions in Part X of the Order are organized as follows. The first section addresses some general provisions related to compliance determination. The second section addresses WQBELs and receiving water limitations for pollutants other than trash. The third section addresses a WQBELs and receiving water limitations for trash. The fourth section addresses commingled discharges. The last section addresses Time Schedule Orders. Each of these sections are discussed in turn below.

A. General Compliance Provisions

Consistent with State precedent, compliance with water quality standards is and remains the ultimate goal of the Order.[301] To that end, the Order requires compliance with WQBELs and receiving water limitations. Pursuant to section 13360 of the Water Code, the Water Board may not dictate the manner of compliance. Permittees may comply with the WQBELs and receiving water limitations in the Order in any lawful manner. Part X.A.1 of the Order describes where compliance will be determined for these limitations. Part X.A.2 of the Order restates longstanding precedent that the so-called "iterative process" (as Part V.C of the Order is often referred to as) does not constitute compliance with receiving water limitations in Part V.A and V.B of the Order. This issue is discussed in greater detail in Part VII of this Fact Sheet.

B. WQBELs and Receiving Water Limitations for Pollutants Other Than Trash

As described in Parts V.B (WQBELs), VI (Rationale for TMDL Provisions), and VII (Rationale for Receiving Water Limitations) of this Fact Sheet, the Order incorporates WQBELs and receiving water limitations to ensure MS4 discharges do not cause or contribute to exceedances of water quality standards.

1. Compliance Paths

The Los Angeles Water Board is in a unique position to be able to offer multiple paths to compliance with WQBELs and receiving water limitations in the Order. Alternative compliance options, however, differ depending on whether the limitation is considered an "interim limitation" or "final limitation".

For waterbody pollutant combinations addressed by TMDL, the compliance path is as follows. The Order includes requirements in Part IV to implement WLAs assigned to MS4 discharges from 45 TMDLs. The TMDL provisions in Part IV.B and Attachments K-S of the Order include WQBELs and/or receiving water limitations based on the applicable WLAs. TMDLs adopted through the State's basin planning process are required to include programs of implementation pursuant to California Water Code section 13242, including implementation schedules, for attaining water quality standards. TMDLs adopted by U.S. EPA do not include implementation schedules; however, in some instances the Los Angeles Water Board has adopted an implementation schedule through the State's basin planning process (see Part VI.F of this Fact Sheet).

The TMDL provisions in Part IV and Attachments K-S of the Order incorporate compliance schedules consistent with the associated TMDL implementation schedule to achieve the final WQBELs and/or receiving water limitations for the pollutants addressed by the TMDL. For EPA established TMDLs where there is no state program of implementation, Permittees must comply with the WQBELs as of the effective date of the Order in the following circumstances: 1) if the WLAs assigned to MS4 discharges was based on existing pollutant loads at the time the

[301] Order WQ 2015-0075, p. 14.

TMDL was established, meaning that no reduction in pollutant load was required or 2) Permittees are already in compliance with the WQBEL. (For additional information on the implementation of EPA established TMDLs in the Order see the discussion in Part VI.F of this Fact Sheet.) For all TMDLs with implementation schedules established in a state program of implementation, Permittees may comply with these provisions directly or through a Watershed Management Program as described in subparts 2 and 3 below. Compliance with TMDL implementation schedules may also be used as an alternative means to demonstrate compliance with the receiving water limitations in Part V of the Order for the waterbody-pollutant combination addressed by the TMDL as described in subpart 2 below.

For waterbody pollutant combinations not addressed by TMDL, Permittees are subject to the receiving water limitations in Part V of the Order. Permittees may comply with these provisions directly or through a Watershed Management Program as described below.

2. Alternative Demonstrations of Compliance with Certain Receiving Water Limitations Using a TMDL Implementation Schedule

The Los Angeles Water Board recognizes that, in the case of impaired waters subject to a TMDL, the permit's receiving water limitations for the pollutants addressed by the TMDL may be exceeded during the period of TMDL implementation. Therefore, the Order provides, in Part X.B.1.a, that a Permittee in full compliance with the applicable TMDL requirements in the Order, including the compliance schedules, shall be deemed in compliance with the receiving water limitations provisions in Part V of the Order for the particular pollutant-waterbody combination addressed by the TMDL. Permittees may take advantage of this compliance path without implementing a Watershed Management Program.

3. Alternative Demonstrations of Compliance Using A Watershed Management Program

The provisions in Part IX of the Order to allow Permittees to develop a Watershed Management Program to address certain TMDL provisions in Part IV.B and Attachments K-S of the Order as well as the receiving water limitations in Part V of the Order using watershed, regional, and jurisdictional strategies. Watershed Management Programs are discussed in greater detail in Part X of this Fact Sheet. As discussed in Part VI.F of this Fact Sheet, Watershed Management Programs may not be used to address Trash or pollutants addressed by a U.S. EPA TMDL that does not require a load reduction. For each of the drainage areas covered by a Watershed Management Program, the Watershed Management Program must either demonstrate that strategies, control measures, and BMPs cumulatively retain the runoff volume of the 85th percentile, 24-hour storm event for the drainage area tributary to the applicable receiving water, or for areas not addressed as aforementioned, shall include a Reasonable Assurance Analysis (RAA) to demonstrate that applicable WQBELs and receiving water limitations shall be achieved through implementation of other watershed control measures. The RAA must be quantitative and performed using a peer-reviewed model in the public domain. For WQBELs and receiving water limitations associated with a TMDL, the objective of the RAA is to demonstrate that the selected water quality control measures will achieve the applicable TMDL provisions. In the case of WQBELs and receiving water limitations not addressed by a TMDL implementation plan

(either because there is no TMDL or because its U.S. EPA TMDL without a state adopted program of implementation), the objective of the RAA is to demonstrate the ability of the selected water quality control measures in the Watershed Management Program to ensure that Permittees' MS4 discharges do not cause or contribute to exceedances of applicable WQBELs and receiving water limitations.

A Permittee opting to use a Watershed Management Program to comply with WQBELs and receiving water limitations in Part IV.B and Attachments K-S of the Order and/or the receiving water limitations Part V of the Order demonstrates compliance by implementing the applicable actions and schedules in its approved Watershed Management Program for a waterbody-pollutant combination. For waterbody-pollutant combinations addressed by a TMDL, any schedule in the Watershed Management Program must be consistent with any applicable compliance schedule in the permit, which is based on the TMDL implementation schedule, unless a TSO has been approved by the Los Angeles Water Board for a waterbody-pollutant combination in that TMDL. For pollutants not addressed by a TMDL, or where there is no TMDL implementation schedule, Permittees may incorporate control measures to address the exceedance provided that the Watershed Management Program incorporates a final date for achieving the applicable WQBEL and/or receiving water limitation.

Given the significant time and effort required to develop and implement a Watershed Management Program, the Order allows Permittees to be deemed in compliance with WQBEL(s) and/or receiving water limitation(s), irrespective of actual attainment of the applicable limitation. Permittees are only deemed in compliance with these limitations up until the final deadline for the achievement of the relevant WQBEL(s) and/or receiving water limitation(s) in the Watershed Management Program. Permittees may not be deemed in compliance with TMDL deadlines that have passed, unless a TSO has been approved by the Los Angeles Water Board for a waterbody-pollutant combination in that TMDL, or unless they have chosen to comply with TMDL-based requirements by retaining all non-stormwater runoff and the volume of stormwater runoff from the 85th percentile 24-hour storm and the Permittee is continuing to engage in monitoring and adaptive management through an approved Watershed Management Program.

A Permittee that fails to meet any requirement or date for its achievement related to implementation of an approved Watershed Management must directly comply with the provisions of Part IV.B, Part V, and Attachments K-S of the Order for the waterbody-pollutant combination(s) that should have been addressed by that requirement unless the Permittee requests and receives an extension through a modification of its Watershed Management Program or a Time Schedule Order as discussed below in Part XI.E. The Los Angeles Water Board understands that the implementation of the actions, milestones, and schedules in a Watershed Management Program may depend on a host of factors (e.g. funding, staff resources, etc.). As such, the Order adds provisions authorizing minor deviations from the actions, milestones, and schedules in an approved WMP provided certain conditions are met.

4. Direct Demonstrations of Compliance

Direct compliance with WQBELs and/or receiving water limitations is determined by verification through monitoring that the TMDL provisions in Part IV.B and Attachments K-S of the Order and/or the receiving water limitation provisions in

Parts V.A and B have been achieved. The Order provides Permittees with several means of demonstrating direct compliance with applicable WQBELs and receiving water limitations. In general, compliance is established by either showing that the discharge or the receiving water is in compliance with the applicable limit for a specific waterbody-pollutant combination or that there was no discharge from a Permittee's MS4 outfall(s) during the relevant time period. Additionally, in some instances compliance with receiving water limitations and/or WQBELs may be excused when the exceedance is the result of an authorized non-stormwater discharge identified in Part III.A.2 of the Order.

C. WQBELs and Receiving Water Limitations for Trash

For trash, a Permittee may demonstrate compliance with an applicable TMDL through one of any lawful means. Compliance options typically fall into one of four compliance options: Full Capture (Part IV.B.3.b.i of the Order), Mass Balance (Part IV.B.3.b.ii of the Order), Scientifically Based Alternative (Part IV.B.3.b.iii of the Order), or Minimum Frequency of Assessment and Collection (Part IV.B.3.b.iv of the Order). These provisions are discussed in further detail in Part VI.E of this Fact Sheet. For areas not subject to a TMDL and that are not addressed through a WMP, a Permittee may use compliance with the discharge prohibition as evidence of compliance with the receiving water limitations in Part V of the Order in priority land use areas, equivalent alternate land uses and designated land uses only.

D. Commingled Discharges

Due to the inherently complex and interconnected nature of MS4s, this permit assigns joint responsibility to Permittees to meet the requirements of the Order. "Joint responsibility" means that the Permittees that have commingled MS4 discharges are responsible for implementing programs in their respective jurisdictions, or within the MS4 for which they are an owner or operator, to meet the WQBELs and/or receiving water limitations assigned to such commingled MS4 discharges.

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

Part X.D of the Order includes provisions identifying how Permittees with commingled discharges may clarify and distinguish their individual contributions and demonstrate that its MS4 discharge did not cause or contribute to an exceedance of an applicable WQBEL and/or receiving water limitation. If such a demonstration is made, though the Permittee's discharge may commingle with that of other Permittees, the Permittee would not be held jointly responsible for the exceedance of the applicable limitation. Individual Permittees who demonstrate compliance with the applicable at the limitations will not be held responsible for violations by non-compliant Permittees.

Given the interconnected nature of most Permittees' MS4s, Permittees are required to work cooperatively to control the contribution of pollutants from one portion of the MS4 to another portion of the system through inter-agency agreements or other formal arrangements as set forth in 40 CFR section 122.26(d)(2)(i)(D).

E. Time Schedule Orders

This section generally discusses under what circumstances a Time Schedule Order (TSO) may be requested. Under Water Code 13300, a Permittee may submit for the Los Angeles Water Board's consideration a time schedule setting forth the actions it will take to address an actual or threatened discharge of waste in violation of permit requirements. If the discharge of waste implicates a violation subject to the mandatory minimum penalty provisions in Water Code section 13385(h) or (i), a TSO issued pursuant to 13385(j)(3) may be considered. TSOs issued pursuant to Water Code sections 13300 and/or 13385(j)(3) do not provide protection from potential citizen suits. In the Order, TSOs will typically be considered where a Permittee determines that its MS4 discharge may not meet WQBELs and/or receiving water limitations in Part IV.B and Attachments K through S and Part V of the Order for which (1) final TMDL compliance deadlines have passed as listed in Table F-26, or (2) no compliance schedule has been provided in the Order. Nothing in this section prevents the Los Angeles Water Board from issuing a TSO pursuant to Water Code section 13300, when appropriate. During the term of the 2012 Los Angeles County MS4 Permit, the Los Angeles Water Board issued three TSOs for various Permittees to comply with bacteria requirements.[302]

Permittees may individually request a TSO or may jointly request a TSO with all Permittees subject to the WQBELs and/or receiving water limitations. Requests must be made far enough in advance to allow for evaluation of the request, submittal of additional information if necessary, drafting, public comment, and issuance by the Los Angeles Water Board, which may require a publicly noticed meeting. To ensure that enough information is provided to the Los Angeles Water Board to evaluate the request and, if appropriate, draft a TSO, Part X.E.5 of the Order specifies the information that must be included in the request.

Permittees are not guaranteed to receive a TSO or a WMP modification and Permittees should not rely on the certainty of a deadline extension. Permittees are strongly encouraged to implement control measures that will in fact get them into compliance with applicable deadlines.

The Los Angeles Water Board does not intend to take enforcement action against a Permittee for violations of specific WQBELs and/or receiving water limitations if a Permittee is fully complying with the requirements of a TSO to resolve exceedances of the WQBELs and/or receiving water limitations for the specific pollutant(s) in the MS4 discharge.

XII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

The Monitoring and Reporting Program (MRP) (Attachment E of the Order) establishes monitoring, reporting, and recordkeeping requirements that implement the federal and state laws and/or regulations. Monitoring, and reporting of the monitoring results as well as other information on implementation of permit requirements are critical components of the Order. Monitoring is performed to determine compliance with the Order, identify sources of pollutants in MS4 discharges, assess and improve the effectiveness of BMPs and other pollutant control measures, and characterize pollutant loading in MS4 discharges and receiving water. "Without clear monitoring objectives and a detailed monitoring plan, it will

[302] TSO No. R4-2014-023 (later amended in TSO No. R4-2014-023-A01), TSO No. R4-2014-0142, and TSO No. R4-2015-0108.

be difficult for permittees and permitting authorities to evaluate the effectiveness of the municipal stormwater program."[303]

The following provides the legal, factual, technical, and policy rationales for the monitoring and reporting requirements contained in the Order and MRP.

The structure of the MRP follows the 2012 Los Angeles County and the 2014 City of Long Beach MS4 Permits. For the most part, the substantive requirements from all three previous permits have been carried over to the MRP, and any significant changes are discussed below. Requirements in the MRP apply to all Permittees unless otherwise specified.

A. Legal Authorities Supporting Monitoring and Reporting

1. Authorities Supporting Monitoring and Reporting Generally

Sections 308(a) and 402(a)(2) of the federal Clean Water Act[304], and 40 CFR sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements and establish substantive monitoring and reporting requirements for NPDES permits. Federal regulations applicable to large and medium MS4s also specify additional monitoring and reporting requirements. (40 CFR §§ 122.26(d)(2)(i)(F) & (d)(2)(iii)(D), 122.42(c).) California Water Code section 13383 further authorizes the Los Angeles Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements.[305]

The regulations specific to monitoring and reporting requirements for MS4 discharges are prescriptive and require the permitting agency to include requirements for both stormwater and non-stormwater effluent sampling at representative outfalls, representative receiving water monitoring, sampling of specific pollutants, monitoring at specified intervals (e.g., at least three storm events per year), use of analytical methods specified in 40 CFR Part 136, use of field collection methods (e.g., grab vs. composite samples), among other requirements.[306]

As the Ninth Circuit Court of Appeal stated in a case concerning the 2001 Los Angeles County MS4 Permit (Order No. 01-182): "First and foremost, the Clean Water Act *requires* every NPDES permittee to monitor its discharges into the navigable waters of the United States in a manner sufficient to determine whether

[303] U.S. EPA, *MS4 Permit Improvement Guide*, p. 97 (April 2010, EPA 833-R-10-001); NPDES Permit Writers' Manual (2010) at p. 8-2, section 8.1.1.

[304] CWA § 308(a) mandates, in part, that "the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require…" CWA § 402(a)(2) mandates that "[t]he Administrator shall prescribe conditions for such permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate."

[305] See, In the Matter of the Petitions of The City of Oceanside, Fallbrook Public Utilities District, and the Southern California Alliance of Publicly Owned Treatment Works, For Review of WDR Order Nos. R9-2019-0166 [NPDES No. CA0107433] and R9-2019-0169 [NPDES No. CA0108031] ("Fallbrook"), State Water Board Order WQ 2021-0005, at p. 12-13, n. 31 (the plain language of section 13383 provides the Water Boards with authority to establish monitoring and reporting requirements for MS4 discharges).

[306] 40 CFR § 122.26(d)(2).

it is in compliance with the relevant NPDES permit….That is, an NPDES permit is unlawful if a permittee is not required to effectively monitor its permit compliance."[307] The Court also stated:

> But while otherwise more flexible than the traditional NPDES permitting system, nothing in the MS4 permitting scheme relieves permittees of the obligation to monitor their compliance with their NPDES permit in some fashion…Rather, EPA regulations make clear that while ms4 NPDES permits need not require monitoring of each stormwater source at the precise point of discharge, they may instead establish a monitoring scheme "sufficient to yield data which are *representative of the monitored activity..."*[308]

The federal authority described herein mandates that the Los Angeles Water Board impose a monitoring and reporting program on MS4 permittees that is sufficient to determine compliance with permit terms, as with all NPDES permittees.

In part, federal regulation requires MS4 Permittees, specifically, to "[c]arry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer," including a "monitoring program for representative data collection for the term of the permit that describes the location of outfalls or field screening points to be sampled (or the location of instream stations) …"[309] The Regional MS4 Permit MRP requirements, including the receiving water monitoring during wet and dry weather and stormwater and non-stormwater outfall-based monitoring, are necessary to meet these federal requirements. Further, because the Los Angeles Region is characterized by two distinct periods, wet weather and dry weather, the frequency of monitoring required by the MRP, generally three wet weather events and two dry weather events per year, is necessary to meet federal requirements for representative data collection. The MRP provides definitions to guide data collection during wet weather conditions to ensure it is representative.

Additionally, federal regulations require that a program to detect and remove illicit discharges includes "on-going field screening activities during the life of the permit" and "procedures to be followed to investigate portions of the separate storm sewer system that … based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges … (such procedures may include: sampling procedures …)…"[310] Therefore, the MRP provisions that pertain to non-stormwater screening and outfall monitoring requirements, are necessary to meet this federal requirement.

2. Monitoring Is Necessary to Assess BMP Effectiveness

Assessment of BMP implementation and effectiveness is specifically required by federal regulations at 40 CFR sections 122.26(d)(2)(v) and 122.42(c)(3).[311] Specifically, section 122.26(d)(2)(v) requires an assessment of controls [BMPs]

[307] *Natural Resources Defense Council v. County of Los Angeles* (9th Cir. 2013) 725 F.3d 1194, 1207, cert. den. (citing CWA § 402(a)(2) and 40 CFR §§ 122.44(i)(1) and 122.26(d)(2)(i)(F) (emphasis in original).)

[308] *Id*., at p. 1209 (citations omitted; emphasis in original) (citing CWA § 402(a)(2) and 40 CFR §§ 122.41(i)(1) and 122.48(b).)

[309] 40 CFR § 122.26, subds. (d)(2)(i)(F) and (d)(2)(iii)(D).

[310] *Id*., subd. (d)(2)(iv)(B)(2)-(3).

[311] 40 CFR § 122.42(c) are the *additional* reporting requirements for MS4 permittees. MS4 permittees are also subject to all reporting requirements that apply to NPDES permittees generally.

proposed to be implemented as a result of the Permittees' stormwater quality management programs, while section 122.42(c)(3) requires that Permittees revise the assessment of their stormwater quality management program as necessary in each annual report based on actual program implementation outcomes (e.g., water quality monitoring data, reduction in non-stormwater discharges, changes in public behavior, BMP effectiveness data).[312] Furthermore, 40 CFR section 122.41(h), which applies to all NPDES permits, including MS4 permits, requires that the permittee furnish to the permitting agency any information that it requests to determine compliance with the permit.

Additionally, a 2008 U.S. EPA publication, "Evaluating the Effectiveness of Municipal Stormwater Programs," states that "EPA stormwater regulations require that the effectiveness of the SWMP [Storm Water Management Program] be evaluated, including assessment of SWMP implementation, evaluation of BMP effectiveness, and the extent to which improvements in storm water outfall discharge quality have occurred."[313]

Monitoring and reporting requirements to evaluate BMP effectiveness are included in U.S. EPA issued MS4 Permits issued to the District of Columbia[314], Middle Rio Grande,[315] and Boise/Garden City.[316] Inclusion of similar provisions in U.S. EPA-issued permits further supports the Los Angeles Water Board's determination that federal law requires the inclusion of monitoring and reporting requirements in the permit to evaluate BMP effectiveness.

Federal regulations direct tracking and reporting of "[t]he status of implementing the components of the storm water management program that are established as permit conditions;" "[a] summary of data, including monitoring data, that is accumulated throughout the reporting year;" and "[a] summary describing the number and nature of enforcement actions, inspections, and public education programs," among others.[317]

Further, U.S. EPA's *MS4 Permit Improvement Guide* states:

> An important part of any municipal storm water program is to document and track information on activities the permittee undertakes to comply with the Permit Requirements … In addition, adequate tracking is necessary to generate and provide reports of program progress not only to the permitting authority, but to a permittee's internal management for planning and funding

[312] Note also that 40 CFR § 122.34(d)(1) dictates that permits "must require the permittee to evaluate compliance with the terms and conditions of the permit, including the effectiveness of the components of its storm water management program, and the status of achieving the measurable requirements in the permit."

[313] U.S. EPA, Evaluating the Effectiveness of Municipal Stormwater Programs.

[314] See U.S. EPA, NPDES Permit No. DC0000221, Authorization to Discharge Under the National Pollutant Discharge Elimination System, Municipal Separate Storm Sewer System Permit, issued to the District of Columbia (Oct. 7, 2011), Part 6.2.1, pp. 39-40.

[315] See U.S. EPA, NPDES Permit No. NMR04AOOO, Authorization to Discharge Under the National Pollutant Discharge Elimination System, Municipal Separate Storm Sewer System Permit, issued to the Middle Rio Grande Watershed (Dec. 22, 2014), Parts III.A and III.B.3, pp. 1, 7 of Part III.

[316] See U.S. EPA, NPDES Permit No. IDS-027561, Authorization to Discharge Under the National Pollutant Discharge Elimination System, Municipal Separate Storm Sewer System Permit, issued to Ada County Highway District, Boise State University, City of Boise, City of Garden City. Drainage District #3, and the Idaho Transportation Department District #3 (Dec. 12, 2012), Part IV.C.3.c(ii)-(iii), p. 47.

[317] 40 CFR § 122.42(c)(1), (c)(4), and (c)(6).

> purposes … To assist the permittee in ensuring appropriate data is gathered and analyzed, the permitting authority should be very clear regarding annual reporting requirements.[318]

U.S. EPA's guide also suggests the following model MS4 permit provision, "Within the first [insert time frame which corresponds to the development of the monitoring program e.g. first two years of permit], the permittee must develop a tracking system to track the information required in the permit as well as the information required to be reported in the annual report."[319]

3. Federal Requirements for Non-Stormwater Outfall-Based Screening and Monitoring

Phase I (see 40 CFR 122.26 (d)(1)(v)(B) and (d)(1)(iv)(B)) and Phase II stormwater management programs (see 40 CFR 122.26(d)(2)(iv)(B)) are required to address illicit discharges into the MS4. An illicit discharge is defined as any discharge to a municipal separate storm sewer system that is not composed entirely of storm water, except allowable discharges pursuant to an NPDES permit (40 CFR 122.26(b)(2)). In addition to requiring permittee to have the legal authority to prohibit non-stormwater discharges from entering storm sewers (CWA Section 402(p)(3)(B)(ii)), MS4 permits must also require the development of a comprehensive, proactive Illicit Discharge Detection Elimination (IDDE) program."[320]

The Los Angeles Water Board has incorporated the Non-Stormwater Outfall-Based Screening and Monitoring Program and crossover requirements of the Illicit Discharge Detection and Elimination Program into the Regional MS4 Permit per the following federal requirements:

> Clean Water Act section 402(p)(3)(B)(ii) states that permits "shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers;…"
>
> 40 CFR section 122.26(d)(2)(i)(F) requires the applicant for a Phase I MS4 permit demonstrate they have legal authority to "carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer."
>
> 40 CFR section 122.26(d)(2)(iv)(B)(2) requires a program to detect and remove illicit discharges and improper disposal that includes "(2) A description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens;…"
>
> 40 CFR section 122.41(j)(1) states "samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity."
>
> 40 CFR section 122.42(c) requires the owner or operator of an MS4 to submit an annual report that includes in part "(1) The status of implementing the components of the storm water management program that are established as

[318] U.S. EPA, *MS4 Permit Improvement Guide*, Chapter 8, p. 96.
[319] Id., at p. 95.
[320] U.S. EPA. 2010. *MS4 Permit Improvement Guide*. Office of Water, Office of Wastewater Management, Water Permits Division. April. 2010. P. 24, Ch. 3.

permit conditions; (2) Proposed changes to the storm water management programs that are established as permit condition. Such proposed changes shall be consistent with §122.26(d)(2)(iii) of this part…", "(4) A summary of data, including monitoring data, that is accumulated throughout the reporting year…", and "(6) A summary describing the number and nature of enforcement actions, inspections, and public education programs…"

40 CFR section 122.48(b), requires that all permits shall specify "[r]equired monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring;..."

B. General Monitoring Provisions

As explained in Attachment D at Part III, all monitoring, sampling, sample preservation, and analyses must be conducted according to sufficiently sensitive test procedures approved under 40 CFR Part 136 for the analysis of pollutants, unless another test procedure is required under 40 CFR subchapter N or is otherwise specified in the Order for such pollutants. (40 CFR § 122.41(j)(4); 40 CFR § 122.21(e)(3); 79 Fed. Reg. 49001 (Aug. 19, 2014).) If a Permittee fails to use a lab that can conduct the most sensitive test method set forth in 40 CFR Part 136 for a particular pollutant, then the Permittee will be in violation of the monitoring and reporting requirements.

The General Monitoring Provisions section of the MRP carries over standard monitoring requirements from the previous permits with updates where necessary. The MRP requires Permittees to submit a written request for any modifications to monitoring and reporting requirements in the MRP including an approved Monitoring Program to the Executive Officer of the Los Angeles Water Board for approval. The previous 2012 Los Angeles County and the 2014 City of Long Beach MS4 Permits had similar requirements in Part IX.G.5 of Attachment E for non-stormwater discharges. This is also consistent with the standard practice in these two previous permits where Permittees would submit monitoring and reporting program modification requests to the Los Angeles Water Board for Executive Officer approval. The previous 2010 Ventura County MS4 Permit included prescribed monitoring requirements that were not customizable and, therefore, Permittees could not request substantive modifications. Rather, the EO on behalf of the Los Angeles Water Board could modify the MRP as necessary.

Analytical procedure requirements in the previous permits were updated in the MRP of the Order. The most important changes, which are reflected in Attachment E, include the following:

First, the MRP no longer requires Permittees to test for Aroclors. Instead, at a minimum, it requires analyzing all 55 PCBs congeners listed in Table A-7 of the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality Provisions, using a high-resolution EPA method.

The MRP also requires the laboratories analyzing monitoring samples to be certified by the State Water Board Environmental Laboratory Accreditation Program (ELAP), and requires that Permittees include quality assurance/quality control data with their reports. This provision is a standard requirement in NPDES permits. ELAP certified labs must

be compliant with lab methods in 40 CFR Part 136 therefore assuring the Los Angeles Water Board that data collected meets federal standards.[321]

Part XIV.J of the MRP of the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit included a requirement for Permittees to provide to the Los Angeles Water Board upon request, standard operating procedures (SOP). For clarity, a requirement in the MRP of the Regional MS4 Permit was added requiring Permittees to continue to develop and maintain a SOP.

C. Monitoring Programs

The MRP requires the Los Angeles County Permittees to continue implementing their most recent Monitoring Program listed in Table E-1 of the MRP, and the Ventura County Permittees to amend their existing monitoring program to include additional TMDL and monitoring station requirements in a Monitoring Program consistent with the provisions of the MRP.

The MRP also allows Permittees to implement a customized monitoring program with the primary objective of allowing for the customization of the outfall monitoring programs and that achieves the five Primary Objectives set forth in Part I.A of the MRP and includes the elements set forth in Part I.C of the MRP. When proposing a customized monitoring program, the Permittees must provide sufficient justification for each element of the program that differs from the monitoring program as set forth in the MRP. The MRP provides options for each Permittee to individually develop and implement an Integrated Monitoring Program (IMP), or alternatively, Permittees may cooperate with other Permittees to develop a Coordinated Integrated Monitoring Program (CIMP). Both the IMP and CIMP are intended to facilitate the effective and collaborative monitoring of receiving waters, stormwater, and non-stormwater discharges and to report the results of monitoring to the Los Angeles Water Board.

The IMP and CIMP requirements within the MRP largely summarize the requirements and reinforce that, at a minimum, the IMP or CIMP must address all TMDL and non-TMDL monitoring requirements of the Order, including receiving water monitoring, stormwater outfall based monitoring, and non-stormwater outfall-based monitoring.

Both the IMP and CIMP approach provide opportunities to increase the cost efficiency and effectiveness of the Permittees monitoring program as monitoring can be designed, prioritized and implemented on a watershed basis. The IMP/CIMP approach allows the Permittees to prioritize monitoring resources between watersheds based on TMDL compliance schedules, and coordinate outfall-based monitoring programs and implement regional studies (if participating). Cost savings can also occur when Permittees coordinate their monitoring programs with other Permittees.

The previous 2012 Los Angeles County and the 2014 City of Long Beach MS4 Permits' IMPs and CIMPs, the City of Rolling Hills' non-stormwater Monitoring Program, and the two Board directed individual monitoring programs (for Compton and Gardena) are incorporated in Table E-1 of the MRP by reference. In the MRP, the cities of Compton and Gardena are required to develop an IMP or join a CIMP. The Los Angeles Water Board does not intend to issue a Board directive to these two Permittees unless their IMP is not approved. Los Angeles County Permittees including the City of Long Beach with an existing Monitoring Program(s) shall submit an updated Monitoring Program(s) to the Los Angeles Water Board for approval to incorporate the modifications in

[321] Sotelo, Christine. State Water Board California Environmental Laboratory Accreditation Program. Updates to California ELAP Field of Testing Forms. May 31, 2019.

requirements of the MRP, and specifically, to be consistent with the requirements in Attachments K through S of the Order. The most recent approved Monitoring Programs shall remain in effect until the Executive Officer of the Los Angeles Water Board approves the updated ones. If the updated and/or the new Monitoring Program(s) are disapproved, the Executive Officer of the Los Angeles Water Board will issue a monitoring directive for the Permittee(s).

Ventura County Permittees are required to submit a new IMP or CIMP or join an existing CIMP for Los Angeles Water Board approval. The TMDL Monitoring Plans listed in Table E-2 of the MRP, which are applicable to Ventura County Permittees, shall remain in effect until the Executive Officer of the Los Angeles Water Board approves the IMP(s) or CIMP(s). Approved TMDL Monitoring Plans by Watershed Management Area that were approved by the Executive Officer of the Los Angeles Water Board prior to the effective date of the Order are incorporated into the Order by reference. If the updated and/or the new Monitoring Program(s) are disapproved, the Executive Officer of the Los Angeles Water Board will issue a monitoring directive for the Permittee(s).

D. Monitoring Locations for Ventura County MS4 Permittees

1. Receiving Water Monitoring Location

The receiving water monitoring locations listed in Table E-3 of the MRP were in the previous 2010 Ventura County Permit. Ventura County Permittees shall include these locations in their IMP or CIMP and shall continue to monitor at these locations. Ventura County Permittees may propose additional and/or alternative receiving water monitoring locations in their IMP or CIMP. In addition, Ventura County Permittees shall propose a receiving water monitoring location in Malibu Creek subwatershed within Ventura County in their IMP or CIMP. The proposed location must be representative of the impacts from MS4 discharges. The 2010 Ventura County MS4 Permit did not have a receiving water station within Malibu Creek subwatershed. Therefore, to assess MS4 impacts on receiving water within the Malibu Creek subwatershed, the Los Angeles Water Board is adding a requirement to add a receiving water monitoring location for that subwatershed.

Mass Emission stations were designed to identify pollutant loads to the ocean, and long-term trends in pollutant concentrations, and characterize surface water quality in major receiving waters. The three Mass Emission stations are located in the major Ventura County watersheds: Calleguas Creek (ME-CC), Ventura River (ME-VR), and Santa Clara River (ME-SCR). Stations ME-CC and ME-VR were installed and monitored for the first time during the 2000/01 monitoring season, while ME-SCR was first installed and monitored during the 2001/02 monitoring season. High flows during January and February of 2005 resulted in the relocation of the ME-VR due to landslide activity and associated safety concerns to approximately one mile downstream from the historical ME-VR site to the Ojai Valley Sanitation District's Treatment Plant above the POTW outfall. The relocated station on the Ventura River (ME-VR2) was first monitored using portable sampling equipment in May 2005; and by September 2005 a permanent station was established. Stations ME-CC, ME-SCR, and ME-VR/ ME-VR2 were required to sample for 6 monitoring events per year, including a minimum of 2 dry weather samples during the permit term. The samples from stations ME-CC and ME-VR/ ME-VR2 are composed of flow-based composite and toxicity grab samples, and samples from station ME-SCR are composed of time-based composite samples and toxicity grab samples.

All three Mass Emission stations collected wet and dry weather water quality samples and analyzed for chronic toxicity.

2. Shoreline Monitoring Locations

The 2010 Ventura County MS4 Permit included various shoreline monitoring locations. The MRP of the Regional MS4 Permit also includes shoreline monitoring locations, which are listed in Table E-4 of the MRP. Note that some locations in the MRP are different from the previous Permit. These new monitoring sites were initially proposed by Ventura County MS4 Permittees in an email dated September 1, 2016 because they are considered "MS4 impacted sites." MS4 impacted sites are defined as beaches that are within 400 yards[322] of municipal storm drain outfalls (not including discharges from creeks, rivers, or estuaries). In a meeting with Ventura County on July 15, 2016 Los Angeles Water Board staff concurred with Ventura County that the proposed monitoring stations were appropriate except shoreline monitoring location 42000 (Ormond Beach at J Street Drain, now Tsumas Creek). This location is not included in the MRP because MS4 discharges do not reach the ocean most of the year but are captured by the Ormond Beach lagoon. The Ormond Beach lagoon only breaches to the ocean in large storm events, and when it does, the outlet can move hundreds of yards up and down the beach. Also note that Ventura County Permittees are now required to monitor only for fecal coliform (or E. coli)[323] and enterococcus consistent with the Ocean Plan Amendment for inclusion of Bacteria Provisions.

3. Stormwater Outfall-Based Monitoring Locations

The stormwater outfall monitoring locations listed in Table E-5 of the MRP were in the previous 2010 Ventura County Permit. Ventura County Permittees shall include these locations in their IMP or CIMP and continue to monitor at these locations. Ventura County Permittees may propose additional and/or alternative stormwater outfall monitoring locations in their IMP or CIMP. In addition, the Permittee(s) are required to propose an outfall monitoring location in Malibu Creek subwatershed within Ventura County in their IMP or CIMP. Monitoring at this proposed location is important to demonstrate compliance at the proposed receiving water location in Malibu Creek subwatershed within Ventura County.

E. Receiving Water Monitoring Requirements

General requirements are listed for all Permittees in this section. The requirements are similar to the previous 2012 Los Angeles County and the 2014 City of Long Beach MS4 Permits. Table E-6 of the MRP includes a suite of constituents that all Permittees are required to monitor. Ventura County Permittees were required to monitor for similar suite of constituents in their previous Attachment G of the 2010 Ventura County MS4 Permit. The purpose of receiving water monitoring is to measure the effects of stormwater and non-stormwater discharges from the MS4 to the receiving water, to identify water quality exceedances, to evaluate compliance with TMDL WLAs and receiving water limitations, and to evaluate whether water quality is improving, staying the same or declining.

[322] The 400-yard criterion is used by the Ventura County Environmental Health Department.

[323] Appendix III of the Ocean Plan authorizes regional water boards to substitute testing for fecal coliform with E. coli when there is sufficient information "to support comparability with approved methods." (Appendix III, Standard Operating Procedures, § 11, p. 92.)

1. Receiving Water Monitoring Stations

Receiving water monitoring is linked to outfall-based monitoring to gauge the effects of MS4 discharges on receiving water. Receiving water monitoring stations must be downstream of outfall monitoring stations.

The IMP, CIMP, or stand-alone receiving water monitoring program (in the case of a Board directed jurisdictional monitoring program) must include a map identifying proposed wet weather and dry weather monitoring stations. Receiving water monitoring stations may include historical mass emission stations, TMDL compliance monitoring stations, and other selected stations. The Permittee must describe how monitoring at the proposed locations will accurately characterize the effects of the discharges from the MS4 on the receiving water during both wet weather and dry weather, and meet other stated objectives. The proposed program must also state whether historical mass emission stations will continue to be monitored, and if not, provide sufficient justification for discontinuation of monitoring at the historical mass emissions stations, and describe the value of past receiving water monitoring data in performing trends analysis to assess whether water quality is improving, staying the same or declining.

2. Minimum Wet and Dry Receiving Water Monitoring Requirements

Receiving waters are to be monitored during both dry and wet weather conditions to assess the impact of non-stormwater and stormwater MS4 discharges on receiving waters. Wet weather and dry weather are defined in each watershed, consistent with the definitions in TMDLs approved within the watershed. In the previous 2012 Los Angeles County and the 2014 City of Long Beach MS4 permits, Permittees were required to conduct monitoring during three wet and two dry weather events. Ventura County Permittees were required to conduct monitoring during three wet and one dry weather events in their 2010 Permit. This Regional MS4 Permit retained the wet and dry weather definitions from the previous Los Angeles County and the City of Long Beach Permits. Wet weather receiving water monitoring is to commence as soon as possible (within 6 hours) of linked outfall monitoring to be reflective of potential impacts from MS4 discharges. At a minimum, the parameters to be monitored and the monitoring frequency are the same as those required for the linked outfalls.

3. Reporting Levels

The previous permits specified Minimum Levels (MLs) for monitoring stormwater constituents. MLs correspond to the approved analytical methods for reporting a sample result either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML represents the lowest quantifiable concentration in a sample based on the proper application of method-based analytical procedures and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied in the computation of the Reporting Level (RL). The Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is distinguishable from method blank results, as defined in 40 C.F.R. part 136, Appendix B.

In general, the MDL is lower than the RL (typically half the RL). In contrast to the previous permits where required MLs were specified, the Regional MS4 Permit no longer specifies required Reporting Levels (RLs) in the MRP. Rather, the Regional MS4 Permit specifies recommended Reporting Levels (RLs) in the MRP for monitoring stormwater constituents. This change from MLs to RLs allows the provision to be more user-friendly therefore streamlining Board staff data analysis efforts and related enforcement. Additionally, per Part II.H.1 of the MRP, Permittees are required to use the most sufficiently sensitive EPA-approved lab analytical methods available consistent with requirements in Attachment D of the Order (see, 40 CFR § 122.21(e)(3); 79 Fed. Reg. 49001 (Aug. 19, 2014).). Per Part II.H.7 of the MRP, recommended RLs are intended to serve as guidance for Permittees to choose the most sufficiently sensitive test method to attain RLs that are less than or equal to the lowest applicable water quality standard.

Information considered to incorporate recommended RLs in the MRP include previous permits' MLs, water quality goals[324], and other information provided by labs. In determining what is the lowest water quality goal, standards that apply to drinking water and water for agricultural use were not considered because they do not apply to stormwater. On August 5, 2016, Ventura County Permittees as a follow-up item to the July 15, 2016 meeting with Board staff, provided information on the lowest MDLs and RLs that their labs can achieve. However, this information was not considered because Ventura County Permittees stated in a follow-up email on June 9, 2020 that they included drinking water and non-40 CFR methods to try to get RLs low enough to meet the Permit MLs. They further stated that some of the stormwater methods (e.g. EPA 625) frequently require dilutions due to the turbid nature of stormwater, so they often end up with RLs higher than quoted due to matrix issues.

To solicit more information about lab methods for stormwater samples, Board staff also looked at information from ELAP certified labs in Los Angeles County. Using information from the State Board's Drinking Water Program[325], Board staff compiled a list of 14 ELAP certified labs within Los Angeles County. Board staff contacted each lab with a list of constituents in Table F-27 below and requested the labs to report their lowest MDL and RL values for stormwater samples along with the pertinent analytical method. Two of the 14 labs reported that they do not perform stormwater analysis. Of the twelve remaining labs, six labs did not respond. The other six labs[326] responded by submitting the requested information. However, while six labs responded with the requested information, not all of them analyze all the constituents listed in Table F-27 below.

Board staff used the lowest MDL and RL values received from these labs to populate Table F-27 below. When water quality goal or lab information was

[324] In this context, water quality goals include any objectives, criteria, targets, or limits within TMDLs, California Toxics Rule (CTR), Basin Plan, Ocean Plan, ISWEBE, and other water quality values found on the State Water Board Water Quality Goals searchable database at http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/search.shtml.

[325] The State Board provides this information using an interactive GIS map at: https://waterboards.maps.arcgis.com/apps/webappviewer/index.html?id=bd0bd8b42b1944058244337bd2a4ebfa

[326] Between April 2020 and June 2020, the six labs that submitted the requested information were Advanced Technology Laboratories, Alpha Scientific Corporation, American Scientific Laboratories, Enviro-Chem, Inc., Positive Lab Service, and Weck Laboratories, Inc.

unavailable, Board staff looked at RLs and MDLs in CEDEN data for the Surface Water Ambient Monitoring Program (SWAMP). For many constituents, the recommended RLs in the Regional MS4 Permit were set equal to the previous permit MLs. Where the water quality goal was lower than the previous permit ML, and a lab could achieve a lower RL using a more sensitive analytical method, the recommended RL was set equal to the lowest lab RL. However, for PCBs, the recommended RLs were set equal to the lowest water quality goals. The table below indicates the MLs in the previous permits, the recommended RLs included in the Regional MS4 Permit, and the basis for the recommended RL. Under "Basis for Recommended RL", "no change" indicates that the recommended RL was set equal to the ML from the previous permits. The term "Lowest WQ Goal" indicates that the recommended RL was set equal to the lowest water quality goal. The term "Lowest Lab RL" was set equal to the lowest recommended RL considering the lowest MDL a lab could achieve.

The previous MS4 Permits required Total Suspended Solids (TSS) monitoring but did not require Suspended Sediment Concentration (SSC) to be monitored as part of the table of constituents below. However, studies conducted by the United States Geological Survey (USGS) have found that the TSS procedure may not capture the full range of sediment particle sizes contributing to sediment impairments. [327] Therefore, both TSS and SSC are required to be monitored for in the MRP.

Also, note that dissolved phosphorus was replaced with orthophosphate as P (dissolved) in the MRP. In general, phosphorus exists in two main forms in water; dissolved (soluble) and particulate. Orthophosphate is the primary dissolved form of phosphorus that is more bioavailable to algae and aquatic plants.

With regards to PCBs, previous MS4 Permits required monitoring for Aroclors. Permittees in practice inconsistently monitored for Aroclors and/or congeners. Therefore, the Regional MS4 Permit MRP does not require Permittees to test for Aroclors (with subsequent reporting of total PCBs concentrations based on the sum of the Aroclor concentrations). Moreover, RLs for Aroclors are very high and detections are extremely rare. Additionally, the relevant total PCBs concentrations of concern for protection of human health and aquatic life are extremely low and detection of these low concentrations can only be achieved through using methods which analyze for individual PCB congeners (the various Aroclors were composed of mixes of multiple congeners in addition to other constituents at times). Thus, the MRP requires at a minimum analyzing all 55 PCBs congeners listed in Table A-7 of the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality Provisions. Furthermore, Permittees are encouraged to use a high resolution EPA-approved method which attains a reporting level of at least 0.00002 µg/L (20 pg/L) for ocean waters per congener, and 170 pg/L for non-ocean marine waters and freshwater per congener. Using a high-resolution EPA method along with analyzing for a minimum of 55 congeners will result in fewer non-detects, which will allow for the ability to conduct trend analyses of PCBs in the Region. In addition, higher resolution PCB monitoring using congeners will aid in "fingerprinting" potential sources through providing information on PCB homologs (those congeners with the same number of chlorines). The goal is to identify

[327] Gray, John et, al. US Geological Survey. Comparability of Suspended-Sediment and Total Suspended Sediment Data. August 2000.

sources and eventually eliminate this highly persistent legacy pollutant from the watersheds.

Table F-27. Rationale for Recommended Reporting Levels (RLs) in the Regional MS4 Permit[328]

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
CONVENTIONAL POLLUTANTS	**mg/L**	**mg/L**	**-**	**mg/L**	**mg/L**	**mg/L**	**-**
Oil and Grease	0.28 Enviro Chem	1 EnviroChem	EPA 1664A	-	5	5	No change
Total Phenols	0.00016 Weck	0.001 Weck	EPA 624.1	-	0.1	0.1	No change
Cyanide	0.0038 Weck	0.005 Weck	EPA 335.4	0.0052 / 0.001 (CTR - freshwater / saltwater)	0.005	0.005	No change
pH	0.1 Weck	0.1 Weck	SM 4500H+ B	-	0-14	0-14 units	No change
Temperature	-	-	-	-	N/A	N/A	No change
Dissolved Oxygen	0.1	0.5	SM 2580B	5 (Basin Plan)	Sensitivity to 5 mg/L	N/A	Field measurement

[328] Table Abbreviations: CTR = California Toxics Rule; EPA Rec. = National Recommended Water Quality Criteria; ISWEBE = Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE) Plan; TMDL = Total Maximum Daily Load; HH = Human Health; WQ = Water Quality.

[329] Water quality goals include any objectives, criteria, targets, or limits within TMDLs, California Toxics Rule (CTR), Basin Plan, Ocean Plan, ISWEBE, and other water quality values found on the State Water Board Water Quality Goals searchable database at http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/search.shtml.

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
	American Scientific Lab	American Scientific Lab					
BACTERIA	**MPN/100 ml**	**MPN/100 ml**	**-**	**MPN/100 ml**	**MPN/100 ml**	**MPN/100 ml**	**-**
Total coliform	1.8 Weck	1.8 Weck	SM 991B	1,000 (TMDL)	10,000	Not required	Removed requirement for consistency with ISWEBE & Ocean Plan
Enterococcus	1 Weck	1.8 Weck	SM 9230B	30 (ISWEBE & Ocean Plan)	104	30	Lowest WQ Goal
Fecal coliform	1.8 Weck	1.8 Weck	SM 9221E	200 (Bacteria Provisions– Ocean Plan)	400	200	Lowest WQ Goal
E. coli	1.8 Weck	1.8 Weck	SM 9221F	100 (Bacteria Provisions– ISWEBE)	235	100	Lowest WQ Goal
GENERAL	**mg/L**	**mg/L**	**-**	**mg/L**	**mg/L**	**mg/L**	**-**

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
Orthophosphate as P (Dissolved)	0.003 Weck	0.01 Weck	EPA 365.3	-	0.05 (formerly Dissolved Phosphorus)	0.05	No change
Total Phosphorus	0.0063 Advanced Tech Lab	0.02 Advanced Tech Lab	EPA 365.3	0.1 (TMDL)	0.05	0.05	No change
Turbidity	0.5 Positive Lab	0.5 Positive Lab	EPA 180.1	-	0.1 NTU	0.1 NTU	No change
Total Suspended Solids (TSS)	2 Alpha Scientific	4 Alpha Scientific	SM 2540D	-	2	2	No change
Total Dissolved Solids (TDS)	1 Positive Lab	5 Positive Lab	SM 2540E	250 (Basin Plan)	2	2	No change
Suspended Sediment Concentration (SSC)	1 Positive Lab	5 Positive Lab	ASTM D3977-97	-	Not required	5	Lowest lab RL
Volatile Suspended Solids	1 Positive Lab	5 Positive Lab	SM 2540E	-	2	Not required	Removed Requirement

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
Total Organic Carbon (TOC)	0.073 Weck	0.1 Weck	SM 5310B	-	1	1	No change
Dissolved Organic Carbon (DOC)	0.016 Weck	0.1 Weck	SM 5310B	-	Not required	0.2	SWAMP RL (MDL is 0.1 using EPA 415.1M)
Total Petroleum Hydrocarbon	1.53 Advanced Tech Lab	2 Advanced Tech Lab	EPA 1664A	-	5	5	No change
Biochemical Oxygen Demand (BOD)	2 Weck	2 Weck	EPA 5210B	-	2	2	No change
Chemical Oxygen Demand (COD)	2.43 Enviro Chem	5 EnviroChem	SM 5220D	-	20-900	20	Low end of previous permit ML range
Total Ammonia-Nitrogen	0.016 Advanced Tech Lab	0.03 Advanced Tech Lab	ASTM D1426-08A	0.1 (Basin Plan)	0.1	0.1	No change
Total Kjeldahl Nitrogen	0.018 Weck	0.1 Weck	EPA 351.2	-	0.1	0.1	No change
Nitrate+Nitrite	0.01 Enviro Chem	0.05 EnviroChem	SM 4500-NO3-E	5 (TMDL)	0.1	0.1	No change

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
Alkalinity	0.031 Enviro Chem	1 EnviroChem	SM 2320B	-	2	2	No change
Specific Conductance	0.005 Positive Lab	0.005 Positive Lab	EPA 120.1	-	1 umho/cm	1 umho/cm	No change
Total Hardness	0.016 Weck	0.1 Weck	EPA 200.7	-	2	2	No change
MBAS	0.01 Positive Lab	0.02 Positive Lab	SM 5540C	0.5 (Basin Plan)	0.5	0.5	No change
Chloride	0.2 Positive Lab	0.4 Positive Lab	EPA 300.0	10 (Basin Plan)	2	2	No change
Fluoride	0.009 Weck	0.1 Weck	EPA 300.0	2 (Basin Plan-MCL)	0.1	0.1	No change
Methyl tertiary butyl ether (MTBE)	0.00026 Advanced Tech Lab	0.0005 Advanced Tech Lab	EPA 624.1	0.013 (Basin Plan-MCL)	1	0.013	Lowest WQ Goal
Perchlorate	0.00109 Advanced Tech Lab	0.002 Advanced Tech Lab	EPA 314.0	0.006 (Basin Plan-MCL)	0.004	0.006	Lowest WQ Goal
METALS (Dissolved & Total)	**µg/L**	**µg/L**	**-**	**µg/L**	**µg/L**	**µg/L**	**-**

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
Aluminum	1.3 Weck	5 Weck	EPA 200.8	1000 (Basin Plan-MCL) / 87 (EPA rec. – freshwater)	100	87	Lowest WQ Goal
Antimony	0.045 Weck	0.5 Weck	EPA 200.8	6 (Basin Plan-MCL) / 5.6 (EPA Rec. – HH)	0.5	0.5	No change
Arsenic	0.074 Weck	0.4 Weck	EPA 200.8	8 (Ocean Plan) / 0.018 (EPA Rec. – HH)	1	1	No change
Beryllium	0.033 Weck	0.1 Weck	EPA 200.8	0.033 (Ocean Plan)	0.5	0.5	No change
Cadmium	0.041 Weck	0.1 Weck	EPA 200.8	1 (Ocean Plan)	0.25	0.25	No change
Chromium (total)	0.035 Weck	0.2 Weck	EPA 200.8	2 (Ocean Plan)	0.5	0.5	No change
Chromium (Hexavalent)	0.0079 Weck	0.02 Weck	EPA 218.6	2 (Ocean Plan)	5	2	Lowest WQ Goal
Copper	0.13 Weck	0.5 Weck	EPA 200.8	>9 (CTR-freshwater	0.5	0.5	No change

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
				hardness-based)			
Iron	1.1 Weck	10 Weck	EPA 200.7	300 (EPA Rec.- HH)	100	100	No change
Lead	0.031 Weck	0.2 Weck	EPA 200.8	>2.5 (CTR-freshwater hardness-based)	0.5	0.5	No change
Mercury	0.017 Weck	0.05 Weck	EPA 245.1	0.04 (Ocean Plan)	0.5	0.04	Lowest WQ Goal
Nickel	0.045 Weck	0.8 Weck	EPA 200.8	>52 (CTR-freshwater hardness-based)	1	11.88	No change
Selenium	0.14 Weck	0.4 Weck	EPA 200.8	5.0 (TMDL & CTR-freshwater) / 1.5 (EPA Rec. – freshwater)	1	1	No change
Silver	0.062 Weck	0.2 Weck	EPA 200.8	>3.4 (CTR-freshwater hardness-based)	0.25	0.25	No change

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
Thallium	0.014 Weck	0.2 Weck	EPA 200.8	1.7 (CTR – HH) / 0.24 (EPA Rec. – HH)	1	0.24	Lowest WQ Goal
Zinc	0.94 Weck	5 Weck	EPA 200.8	20 (Ocean Plan)	1	1	No change
SEMIVOLATILE ORGANIC COMPOUNDS - ACIDS	**µg/L**	**µg/L**	**-**	**µg/L**	**µg/L**	**µg/L**	**-**
2-Chlorophenol	0.28 Weck	1 Weck	EPA 625.1	1 (Ocean Plan) / 0.1 (EPA Rec. – HH)	2	1	WQ Goal
4-Chloro-3-methylphenol (3-Methyl-4-Chlorophenol)	0.23 Weck	1 Weck	EPA 625.1	1 (Ocean Plan)	1	1	No change
2,4-Dichlorophenol	0.26 Weck	1 Weck	EPA 625.1	1 (Ocean Plan) / 0.3 (EPA Rec. – HH)	1	1	WQ Goal
2,4-Dimethylphenol	0.3 Weck	1 Weck	EPA 625.1	30 (Ocean Plan)	2	2	No change
2,4-Dinitrophenol	0.4	1	8270C	4 (Ocean Plan)	5	4	Lowest WQ Goal

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
	American Scientific	American Scientific					
2-Nitrophenol	0.26 Weck	1 Weck	EPA 625.1	30 (Ocean Plan)	10	10	No change
4-Nitrophenol	0.5 American Scientific	1 American Scientific	8270C	30 (Ocean Plan)	5	5	No change
Pentachlorophenol	0.2 American Scientific	1 American Scientific	8270C	0.28 (CTR – HH) / 0.03 (EPA Rec. – HH)	2	1	Lowest lab RL
Phenol	0.16 Weck	1 Weck	EPA 625.1	30 (Ocean Plan)	1	1	No change
2,4,6-Trichlorophenol	0.22 Weck	1 Weck	EPA 625.1	0.29 (Ocean Plan)	10	1	Lowest lab RL
SEMIVOLATILE ORGANIC COMPOUNDS –BASE / NEUTRAL	**µg/L**	**µg/L**	**-**	**µg/L**	**µg/L**	**µg/L**	**-**
Acenaphthene	0.38 Weck	1 Weck	EPA 625.1	1,200 (CTR-HH) / 20 (EPA Rec. – HH)	1	1	No change

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Acenaphthylene	0.17 Weck	1 Weck	EPA 625.1	0.0088 (Ocean Plan)	2	1	Lowest lab RL
Anthracene	0.12 Weck	1 Weck	EPA 625.1	0.0088 (Ocean Plan)	2	1	Lowest lab RL
Benzidine	1.4 Weck	10 Weck	EPA 625.1	0.000069 (Ocean Plan)	5	5	No Change
1,2 Benzanthracene (Benzo(a)anthracene)	0.19 Weck	1 Weck	EPA 625.1	0.0044 (CTR-HH) / 0.0012 (EPA Rec. – HH)	5	1	Lowest lab RL
Benzo(a)pyrene	0.39 Weck	1 Weck	EPA 625.1	0.0044 (CTR-HH) / 0.00012 (EPA Rec. – HH)	2	1	Lowest lab RL
Benzo(g,h,i)perylene (1,12-benzoperylene)	0.42 Weck	2 Weck	EPA 625.1	0.0088 (Ocean Plan)	5	2	Lowest lab RL
3,4 Benzofluoranthene (benzo[b]fluoranthene)	0.46 Weck	1 Weck	EPA 625.1	0.0044 (CTR-HH) /	10	1	Lowest lab RL

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				0.0012 (EPA Rec. – HH)			
Benzo(k)fluoranthene	0.22 Weck	1 Weck	EPA 625.1	0.0044 (CTR-HH)	2	1	Lowest lab RL
Bis(2-chloroethoxy) methane	0.25 Weck	1 Weck	EPA 625.1	4.4 (Ocean Plan)	5	4.4	Lowest WQ Goal
Bis(2-chloroisopropyl) ether	0.38 Weck	1 Weck	EPA 625.1	122 (EPA Rec. – freshwater)	2	2	No change
Bis(2-chloroethyl) ether	0.27 Weck	1 Weck	EPA 625.1	0.031 (CTR – HH) / 0.03 (EPA Rec. HH)	1	1	No change
Bis(2-ethylhexyl) phthalate	1.69 Advanced Tech Lab	5 Advanced Tech Lab	EPA 625.1	1.8 (CTR – HH) / 0.32 (EPA Rec. – HH)	5	5	No change
4-Bromophenyl phenyl ether	0.36 Weck	1 Weck	EPA 625.1	122 (EPA Rec. - freshwater toxicity chronic)	5	5	No change
Butyl benzyl phthalate (Benzyl butyl phthalate)	0.18 Weck	1 Weck	EPA 625.1	3,000 (CTR – HH) / 0.1	10	1	Lowest lab RL

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				(EPA Rec. – HH)			
2-Chloroethyl vinyl ether	1 Positive Lab	1 Positive Lab	EPA 625.1	-	1	1	No change
2-Chloronaphthalene	0.45 Weck	1 Weck	EPA 625.1	1,700 (CTR - HH) / 7.5 (EPA Rec. – saltwater toxicity acute)	10	7.5	Lowest WQ Goal
4-Chlorophenyl phenyl ether	0.41 Weck	1 Weck	EPA 625.1	-	5	5	No change
Chrysene	0.19 Weck	1 Weck	EPA 625.1	0.0044 (CTR -HH)	5	1	Lowest lab RL
Dibenzo(a,h)anthracene	0.5 Positive Lab	1 Positive Lab	EPA 625.1	0.0044 (CTR -HH) / 0.00012 (EPA Rec. – HH)	0.1	0.1	No change
1,3-Dichlorobenzene	0.42 Weck	1 Weck	EPA 625.1	400 (CTR – HH) / 7 (EPA Rec. – HH)	1	1	No change

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1,4-Dichlorobenzene	0.48 Weck	1 Weck	EPA 625.1	5 (Basin Plan-MCL)	1	1	No change
1,2-Dichlorobenzene	0.46 Weck	1 Weck	EPA 625.1	600 (Basin Plan-MCL) / 50 (EPA Rec. – freshwater toxicity other)	1	1	No change
3,3'-Dichlorobenzidine	0.99 Weck	5 Weck	EPA 625.1	0.0081 (Ocean Plan)	5	5	No change
Diethyl phthalate	0.15 Weck	1 Weck	EPA 625.1	23,000 (CTR -HH) / 3 (EPA Rec. – freshwater toxicity chronic)	2	2	No change
Dimethyl phthalate	0.18 Weck	1 Weck	EPA 625.1	313,000 (CTR – HH) / 3 (EPA Rec. – freshwater	2	2	No change

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
				toxicity chronic)			
di-n-Butyl phthalate	0.1 Weck	1 Weck	EPA 625.1	2,700 (CTR – HH) 3 (EPA Rec. – freshwater toxicity chronic)	10	3	Lowest WQ Goal
2,4-Dinitrotoluene	0.18 Weck	1 Weck	EPA 625.1	0.11 (CTR – HH) / 0.049 (EPA Rec. – HH)	5	1	Lowest lab RL
2,6-Dinitrotoluene	0.27 Weck	1 Weck	EPA 625.1	230 (EPA Rec. – freshwater toxicity chronic)	5	5	No change
4,6 Dinitro-2-methylphenol (2-Methyl-4,6-dinitrophenol)	1.4 Weck	5 Weck	EPA 625.1	13.4 (CTR – HH) / 2 (EPA Rec. – HH)	5	5	No change
1,2-Diphenylhydrazine	0.3 Weck	1 Weck	EPA 625.1	0.04 (CTR – HH) / 0.03 (EPA Rec. – HH)	1	1	No change

CONSTITUENTS	Lowest Lab MDL in ELAP Certified Los Angeles County Labs	Lowest Lab RL in ELAP Certified Los Angeles County Labs	Lab Method for ELAP Certified Los Angeles County Labs	Lowest Water Quality Goal[329]	Previous Permits MLs	Regional MS4 Permit Recommended RLs	Basis for Recommended RL
di-n-Octyl phthalate	0.46 Weck	1 Weck	EPA 625.1	3 (EPA Rec. – freshwater toxicity chronic)	10	3	Lowest WQ Goal
Fluoranthene	0.08 Weck	1 Weck	EPA 625.1	15 (Ocean Plan)	0.05	0.05	No change
Fluorene	0.35 Weck	1 Weck	EPA 625.1	0.0088 (Ocean Plan)	0.1	0.1	No change
Hexachlorobenzene	0.49 Weck	1 Weck	EPA 625.1	0.00021 (Ocean Plan) / 0.000079 (EPA Rec. – HH)	1	1	No change
Hexachlorobutadiene	0.47 Weck	1 Weck	EPA 625.1	0.44 (CTR - HH) / 0.01 (EPA Rec. – HH)	1	1	No change
Hexachloro-cyclopentadiene	0.98 Weck	1 Weck	EPA 625.1	50 (Basin Plan-MCL) / 1 (EPA Rec. – HH)	5	1	Lowest WQ Goal

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Hexachloroethane	0.5 Weck	1 Weck	EPA 625.1	1.9 (CTR – HH) / 0.1 EPA Rec. – HH)	1	1	No change
Indeno(1,2,3-c,d)pyrene	0.5 Positive Lab	1 Positive Lab	EPA 625.1	0.0044 (CTR-HH) / 0.0012 (EPA Rec. - HH)	0.05	0.05	No change
Isophorone	0.21 Weck	1 Weck	EPA 625.1	8.4 (CTR – HH)	1	1	No change
Naphthalene	0.49 Weck	1 Weck	EPA 625.1	620 (EPA Rec. – freshwater toxicity chronic)	0.2	0.2	No change
Nitrobenzene	0.36 Weck	1 Weck	EPA 625.1	4.9 (Ocean Plan)	1	1	No change
N-Nitrosodimethyl amine	0.5 Weck	1 Weck	EPA 625.1	0.00069 (CTR – HH)	5	1	Lowest lab RL
N-Nitrosodiphenyl amine	0.19 Weck	1 Weck	EPA 625.1	2.5 (Ocean Plan)	1	1	No change
N-Nitrosodi-n-propyl amine	0.26 Weck	1 Weck	EPA 625.1	0.005 (CTR - HH)	5	1	Lowest lab RL

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Phenanthrene	0.32 Weck	1 Weck	EPA 625.1	0.0088 (Ocean Plan)	0.05	0.05	No change
Pyrene	0.25 Weck	1 Weck	EPA 625.1	0.0088 (Ocean Plan)	0.05	0.05	No change
1,2,4-Trichlorobenzene	0.49 Weck	1 Weck	EPA 625.1	0.071 (EPA Rec.- HH)	1	1	No change
CHLORINATED PESTICIDES	**µg/L**	**µg/L**	**-**	**µg/L**	**µg/L**	**µg/L**	**-**
Aldrin	0.004 Positive Lab	0.005 Positive Lab	EPA 608.3	0.000022 (Ocean Plan) / 0.00000077 (EPA Rec. – HH)	0.005	0.005	No change
alpha-BHC	0.002 Positive Lab	0.01 Positive Lab	EPA 608.3	0.0039 (CTR -HH)	0.01	0.01	No change
beta-BHC	0.004 Positive Lab	0.01 Positive Lab	EPA 608.3	0.004 (Ocean Plan for HCH)	0.005	0.005	No change

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delta-BHC	0.004 Positive Lab	0.01 Positive Lab	EPA 608.3	0.004 (Ocean Plan for HCH)	0.005	0.005	No change
gamma-BHC (lindane)	0.003 Positive Lab	0.01 Positive Lab	EPA 608.3	0.004 (Ocean Plan for HCH)	0.02	0.01	Lowest lab RL
alpha-chlordane	0.0029 Advanced Tech Lab	0.025 Advanced Tech Lab	EPA 608.3	0.000023 (Ocean Plan for total chlordane) / 0.00059 (TMDL)	0.1	0.025	Lowest lab RL
gamma-chlordane	0.0014 Advanced Tech Lab	0.025 Advanced Tech Lab	EPA 608.3	0.000023 (Ocean Plan for total chlordane) / 0.00059 (TMDL)	0.1	0.025	Lowest lab RL
4,4'-DDD	0.007 Positive Lab	0.025 Positive Lab	EPA 608.3	0.00017 (Ocean Plan for DDTs) / 0.00012 (EPA Rec. – HH) /	0.05	0.025	Lowest lab RL

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				0.00059 (TMDL)			
4,4'-DDE	0.007 Positive Lab	0.025 Positive Lab	EPA 608.3	0.00017 (Ocean Plan for DDTs) / 0.00059 (TMDL) / 0.000018 (EPA Rec. – HH)	0.05	0.025	Lowest lab RL
4,4'-DDT	0.0025 Positive Lab	0.005 Positive Lab	EPA 608.3	0.00017 (Ocean Plan for DDTs) / 0.00003 (EPA Rec. – HH)	0.01	0.005	Lowest lab RL
Dieldrin	0.0025 Positive Lab	0.005 Positive Lab	EPA 608.3	0.00004 (Ocean Plan) / 0.0000012 (EPA Rec. – HH)	0.01	0.005	Lowest lab RL
alpha-Endosulfan	0.0032	0.025 Positive Lab	EPA 608.3	0.0087 (CTR – saltwater)	0.02	0.02	No change

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	Advanced Tech Lab						
beta-Endosulfan	0.0025 Positive Lab	0.01 Positive Lab	EPA 608.3	0.0087 (CTR – saltwater)	0.01	0.01	No change
Endosulfan sulfate	0.002 Positive Lab	0.01 Positive Lab	EPA 608.3	0.009 (Ocean Plan for endosulfan) / 0.0087 (EPA Rec. – saltwater)	0.05	0.01	Lowest lab RL
Endrin	0.0025 Positive Lab	0.005 Positive Lab	EPA 608.3	0.002 (Ocean Plan)	0.01	0.005	Lowest lab RL
Endrin aldehyde	0.003 Positive Lab	0.01 Positive Lab	EPA 608.3	0.76 (CTR - HH)	0.01	0.01	No change
Heptachlor	0.001 Positive Lab	0.01 Positive Lab	EPA 608.3	0.00005 (Ocean Plan) / 0.0000059 (EPA Rec. – HH)	0.01	0.01	No change

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Heptachlor Epoxide	0.002 Positive Lab	0.01 Positive Lab	EPA 608.3	0.00002 (Ocean Plan) / 0.000032 (EPA Rec. – HH)	0.01	0.01	No change
Toxaphene	0.2 Positive Lab	0.5 Positive Lab	EPA 608.3	0.0002 (CTR – freshwater)	0.5	0.5	No change
POLYCHLORINATED BIPHENYLS	**µg/L**	**µg/L**	**-**	**µg/L**	**µg/L**	**pg/L**	**-**
Congeners	-	-	-	0.000019 (Ocean Plan) / 0.00017 (CTR – HH) / 0.000064 (EPA Rec. – HH)	Not required	20 (ocean waters) / 170 (non-ocean marine waters & freshwater)	Lowest WQ Goals
Aroclor-1016	0.15 Positive Lab	0.25 Positive Lab	EPA 608.3	0.000019 (Ocean Plan) / 0.00017 (CTR – HH)	0.5	Not required	Removed requirement

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				/ 0.000064 (EPA Rec. – HH)			
Aroclor-1221	0.15 Positive Lab	0.25 Positive Lab	EPA 608.3	0.000019 (Ocean Plan) / 0.00017 (CTR – HH) / 0.000064 (EPA Rec. – HH)	0.5	Not required	Removed requirement
Aroclor-1232	0.15 Positive Lab	0.25 Positive Lab	EPA 608.3	0.000019 (Ocean Plan) / 0.00017 (CTR – HH) / 0.000064 (EPA Rec. – HH)	0.5	Not required	Removed requirement
Aroclor-1242	0.15 Positive Lab	0.25 Positive Lab	EPA 608.3	0.000019 (Ocean Plan) / 0.00017 (CTR – HH)	0.5	Not required	Removed requirement

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				/ 0.000064 (EPA Rec. – HH)			
Aroclor-1248	0.15 Positive Lab	0.25 Positive Lab	EPA 608.3	0.000019 (Ocean Plan) / 0.00017 (CTR – HH) / 0.000064 (EPA Rec. – HH)	0.5	Not required	Removed requirement
Aroclor-1254	0.15 Positive Lab	0.25 Positive Lab	EPA 608.3	0.000019 (Ocean Plan) / 0.00017 (CTR – HH) / 0.000064 (EPA Rec. – HH)	0.5	Not required	Removed requirement
Aroclor-1260	0.15 Positive Lab	0.25 Positive Lab	EPA 608.3	0.000019 (Ocean Plan) / 0.00017 (CTR – HH)	0.5	Not required	Removed requirement

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				/ 0.000064 (EPA Rec. – HH)			
ORGANOPHOSPHATE PESTICIDES	**µg/L**	**µg/L**	**-**	**µg/L**	**µg/L**	**µg/L**	**-**
Atrazine	0.034 Weck	0.1 Weck	EPA 525.2	1 (Basin Plan-MCL)	2	1	Lowest WQ Goal
Chlorpyrifos	0.0069 Weck	0.01 Weck	EPA 625.1M	0.014 (TMDL) / 0.009 (EPA Rec. – saltwater)	0.05	0.01	Lowest lab RL
Cyanazine	0.024 Weck	0.1 Weck	EPA 525.2	-	2	2	No change
Diazinon	0.0052 Weck	0.01 Weck	EPA 625.1M	0.1 (TMDL) / 0.05 (EPA Rec. - freshwater)	0.01	0.01	No change
Malathion	0.0076 Weck	0.01 Weck	EPA 625.1M	0.1 (EPA Rec. - freshwater)	1	0.1	Lowest WQ Goal
Prometryn	0.036 Weck	0.1 Weck	EPA 525.2	-	2	2	No change

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Simazine	0.015 Weck	0.1 Weck	EPA 525.2	4 (Basin Plan-MCL)	2	2	No change
HERBICIDES	**µg/L**	**µg/L**	**-**	**µg/L**	**µg/L**	**µg/L**	**-**
2,4-D	0.14 Weck	0.4 Weck	EPA 515.4	70 (Basin Plan-MCL)	10	10	No change
Glyphosate	1.8 Weck	5 Weck	EPA 547	700 (Basin Plan-MCL)	5	5	No change
Dacthal (DCPA)	0.053 Weck	0.1 Weck	EPA 515.4	0.008 (EPA Rec. – HH)	Not required	0.1	Lowest lab RL
2,4,5-TP (SILVEX)	0.046 Weck	0.2 Weck	EPA 515.4	50 (Basin Plan-MCL)	0.5	0.5	No change
PYRETHROIDS	**µg/L**	**µg/L**	**-**	**µg/L**	**µg/L**	**µg/L**	
Bifenthrin	0.00079 Weck	0.002 Weck	EPA 8270M	-	Not required	0.002	Lowest lab RL
Cyfluthrin	0.00083 Weck	0.002 Weck	EPA 8270M	-	Not required	0.002	Lowest lab RL
Cypermethrin	0.00066 Weck	0.002 Weck	EPA 8270M	0.002 (EPA Rec. - freshwater)	Not required	0.002	Lowest WQ Goal
Esfenvalerate	0.00098 Weck	0.002 Weck	EPA 8270M	-	Not required	0.002	Lowest lab RL
Lambda-cyhalothrin	0.0012 Weck	0.002 Weck	EPA 8270M	-	Not required	0.002	Lowest lab RL

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Permethrin	0.005 Weck	0.005 Weck	EPA 8270M	0.001 (EPA Rec.- saltwater)	Not required	0.005	Lowest lab RL
FIPRINOL AND ITS DEGRADATES	**µg/L**	**µg/L**	**-**	**µg/L**	**µg/L**	**µg/L**	**-**
Fipronil	0.002 Weck	0.002 Weck	EPA 8270M	-	Not required	0.002	Lowest lab RL
Fiprinol Sulfide	0.002 Weck	0.002 Weck	EPA 8270M	-	Not required	0.002	Lowest lab RL
Fiprinol Sulfone	0.002 Weck	0.002 Weck	EPA 8270M	-	Not required	0.002	Lowest lab RL
Fiprinol Desulfinyl	0.002 Weck	0.002 Weck	EPA 8270M	-	Not required	0.002	Lowest lab RL
NEONICOTINOIDS	**µg/L**	**µg/L**	**-**	**µg/L**	**µg/L**	**µg/L**	**-**
Imidacloprid	0.092 Weck	0.5 Weck	EPA 538	-	Not required	0.5	Lowest lab RL

F. Stormwater Outfall-Based Monitoring Requirements

The primary purpose of outfall monitoring is to characterize the stormwater MS4 discharges from each Permittee's drainages within each subwatershed. Outfall-based monitoring is also conducted to assess compliance with WQBELs and receiving water limitations. Factors that may impact stormwater runoff volume include percent effective impervious cover (connected to the storm drain system), vegetation type, soil compaction and soil permeability.

Stormwater outfall monitoring is linked to receiving water monitoring (see Part XII.E of this Fact Sheet). Monitoring must be conducted at least three times per year during qualifying rain events, including the first rain event of the year and conducted concurrently (within 6 hours) before the commencement of the downstream receiving water monitoring. The MRP retained similar wet and dry weather definitions from the previous 2012 Los Angeles County and the 2014 City of Long Beach MS4 Permits. Note that the previous Ventura County Permit had a different wet and dry weather definition in comparison to the 2012 Los Angeles County and 2014 City of Long Beach MS4 Permits. However, to accommodate the differences between the previous permits, the Regional MS4 Permit MRP includes a provision allowing Permittees, if they choose, to propose their own weather condition definition for Executive Officer approval. This flexibility is necessary to accommodate the geographic and climate differences between Los Angeles County and Ventura County.

Monitoring is conducted for pollutants of concern including all pollutants with assigned WQBELs. Parameters to be monitored during wet weather include: flow, pollutants subject to a TMDL applicable to the receiving water, and pollutants listed on the Clean Water Act Section 303(d) list for the receiving water or a downstream receiving water. Flow is necessary to calculate pollutant loading.

For water bodies listed on the Clean Water Act section 303(d) list as being impaired due to sedimentation, siltation or turbidity, suspended sediment concentration (SSC) must be analyzed. Total suspended solids (TSS) and hardness must be analyzed when metals are monitored. TSS is the parameter most often required in NPDES permits to measure suspended solids.

For freshwater, the following field measurements are also required: pH, dissolved oxygen, temperature, and specific conductivity. Temperature and pH are parameters impacting the effect of pollutants in freshwater (i.e., ammonia toxicity is dependent on pH and temperature). Temperature and dissolved oxygen are interdependent and fundamental to supporting aquatic life beneficial uses. Specific conductivity is a parameter important to assessing potential threats to MUN and freshwater aquatic life beneficial uses.

Note that the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permits included requirements to monitor stormwater discharges for exceedances of municipal action levels (MALs). These requirements are discontinued in the Regional MS4 Permit. At this time, the Los Angeles Water Board has concluded that TMDL requirements and a robust monitoring program provide sufficient criteria to assess the impact of stormwater discharges and therefore, MALs are unnecessary.

Aquatic toxicity monitoring is required in the receiving water once per year during wet weather conditions. Aquatic toxicity is a direct measure of toxicity and integrates the effects of multiple synergistic effects of known and unidentified pollutants. When

samples are found to be toxic, a Toxicity Identification Evaluation (TIE) must be performed to identify the pollutants causing toxicity. If a toxicant or class of toxicants that is identified through a TIE conducted during wet weather at a receiving water monitoring location, then, Permittees must analyze for the toxicant(s) during the next scheduled sampling event in the discharge from the outfall(s) upstream of the receiving water location.

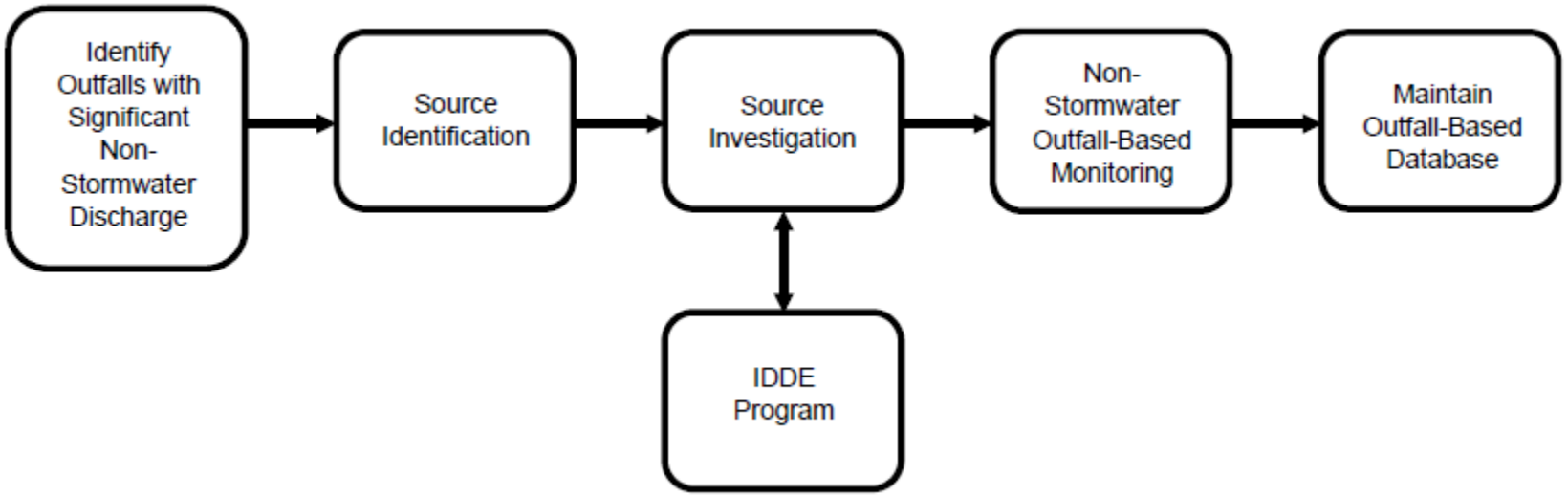
For many analytical procedures, 40 CFR Part 136 specifies that grab samples must be collected for pH, temperature, dissolved oxygen, and coliform bacteria. The MRP also allows the Permittees to collect specific conductivity and turbidity samples using grab sampling. Federal regulations specify that grab samples must be taken for the abovementioned parameters because they evaluate characteristics that may change during the time necessary for compositing. A grab sample is a single sample collected at a particular time and place that represents the composition of the stormwater only at that time and place. When the quality and flow of the stormwater being sampled is not likely to change over time, a grab sample is appropriate. A composite sample is a collection of individual samples obtained at regular intervals, usually based upon time or flow volume. A composite sample is desirable when the material being sampled varies significantly over time either as a result of flow or quality changes. Flow-proportional compositing is usually preferred when effluent flow volume varies appreciably over time.

Sampling requirements, including methods for collecting flow-weighted composite samples, are consistent with provisions set forth in 40 CFR section 122.21(g)(7), which establish specific requirements for collecting flow-weighted composite samples. Per these provisions, the aliquots for flow-weighted composite samples must be collected during a representative storm for the first 3 hours, or for the duration of the storm event if it is less than 3 hours long.

G. Non-Stormwater Outfall-Based Screening and Monitoring Requirements

The Non-Stormwater Outfall-Based Monitoring Program is a step-wise framework for identifying illicit discharges and connections and assessing whether Permittees are effectively prohibiting non-stormwater discharges to the MS4. Under previous MS4 Permits for the 2012 Los Angeles County and the 2014 City of Long Beach, Permittees developed a Non-Stormwater Outfall-Based Screening and Monitoring Program. The requirements in the Regional MS4 Permit allow Permittees to build upon past efforts to advance the program and focus monitoring on the most significant areas of non-stormwater quality concerns. Los Angeles County Permittees will continue to implement the existing program, making modifications to address new permit requirements. Ventura County Permittees are required to submit an IMP/CIMP and explain how the non-stormwater outfall-based screening and monitoring requirements in the MRP will be implemented. Figure F-1 below illustrates the general process for the Non-Stormwater Outfall-Based Screening and Monitoring Program. The previous permit for Ventura County addressed the need to eliminate illicit discharges through the Illicit Connection and Illicit Discharges program and the Dry Weather Monitoring Program. Several elements of these programs are similar to the Regional MS4 Permit requirements and in many cases Ventura County Permittees can integrate the new requirements into their existing efforts. The Regional MS4 Permit Non-Stormwater Screening and Monitoring Program requirements establish consistency among all Permittees.

Figure F-1. Non-Stormwater Outfall-Based Screening and Monitoring Program General Process



1. Objectives

The objectives listed in Part VII.A of the MRP are based on the federal requirements listed above, including but not limited to Clean Water Act section 402(p)(3)(B)(ii) and 40 CFR section 122.26(d)(2)(i)(F). The purpose of the Non-Stormwater Outfall-Based Screening and Monitoring Program is to identify and investigate where necessary non-stormwater discharges including illicit discharges, non-stormwater discharges conditionally exempt from the prohibition, and discharges that are issued a separate discharge permit. Program objectives are listed to provide Permittees with guide points as they design and implement their program. Many of the objectives from the previous 2012 Los Angeles County and the 2014 City of Long Beach MS4 Permits are retained but have been updated to build upon past efforts of Permittees. Although the previous permit for Ventura County did not list objectives for analogous programs (Dry-weather Monitoring Program and Illicit Discharge and Detection Program), objectives in Part VII.A of the MRP reflect elements of Ventura County Permittees' existing programs.

2. Screening and Monitoring Program Procedures and Requirements

Parts VII.B through E of the MRP implement federal requirements, including those in 40 CFR section 122.26(d)(2)(i)(F), which require inspection, surveillance, and monitoring to demonstrate compliance with permit conditions. The Non-Stormwater Outfall-Based Screening and Monitoring Program addresses the permit condition prohibiting the discharge of non-stormwater discharges through the MS4 to receiving waters based on Clean Water Act section 402(p)(3)(B)(ii). Requirements in Parts VII.B through E of the MRP are a series of systematic procedures for characterizing non-stormwater discharges and eliminating illicit discharges to ensure compliance with the effective prohibition. The Non-Stormwater Outfall-Based Screening and Monitoring Program is intended to maximize the use of the Permittee's resources by integrating the screening and monitoring process into existing or planned IMP/CIMP efforts of Los Angeles County Permittees including the City of Long Beach. It is also intended to rely on the illicit discharge source investigation and elimination requirements and MS4 mapping requirements for Los Angeles County Permittees including the City of Long Beach, and Ventura County Permittees. Finally, the Regional MS4 Permit builds upon dry-weather monitoring requirements in the previous Ventura County permit. Figure F-1 depicts the process of implementing Non-Stormwater Outfall-Based Screening and Monitoring Program elements.

To implement broader federal requirements for non-stormwater outfall-based screening and monitoring, the Regional MS4 Permit includes clear, specific, measurable requirements to achieve the objectives in Part VII.A of the MRP. U.S. EPA demonstrates examples of clear, specific, measurable requirements to control non-stormwater discharges in the *MS4 Permit Improvement Guide*.[330] This guidance document contains examples of field screening, prioritizing source investigations, mapping (similar to inventory requirements in the Regional MS4 Permit), and monitoring. In addition, the *MS4 Program Evaluation Guidance Document*, describes important dry weather monitoring program components such as a database for tracking dry-weather outfall inspections and prioritized source

[330] U.S. EPA. 2010. *MS4 Permit Improvement Guide*. Office of Water, Office of Wastewater Management, Water Permits Division. April. 2010. p. 24-34.

identification of dry-weather discharges.[331] The *Compendium of MS4 Permitting Approaches*[332] cites permit examples for inventory, prioritization for screening, and monitoring of non-stormwater discharges. Moreover, U.S. EPA issued MS4 permits to the Middle Rio Grande Area and Washington D.C. that require field screening for prioritized areas, comparable to the Regional Permit.[333]

As the monitored activity is dry weather MS4 discharges, the Regional MS4 Permit defines conditions of dry weather. The 0.1-inch requirement is consistent with U.S. EPA's determination of a "measurable" storm event, as indicated in 40 CFR section 122.26(d)(2)(iii)(2) and the NPDES Storm Water Sampling Guidance Document.[334] MS4 permits commonly delineate wet and dry weather at 0.1 inch with 72 hours as a precedent dry period.[335]

3. Changes from the Previous Permits

Most of the requirements in Parts VII.B through E of the MRP are continued from previous 2012 Los Angeles County, 2014 City of Long Beach, and 2010 Ventura County MS4 permits. As described above in this Fact Sheet, the Los Angeles Water Board has determined that these requirements are necessary to comply with federal requirements. The previous 2010 Ventura County permit had a different framework than the Regional MS4 Permit requirements; therefore, some of the specific requirements in Parts VII.B through E of the MRP will require the Ventura County Permittees to perform new or different tasks. However, Ventura County Permittees as explained in subpart a below, have already performed activities under their previous permit requirements that will allow them to tailor their existing efforts to satisfy Regional MS4 Permit requirements. To synchronize programs among the three groups of Permittees, Parts VII.B through E of the MRP include separate schedules for Los Angeles County (including City of Long Beach) Permittees versus Ventura County Permittees, but the requirements are the same. Other changes from the three previous permits are intended to allow the program to progress beyond earlier screening efforts. The most notable differences are highlighted below.

a. Non-Stormwater Outfall-Based Screening and Monitoring Program

The previous 2010 Ventura County Permit addressed non-stormwater discharges through the IDDE program and through the dry-weather monitoring program. The IDDE program requirements required mapping and inventorying of outfalls and field screening for illicit connections to the storm drain system. Additionally, the previous 2010 Ventura County Permit's dry weather monitoring program required Permittees to select outfall sites for dry weather

[331] U.S. EPA. 2007. MS4 Program Evaluation Guidance. Office of Water, Office of Wastewater Management, Water Permits Division. January 2007. pp.34, 89.

[332] Compendium of MS4 Permitting Examples, Part 1: Six Minimum Control Measures. Office of Wastewater Management, Water Permits Division. November 2016. 810-U-16-001. Pp. 12-14.

[333] NPDES Permit No. NMR04A000 issued to Middle Rio Grande Watershed, effective December 22, 2014. p. 40; NPDES permit (*IDS-027561)* issued to Ada County Highway District, Boise State University, City of Boise, City of Garden City. Drainage District #3, and the Idaho Transportation Department District #3. Effective February 1, 2013. pp. 27-29.

[334] U.S. EPA. 1992. NPDES Storm Water Sampling Guidance Document. EPA-833-B-92-001. Office of Water. July 1992. P. 15.

[335] For example, NPDES Permit No. CAS612008, issued to San Francisco Bay Region (Order No. R2-2015-0049, issued November 19, 2015, p. 125) and NPDES Permit No. DC0000221 issued to the Government of the District of Columbia, as modified November 9, 2012, p. 35).

monitoring based on certain criteria. Monitoring consisted of analytical testing, field measurements and observations at the selected outfall stations. The main difference between the Regional MS4 Permit and the previous Ventura County permit is that the Ventura County Permit focused on screening for illicit connections under the IDDE program, whereas the Regional MS4 Permit MRP, Part VII provides a system of requirements for all non-stormwater discharges. Depending on the nature of the illicit discharge information collected, Ventura County Permittees may have addressed the plan requirements in Part VII of the MRP. Therefore, the Regional MS4 Permit requires Ventura County Permittees to develop a Non-Stormwater Outfall-Based Screening and Monitoring Program in their IMP or CIMP that complies with requirements in Parts VII.B through E of the MRP. In this manner, Ventura County Permittees can build upon and advance their existing non-stormwater screening efforts to better control discharges of pollutants to the MS4.

For Los Angeles County Permittees, the non-stormwater program remains largely the same except that this Permit allows to further streamline the requirements.

b. Screening of Outfalls with Significant Non-Stormwater Discharge

Part VII.B of the MRP requires identification of significant non-stormwater MS4 discharges. Ventura County Permittees have already collected information under the IDDE program, which will enable them to distinguish significant non-stormwater discharges. This is a necessary step in prioritizing non-stormwater discharges for source identification.

The requirements in Part VII.B of the MRP are retained from the previous permits for Los Angeles County and the City of Long Beach. Part VII.B of the MRP establishes criteria for the Permittees to consider when delineating “significant” non-stormwater discharges and provides flexibility for other factors to be considered. Evidence of ongoing potential illegal dumping or illicit connections must be used along with other criteria based on field and/or laboratory measurements for defining a significant non-stormwater discharge. Where the Permittee uses other factors, they must provide a definition or a criterion for how a significant non-stormwater discharge will be determined. In particular, the thresholds for field measurements must be specified, (e.g., flow greater than 10 gallons per minute) and/or water quality data (e.g., bacteria counts exceeding a certain level) that will be used to determine whether the non-stormwater discharge is significant.

c. Source Investigation for Outfalls with Significant Non-Stormwater Discharge

Source investigation is ongoing among the Los Angeles County and City of Long Beach Permittees. This is an enhancement for Ventura County Permittees that is a necessary step in eliminating non-stormwater discharges and/or preventing the discharge of pollutants to the MS4. The step is necessary to focus efforts on non-stormwater dischargers with the greatest potential to affect water quality. Once prioritized, Permittees initiate source investigation efforts required under Part VII.C of the MRP.

The requirements in Part VII.C of the MRP are retained from the previous 2012 Los Angeles County and the 2014 City of Long Beach MS4 Permits. The

previous 2010 Permit for Ventura County included similar requirements in the IDDE program, with some differences in wording. Source investigation from Non-Stormwater Outfall-Based Monitoring Program is conducted simultaneously with IDDE procedures in Part VIII.I of the Order so that sources may be tracked from both an upstream and downstream direction.

Per Part VII.D.2 of the MRP, Permittees within Los Angeles County shall determine if re-screening is necessary for any of the previously screened outfalls with no significant non-stormwater discharge. Rather than requiring re-screening of all outfalls, the Regional MS4 Permit requires a review of dry weather receiving water monitoring data downstream of the outfalls and other relevant information to determine if re-screening is necessary for any of the previously screened outfalls that did not have significant non-stormwater discharge.

Part VII.D.1 of the MRP provides the schedule for Ventura County Permittees to screen their outfalls for significant non-stormwater discharges. This is shorter than what was provided in the previous 2012 Los Angeles County and 2014 City of Long Beach MS4 Permits where they had 3 years from the effective dates of the Orders respectively, to conduct source investigations for no less than 25% of the outfalls in the inventory and 5 years from the effective date of the aforementioned Orders to conduct source investigations for 100% of the outfalls in the inventory. However, the shorter interim schedule (i.e., 3 years for 50% of the outfalls) for Ventura County Permittees in comparison to Los Angeles County Permittees in the previous permits (i.e., 3 years for 25% of the outfalls) is reasonable considering the often isolated MS4 networks for each city in Ventura County and the significantly less number of outfalls in comparison to LA County Permittees.

d. Non-Stormwater Outfall-Based Monitoring

Part VII.E.2 of the MRP allows Los Angeles County Permittees 90 days after completing non-stormwater source investigation to begin monitoring the non-stormwater discharge. These 90 days is the same as previously allowed in the 2012 Los Angeles County and 2014 City of Long Beach MS4 Permits.

Non-stormwater monitoring for Los Angeles County and City of Long Beach Permittees is decreased from previous permits to allow the Permittees flexibility in directing program resources to where they are most effective. Previous requirements in the 2012 Los Angeles County and 2014 City of Long Beach MS4 permits required sampling at established frequencies unless granted alternative frequencies by the Executive Officer of the Los Angeles Water Board. The Regional MS4 Permit recognizes that in some instances, non-stormwater that has been fully characterized and investigated for illicit discharges remains static in quantity and quality, such that repeated sampling and analyses does not produce useful information. Nevertheless, illicit discharges may recur at any time. To provide monitoring relief while still being proactive in protecting water quality, the Regional MS4 Permit allows the Permittee to record field observations (e.g., visual, presence of odor, etc.), in lieu of analytical testing, for non-stormwater discharges that are: 1) to waters not subject to a TMDL, 2) have been fully characterized and investigated for illicit discharges, and 3) do not cause or contribute to exceedances of water quality standards. This approach is consistent with recommendations in the

EPA MS4 improvement Guide,[336] which states that for dry weather flows, permit writers "may consider allowing permittees the flexibility to look for indicators of an illicit discharge before conducting water quality tests due to baseline flow (baseflow, groundwater flow, irrigation return flows) in certain areas. In these cases, permit writers could require that sensory indicators (i.e., odor, color, turbidity, and floatables) be evaluated."

The previous 2010 permit for Ventura County required the Principal Permittee to select (based on certain criteria) and monitor five outfalls during dry weather at a frequency of once per year. The Regional MS4 Permit allows the Ventura County Permittees to assess their significant non-stormwater discharges and create a prioritization for conducting source identification.

Non-stormwater outfall-based monitoring requirements are also consistent with 40 CFR section 122.41(j)(1), which requires "samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity". The Regional MS4 Permit requires grab samples be collected for non-stormwater outfall discharges. This is a change from the 2012 Los Angeles County and 2014 City of Long Beach MS4 Permits which required composite samples. Dry weather outfall flows are likely to be consistent in quality such that a grab sample would be representative of the discharge and would require less effort and/or equipment. The *EPA Permit Writer's Manual* discusses the appropriateness of grab versus composite samples, stating "Grab samples are appropriate when the flow and characteristics of the wastestream being sampled are relatively constant."[337] In addition, the 2015 *EPA Multi-sector General Permit for Industrial Storm water Discharges Associated with Industrial Activity* requires grab samples for compliance monitoring, with the exception of some specific receiving waters.[338]

Previous permits for Los Angeles County and the City of Long Beach established Non-stormwater Action Levels (NALs) for non-stormwater to gauge potential impact to water quality and to identify the potential need for additional controls for non-stormwater discharges. The Regional MS4 Permit discontinues the use of action levels. During the previous permit term, the majority of Los Angeles County Permittees addressed non-stormwater outfall-based screening and monitoring through WMPs and EWMPs using means other than action levels. Based on practical knowledge gained through implementing the previous 2012 Los Angeles County and 2014 City of Long Beach MS4 permits, the Los Angeles Water Board believes that at this time, TMDL requirements and WQBELs provide sufficient criteria to assess the impact of non-stormwater discharges. This is also consistent with the Ventura Countywide Stormwater Quality Management Program's[339] reapplication

[336] U.S. EPA. 2010. *MS4 Permit Improvement Guide*. Office of Water, Office of Wastewater Management, Water Permits Division. April. 2010. p. 32.

[337] U.S. EPA. 2010. NPDES Permit Writer's Manual. EPA-833-K-10-001. Office of Wastewater Management, Water Permits Division. September 2010. P. 8-7.

[338] U.S. EPA. Multi-Sector General Permit for Industrial Storm water Discharges Associated with Industrial Activity. June 4, 2015.

[339] The Ventura Countywide Stormwater Quality Management Program is collective term for Ventura County Permittees which include the Ventura County Watershed Protection District, the County of Ventura, and the cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, Santa Paula, Simi Valley, Thousand Oaks, and Ventura.

package which states that it "does not support the inclusion of NALs within the next Ventura County MS4 Permit."[340]

H. TMDL Monitoring

Like other monitoring and reporting requirements, TMDL-related monitoring is also necessary to implement federal law. The Clean Water Act and its implementing regulations require monitoring and reporting as a major component of *all* NPDES permits, not just MS4 permits. As a condition of receiving a NPDES permit, a permittee agrees to monitor its discharges to ensure compliance with the permit's terms.[341] Here, this would include any WQBELs or receiving water limitations based on TMDLs.

Further, MS4 permits issued by U.S. EPA support the conclusion that TMDL-related monitoring is a federal requirement for MS4 permits. For example, the District of Columbia MS4 Permit states under Section 5, Monitoring and Assessment of Controls, that the monitoring must meet several objectives, including "any additional necessary monitoring for purposes of source identification and wasteload allocation tracking. This strategy must align with the Consolidated TMDL Implementation Plan….monitoring must be adequate to determine if relevant WLAs are being attained within specified timeframes in order to make modifications to relevant management programs, as necessary."[342]

Also note that other local agencies also have TMDL monitoring requirements. The MS4 permit issued to Caltrans requires that Caltrans conduct effluent and receiving water monitoring and implement a "Comprehensive TMDL Monitoring Plan."[343] The Industrial General Storm Water Permit requires industrial facilities to collect samples of their discharge and analyze them for various parameters, including "[a]dditional applicable industrial parameters related to receiving waters with 303(d) listed impairments or approved TMDLs…"[344] The NPDES permit for stormwater discharges from Sentinel Peak Resources (Inglewood Oil Field) includes effluent limitations based on TMDLs and corresponding effluent and receiving water monitoring requirements.[345]

[340] Ventura Countywide Stormwater Quality Management Program. Report of Waste Discharge. January 2015.

[341] CWA § 402(a)(1) ("the Administrator may, after opportunity for public hearing, issue a permit for the discharge of any pollutant, or combination of pollutants, notwithstanding section 1311(a) of this title, upon condition that such discharge will meet either (A) all applicable requirements under sections 1311, 1312, 1316, 1317, 1318, and 1343 of this title, or (B) prior to the taking of necessary implementing actions relating to all such requirements, such conditions as the Administrator determines are necessary to carry out the provisions of this chapter.")

[342] U.S. EPA, Permit for District of Columbia Municipal Separate Storm Sewer System, Modified Permit No. DC0000221 (Oct. 7, 2011, mod. Nov. 9, 2012), Part 5, pp. 32-38.

[343] State Water Board, Order 2012-0011-DWQ (as amended by Orders WQ 2014-0006-EXEC, WQ 2014-0077-DWQ, and WQ 2015-0036-EXEC), NPDES Statewide Storm Water Permit, Waste Discharge Requirements for State of California, Department of Transportation, Finding 40, Part E.2.c, and Attachment IV, Section III.A.1.

[344] State Water Board, Order No. 2014-0057-DWQ, NPDES General Permit for Storm Water Discharges Associated with Industrial Activities, Part XI.B.6.e, pp. 39-40.

[345] Los Angeles Water Board, Order No. R4-2018-0020, NPDES Permit for Sentinel Peak Resources California, LLC Inglewood Oil Field, pp. E-6 to E-9, E-13 to E-15.

I. Outfall-Based Database

The requirements in the MRP with regards to maintaining an outfall-based database are similar to the previous 2012 Los Angeles County, the 2014 City of Long Beach and 2010 Ventura County Permits.

Per Part VIII.A of the MRP, the Permittee must continue to maintain a map or geographic database of storm drains, channels and outfalls to aid in the development of the outfall monitoring plan and to assist the Los Angeles Water Board in reviewing the logic and adequacy of the number and location of outfalls selected for monitoring. The map/database must include the storm drain network, receiving waters, other surface waters that may impact hydrology, including dams and dry weather diversions. In addition, the map must identify the location and identifying code for each major outfall within the Permittee's jurisdiction. The map must include overlays including jurisdictional boundaries, subwatershed boundaries and storm drain outfall catchment boundaries. The map must distinguish between storm drain catchment drainage areas and subwatershed drainage areas, as these may differ. In addition, the map must include overlays displaying land use, impervious area and effective impervious area (if available). To the extent known, outfalls that convey significant non-stormwater discharges per Part VII.B of the MRP, must also be identified on the map, and the map must be updated annually to include the total list of known outfalls conveying significant flow of non-stormwater discharge.

J. Aquatic Toxicity Monitoring Methods

Aquatic toxicity monitoring is required in receiving waters during both wet and dry weather conditions to determine whether designated beneficial uses are fully supported. Further, Attachment E requires additional monitoring at MS4 outfalls where aquatic toxicity is present above a certain effect level in downstream receiving waters to determine whether MS4 discharges are causing or contributing to the aquatic toxicity. In this situation, outfall monitoring must either entail monitoring for specific pollutants identified in a TIE in the downstream receiving water, or for aquatic toxicity itself, where the specific pollutants could not be identified through the TIE conducted on the downstream receiving water.

Based on the stated goals of the Clean Water Act, the U.S. EPA and individual states implement three approaches to monitoring water quality. These approaches include chemical-specific monitoring, toxicity testing, and bioassessments (USEPA 1991a).[346] Each of the three approaches has distinct advantages and all three work together to ensure that the physical, chemical, and biological integrity of our waters are protected. Water quality objectives have been developed for only a limited universe of chemicals. For mixtures of chemicals with unknown interactions or for chemicals having no chemical-specific objectives, the sole use of chemical-specific objectives to safeguard aquatic resources would not ensure adequate protection. Aquatic life in southern California coastal watersheds are often exposed to nearly 100% effluent from wastewater treatment plants, urban runoff, or stormwater; therefore, toxicity testing and bioassessments are also critical components for monitoring programs as they offer a more direct and thorough confirmation of biological impacts. The primary advantage of using the toxicity testing approach is that this tool can be used to assess toxic effects (acute and chronic) of all the chemicals in aqueous samples of effluent, receiving water,

[346] U.S. EPA. 1991a. Technical support document for water quality-based toxics control. Office of Water. Washington, DC. EPA/505/2-90-001.

or stormwater. This allows the cumulative effect of the aqueous mixture to be evaluated, rather than the toxic responses to individual chemicals.[347]

For freshwater, the MRP requires Permittee(s) to conduct chronic and acute toxicity tests on water samples, by methods specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136) and *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012, 2002; Table IA, 40 CFR Part 136), or a more recent edition.

The Los Angeles Water Board has traditionally requested stormwater dischargers to use a list of three organisms – algae, crustacean, and fish - (specifically, Selananstrum capricomutum, Ceriodaphnia dubia, and Pimephales promelas) to screen for the most sensitive species to be used during toxicity testing. This list has been in use for many decades; however, Selanastrum was removed from the screening list due to its almost complete lack of sensitivity and two additional species were added to the MRP: the freshwater amphipod Hyalella azteca and the midge Chironomus dilutes. This is consistent with the approach being used at the San Francisco Regional Water Board where they have also noted that several emerging groups of pesticides, including fipronil, neonicotinoids, and pyrethroids, are increasingly dominating pesticide applications in urban and agricultural environments and the older list of test organisms do not respond to most of these pesticides. Now that urban uses of diazinon have been banned for a decade, highly toxic pyrethroids are more commonly found, and Hyalella azteca is the most sensitive species to that class of chemicals, while Chironomus dilutus is most sensitive to fipronil, which is being observed in urban waters in the State. Pimephales tended to be most sensitive to ammonia in the past and while ammonia may still at times occur for various reasons, detections at toxic concentrations of the chemical are reduced. Ceriodaphnia is most sensitive to organophosphate pesticides, such as diazinon, which is also less frequently detected at toxic concentrations due to its ban and subsequent reduced use.

During the first year of the permit term, to determine the most sensitive test species, the Permittee(s) shall conduct two wet weather and two dry weather toxicity tests with the species listed in the MRP for freshwater and non-ocean marine waters, as appropriate[348]. After this screening period, the results of the test species sensitivity screening shall be included in the IMP or CIMP and subsequent monitoring shall be conducted using the most sensitive test species. Sensitive test species determinations shall also consider the most sensitive test species used for proximal receiving water monitoring. The MRP requirements for the most sensitive test species screening are consistent with the previous 2010 Ventura County Permit's aquatic toxicity requirements. The previous 2012 Los Angeles County and the 2014 City of Long Beach MS4 Permits allowed the Permittees to use a sensitive test species that had already been determined, or if there was prior knowledge of potential toxicant(s), and a test species was sensitive to such toxicant(s). However, due to inconclusive results for toxicity testing, the MRP requires screening for the most sensitive species instead of allowing Permittees to choose species from existing studies.

For non-ocean marine waters, the MRP requires the Permittee(s) to conduct the chronic toxicity test in accordance with U.S. EPA's *Short-Term Methods for Estimating the*

[347] U.S. EPA, EPA Regions 8, 9, and 10 Toxicity Training Tool, January 2010.
[348] Southern California Coastal Water Research Project, Stormwater Monitoring Coalition: Toxicity Testing Laboratory Guidance Document- SCCWRP Technical Report 956, December 2016.

Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms, First Edition, August 1995, (EPA/600/R-95/136), or *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, Third Edition, October 2002, (EPA/821-R-02-014), or a more recent edition. In contrast to the previous MS4 permits, the Regional MS4 Permit no longer requires ocean water aquatic toxicity monitoring because, in light of the other ocean monitoring requirements, and evaluation of data collected under prior permits, aquatic toxicity monitoring was not providing significant added value and the Board understands that aquatic toxicity monitoring is costly. All monitoring included in the Regional MS4 Permit, however, will result in appropriate data needed to evaluate water quality impacts of the discharges and ensure that beneficial uses are protected. Aquatic toxicity monitoring remains in non-marine ocean waters and inland estuarine and surface waters, which gives the Board the information it needs to evaluate toxicity. (*See In the Matter of the Petitions of the City of Oceanside, Fallbrook Public Utilities Dist. and the Southern California Alliance of Publicly Owned Treatment Works,* State Water Board Order WQ 2021-0005 at pp. 12, 13.)

Furthermore, the toxicity component of the MRP includes toxicity identification procedures so that pollutants that are causing or contributing to acute or chronic effects in aquatic life exposed to these waters can be identified and others can be discounted. TIEs are needed to identify the culprit constituents to be used to prioritize management actions. Where toxicants are identified in a MS4 discharge, the MRP requires a Toxicity Reduction Plan (TRE).

TRE development and implementation is directly tied to the integrated monitoring programs and watershed management program, to ensure that management actions and follow-up monitoring are implemented when problems are identified. Permittees are encouraged to coordinate TREs with concurrent TMDLs where overlap exists. If a TMDL is being developed or implemented for an identified toxic pollutant, much of the work necessary to meet the objectives of a TRE may already be underway, and information and implementation measures should be shared.

Overall, the toxicity monitoring program will assess the impact of stormwater and non-stormwater discharges on the overall quality of aquatic fauna and flora and implement measures to ensure that those impacts are eliminated or reduced. As stated previously, chemical monitoring does not necessarily reveal the totality of impacts of stormwater on aquatic life and habitat-related beneficial uses of water bodies. Therefore, toxicity requirements are a necessary component of the MS4 monitoring program.

The Los Angeles Water Board provided clarification and recommendations to Permittees for the monitoring programs under the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit regarding aquatic toxicity monitoring, particularly pertaining to the requirement to conduct chronic and acute toxicity tests in dry and wet weather conditions and requirements for conducting a TIE and outfall monitoring. Further clarification was necessary regarding requirements for follow-up monitoring when aquatic toxicity is present in downstream receiving waters. A memo dated August 7, 2015 was sent to all Los Angeles County MS4 Permittees including the City of Long Beach to provide additional clarification and applies to all monitoring directives and IMPs and CIMPs (in Los Angeles County) developed pursuant to Part VI.B of the previous 2012 Los Angeles County MS4 Permit and Part VII.B of the previous 2014 City of Long Beach MS4 Permit. This guidance is provided in Attachment G of the Order and thus now applies to all Permittees including Ventura County.

K. Regional Studies

The regional studies are optional in this Permit, and are similar to the previous Los Angeles County, the City of Long Beach and Ventura County Permits. Permittees are encouraged to continue to participate in the two regional studies listed below.

1. Southern California Storm Water Monitoring Coalition Watershed Monitoring Program

a. The Southern California Storm Water Monitoring Coalition (SMC) Regional Watershed Monitoring Program was initiated in 2008. This program is conducted in collaboration with the Southern California Coastal Water Research Project (SCCWRP), State Water Board's Surface Water Ambient Monitoring Program (SWAMP), three Southern California Regional Water Quality Control Boards (Los Angeles, Santa Ana, and San Diego) and several county stormwater agencies (Los Angeles, Ventura, Orange, Riverside, San Bernardino and San Diego). SCCWRP acts as the facilitator to organize the program and completes data analysis and report preparation.

b. The SMC monitoring program seeks to coordinate and leverage existing monitoring efforts to produce regional estimates of the condition of streams and rivers, improve data comparability and quality assurance, and maximize data availability, while conserving monitoring expenditures. The primary goal of this program is to implement an ongoing, large-scale regional monitoring program for southern California's coastal streams and rivers.

c. A comprehensive program was designed by the SMC, in which each participating group assesses its local watersheds and then contributes their portion to the overall regional assessment. Types of data being collected include water quality, physical habitat and riparian condition, and biological communities, including benthic invertebrates and algae. Sampling occurs in 17 coastal southern California watersheds between Ventura to the Tijuana Rivers. Sites are allocated each year based on current study design.

2. Southern California Bight Project

The Southern California Bight Project (SCBP) is an ongoing marine monitoring collaboration that was started in 2008 between the Southern California Coastal Water Research Project (SCCWRP) and nearly 100 participating organizations that examines how human activities have affected the health of 1,539 square miles of Southern California's coastal waters. The objective is to investigate the condition of marine ecosystems across both time and space.

L. Special Studies

The special studies included in Part XI of the MRP are optional for all Permittees in Los Angeles and Ventura counties. It is encouraged that Permittees consider conducting these special studies. The results of these studies may support future Basin Plan amendments to revise TMDLs and/or water quality standards.

M. Reporting Requirement Objectives

Part XII of the MRP outlines objectives for the Order's reporting requirements. These objectives are consistent with the previous MS4 permits.

N. Standard Monitoring and Reporting Provisions

Part XIII of the MRP and Attachment D of the Order includes standard monitoring and reporting provisions. These provisions are consistent with the previous MS4 permits.

O. Reporting Requirements

All reporting requirements in Attachments D, E, H, and I, were carried over from the previous MS4 permits.

1. Program Reports

The Annual Report requirement was required in the previous 2012 Los Angeles County, 2014 City of Long Beach and 2010 Ventura County MS4 Permits, per federal regulations. The Reporting Forms provide summary information to the Los Angeles Water Board on each Permittee's implementation of the minimum control measures (MCMs); participation in one or more Watershed Management Programs; the impact of each Permittee's stormwater and non-stormwater discharges on the receiving water; each Permittee's compliance with receiving water limitations and water quality based effluent limitations; and the effectiveness of each Permittee(s) control measures in reducing discharges of pollutants from the MS4 to receiving waters.

In addition, the Reporting Forms allow the Los Angeles Water Board to assess whether the quality of MS4 discharges and the health of receiving waters is improving, staying the same, or declining as a result of watershed management program efforts, and/or TMDL implementation measures, or other control measures and whether changes in water quality can be attributed to pollutant controls imposed on new development, re-development, or retrofit projects. The Reporting Forms provide Permittees a forum to discuss the effectiveness of its past and ongoing control measure efforts and to convey its plans for future control measures as well as a way to present data and conclusions in a transparent manner so as to allow review and understanding by the general public. Overall, the Reporting Forms allow Permittees to focus reporting efforts on watershed condition, water quality assessment, and an evaluation of the effectiveness of control measures.

Permittees must use the Reporting Forms contained in Attachment H of the Order (i.e., Annual Report Form and Watershed Management Program Progress Report Form). As attachments to the Annual Report Form, Permittees are also required to report on compliance with Trash TMDLs and Trash Discharge Prohibitions using the Trash TMDL Reporting Form and/or Trash Discharge Prohibition Reporting Form contained in Attachment I of the Order or a revised form approved by the Los Angeles Water Board. This option is included so that Permittees are not constrained to the reporting structure of the forms in Attachment I of the Order. Regardless of the reporting format, Permittees are required to report on all the elements within Attachment H and I of the Order.

In the previous permits, Ventura County Permittees developed their own Annual Report form while Los Angeles County Permittees including the City of Long Beach initially used Attachment U-4 (Individual Annual Report Form) from the 2001 Los Angeles County MS4 Permit for reporting on permit implementation. For the 2015/2016 reporting year and onwards, the Los Angeles Water Board provided Los Angeles County Permittees including the City of Long Beach an Individual Form and a Watershed Form for annual reporting. Although the Watershed Form was to

be filled out for Permittees participating in a Watershed Management Program, the Individual Form also contained overlapping questions that pertained to Permittees participating in a Watershed Management Program. To eliminate overlaps and simplify reporting, the Annual Report Forms provided by the Los Angeles Water Board have been revised for the Regional MS4 Permit. These forms still contain all of the elements in the previous forms, but questions have been refined to match the requirements of the Order. Additionally, Permittees participating in a Watershed Management Program will now report on the majority of their Watershed Management Program activities in a separate Watershed Management Program Progress Report form (see below).

The Program Reports shall be submitted electronically by the deadlines specified in Part XIV of the MRP. This is per 40 CFR Part 127 that requires Permittees to electronically report information. According to this requirement, Permittees are required to submit their reports through the Storm Water Multiple Application and Report Tracking System (SMARTS), which is compliant with U.S. EPA's Cross-Media Electronic Reporting Rule (40 CFR Part 3). However, until SMARTS is able to accommodate and accept all Permittee submittals, Permittees are required to submit their Program Reports and semi-annual monitoring data to the Los Angeles Water Board electronically via CDs, DVDs, flash drives, email, etc.

2. Watershed Management Program Progress Report

The Watershed Management Program Progress Report Form, contained in Attachment H, serves as reporting requirements for Watershed Management Program implementation and shall be completed by each Watershed Management Program. The items in this report are directly based on Annual Report requirements included in the previous 2012 Los Angeles County and 2014 City of Long Beach MS4 Permits and are refinements of reporting items contained in the previous Watershed Form used by Los Angeles County Permittees including the City of Long Beach.

Additionally, Part XIV.A.2 of Attachment E has been modified to include a requirement that each Permittee participating in a Watershed Management Program provide the Watershed Management Program Progress Report to the public, including through direct outreach and on its website or a website specifically dedicated for the Watershed Management Program group. This change was made to ensure greater accountability and transparency. The U.S. EPA similarly requires Permittees to post their progress reports on their websites (e.g., Washington, D.C. MS4 NPDES Permit, NPDES Permit No. DC0000221).

3. Monitoring Report

Part XIV.B of the MRP requires Permittees to submit a Monitoring Report twice a year that includes monitoring results and certification. Moreover, Permittees are required to annually submit summary of sampling events, a summary of exceedances of receiving water limitations and WQBELs, QA/QC, and a summary of aquatic toxicity monitoring. The Monitoring Report includes monitoring-related reporting requirements contained in the previous 2012 Los Angeles County, 2014 City of Long Beach, and 2010 Ventura County MS4 Permits.

Permittees must submit monitoring results for sampling events per the schedule indicated in the MRP. This schedule is the same as the 2012 Los Angeles County

and 2014 City of Long Beach MS4 Permits. The Order's reporting schedules are a refinement of the due dates in these previous permits.

In the 2012 Los Angeles County and 2014 City of Long Beach MS4 Permits, receiving water and outfall monitoring results were required to be submitted to the Los Angeles Water Board semi-annually. However, these permits did not identify an actual date for submittal. During permit implementation, Los Angeles County Permittees were directed by the Los Angeles Water Board to submit monitoring results for sampling events for the period, January 1 to June 30, one hundred and sixty-eight (168) days later on December 15; and monitoring results for sampling events for the period, July 1 to December 31, one hundred and sixty-six (166) days later on June 15.

In the 2010 Ventura County MS4 Permit, Permittees were required to submit monitoring data electronically to the Los Angeles Water Board: (1) 90 days from the sample collection date for mass emissions, major outfalls, aquatic toxicity, and TMDL compliance monitoring; and (2) 30 days from the sample collection date for beach water quality monitoring.

The Monitoring Report in the MRP includes a summary of the sampling events that is consistent with the requirements in the previous 2012 Los Angeles County, 2014 City of Long Beach and 2010 Ventura County MS4 Permits. This information will allow the Permittees and the Los Angeles Water Board to evaluate the effects of differing storm events in terms of stormwater runoff volume and duration and in-stream effects.

4. Receiving Water Limitations Compliance Report

The Receiving Water Limitations Compliance Report was required in the previous Los Angeles County, City of Long Beach and Ventura County MS4 Permits within the Receiving Water Limitations Provisions and is being carried over to the Regional MS4 Permit. Permittees participating in a Watershed Management Program are exempt from the requirement to submit this report under the conditions specified in Part XIV.C.4 of the MRP.

P. TMDL Reporting

Part XV of the MRP includes TMDL reporting requirements in the Basin Plan similar to Part XIX in the MRP of the 2012 Los Angeles County and 2014 City of Long Beach Permits. Additionally, it includes clarifying provisions to address unique situations where a Permittee has no MS4 infrastructure or MS4 discharge to waterbodies addressed in a TMDL.

XIII. CALIFORNIA WATER CODE SECTION 13241

California Water Code section 13241 requires the Los Angeles Water Board to consider certain factors when establishing water quality objectives, including:

(a) Past, present, and probable future beneficial uses of water.

(b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.

(d) Economic considerations.

(e) The need for developing housing within the region.

(f) The need to develop and use recycled water.

The Los Angeles Water Board is not establishing any water quality objectives in the Order. However, California Water Code section 13263 requires the Board to take into consideration the provisions of section 13241 in prescribing waste discharge requirements, when such requirements are more stringent than what federal law requires.

In *City of Burbank v. State Water Resources Control Board* (2005) 35 Cal.4th 613, the California Supreme Court considered whether a regional water board must consider the provisions of section 13241 when issuing waste discharge requirements that serve as a NPDES permit by taking into account the costs a permittee will incur in complying with the permit 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." (*Id*. at p. 627.) The Court ruled that regional water boards may not consider the factors in section 13241, including economics, to justify imposing pollutant restriction that are less stringent than the applicable federal law requires. (*Id*. at pp. 618, 626-627 ["[Water Code s]ection 13377 specifies that [] discharge permits issued by California's regional boards must meet the federal standards set by federal law. In effect, section 13377 forbids a regional board's consideration of 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…Because section 13263 cannot authorize what federal law forbids, it cannot authorize a regional board, when issuing a [] discharge permit, to use compliance costs to justify pollutant restrictions that do not comply with federal clean water standards"].) However, when the pollutant restrictions in an NPDES permit are more stringent than federal law requires, California Water Code section 13263 requires that the Water Boards consider the factors described in section 13241 as they apply to those specific restrictions.

The Los Angeles Water Board finds that each of the requirements in the Order are not more stringent than what federal law requires for the control of MS4 discharges of pollutants in the Los Angeles Region. The Board makes additional findings with respect to specific program areas throughout the Fact Sheet. Clean Water Act section 402(p)(3)(B) requires MS4 permits to include requirements to effectively prohibit non-stormwater discharges through the MS4 to receiving waters, as well as "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." The permitting agency, be it the Los Angeles Water Board or U.S. EPA, must therefore include provisions when it finds it is appropriate to do so and to exercise its discretion to determine what permit conditions are necessary to control pollutants in a specific geographic area.

MS4 discharges in the Los Angeles Region are a continuing and significant source of pollutants to receiving waters, many of them impaired. As such, the Board finds that inclusion of all of the requirements in the Order are necessary and appropriate to control MS4 discharges in the Los Angeles Region including, but not limited to, requirements for non-stormwater discharges, technology and water quality-based effluent limitations, TMDLs, receiving water limitations, stormwater management program minimum control measures, and monitoring and reporting to ensure that the requirements of the Order are being met. See Parts IV, V, VI, VII, IX, and XII, in particular. To the extent the requirements in the Order may be more specific or detailed than those enumerated in federal regulations under 40 CFR § 122.26 or in U.S. EPA guidance, the requirements have been designed to be consistent with and within the federal statutory mandates described in Clean Water Act section

402(p)(3)(B) and the related federal regulations and guidance. Consistent with federal law, all the requirements in the Order could have been included in a permit adopted by U.S. EPA in the absence of California's delegated authority to issue NPDES permits. (See *Defs. of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1166.) Each of the requirements in the Order, especially when implemented together, constitute the critical means towards achieving the requirements and goals of the Clean Water Act. Therefore, since the Board determines that each of the requirements in the Order are not more stringent than what federal law requires, there is no legal requirement for the Board to consider the factors of California Water Code section 13241. The State Water Board recently confirmed this conclusion with respect to the 2012 Los Angeles County MS4 Order. (*In the Matter of Review of Approval of Watershed Management Programs and an Enhanced Watershed Management Program Submitted Pursuant to Los Angeles Regional Water Quality Control Board Order R4-2012-0175,* Order WQ 2020-0038, at p. 30, stating "[t]his requirement [to conduct a 13241 analysis], however, does not apply when the waste discharge requirements imposed by the regional board are not more stringent that required by federal law, *as is the case here*. (emphasis added) (footnotes omitted).)[349] The Regional MS4 Permit does not contain any requirements that would result in a different conclusion here.

Further, the issue of whether numeric WQBELs are considered more stringent than what federal law requires, prompting a required consideration of the section 13241 factors, was the subject of recent litigation between the Board and some permittees, which was previously discussed in Part II.F. The Los Angeles Water Board disagrees that the inclusion of numeric WQBELs in the Order is more stringent than what federal law requires, as explained in Part V.B. This is supported by U.S. EPA in its guidance on incorporating TMDL WLAs for stormwater in NPDES permits, which explains that the permit's administrative record needs to demonstrate that WQBELs will achieve the WLAs, whether the WQBEL is expressed numerically or as a BMP.[350]

Notwithstanding the above, the Los Angeles Water Board has nevertheless considered the factors set forth in California Water Code section 13241 in issuing the Order. The Board's consideration of each of the factors is provided below. The Board has also considered all the evidence that has been presented to the Board regarding the section 13241 factors in issuing the Order. This includes specific costs of compliance information presented to the Board by Permittees and stakeholders, as well as specific cost information developed by the Board itself and that evidence is contained in the Administrative Record.

It is important to note that neither California Water Code section 13241 or section 13263 specifies the type or level of consideration required. Neither do these sections dictate what, if anything, a regional water board must do upon consideration of the factors. Several courts have interpreted the type of consideration required by California Water Code section 13241, primarily in the context of disputes over the "economic considerations" factor. In *City of Arcadia et al. v. State Water Resources Control Board and Los Angeles Regional Water*

[349] In Order WQ 2020-0038, the State Water Board also found that the Los Angeles Water Board's consideration of costs of compliance for the 2012 Los Angeles MS4 Permit went "well beyond what is required of them by law to assess the costs associated with their permits and assist municipalities in creating a manageable pathway to address water quality concerns." (Order WQ 2020-0038 at p. 30.)

[350] U.S. EPA, Memorandum, "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs,'" (Nov. 26, 2014), p. 6. See also, comment letter from U.S. EPA Region IX on the draft Regional MS4 Permit, dated April 28, 2021, in which U.S. EPA states, "[n]either the Clean Water Act nor the 2014 TMDL Memorandum suggest that expressing WLAs as NELs is any more or less stringent than BMPs."

Quality Control Board (2006) 135 Cal.App.4th 1392 ("City of Arcadia I"), which involves a challenge to a trash TMDL, the Court of Appeal held that section 13241 does not specify a particular manner of compliance and thus the matter is within a regional water board's discretion. (*Id*. at p. 1415.) Further, the court found that section 13241 does not define "economic considerations" and there is "no authority for the proposition that a consideration of economic factors under Water Code section 13241 must include an analysis of every conceivable compliance method or combinations thereof or the fiscal impacts on permittees." (*Id*. at pp. 1415, 1417; State Water Board Order WQ 2020-0038 at p. 31.) In *City of Arcadia et al v. State Water Resources Control Board and Los Angeles Regional Water Quality Control Board* (2011) 191 Cal.App.4th 156 ("City of Arcadia II"), which involved a challenge to a triennial review of water quality standards,[351] the Court of Appeal held that section 13241 "does not specify how a water board must go about considering the specified factors. Nor does it require the board to make specific findings on the factors." (*Id*. at p. 177; see also *California Association of Sanitation Agencies and City of Vacaville v. State Water Resources Control Board and Central Valley Regional Water Quality Control Board* (2008) 208 Cal.App.4th 1438, 1464-1465 [in a challenge to certain water quality objectives, the Court of Appeal found that there was no support for the municipalities' contention that each and every component part of the Water Quality Objectives must be tied to an economic analysis].) In *City of Duarte v. State Water Resources Control Board* (2021) 60 Cal.App.5th 258, 272 ("City of Duarte"), relying on prior case law, the Court of Appeal again affirmed that the "manner in which the Water Control Boards consider and comply with Water Code section 13241 is within their discretion." It also held that "…the Water Control Boards are charged with taking into account economic considerations, not merely costs of compliance with a permit … economic considerations also include, among other things, the costs of not addressing the problems of contaminated water." (*Id*. at p. 276.) Lastly, consideration of section 13241 does not require a "cost-benefit analysis." (See State Water Board Order WQ 2020-0038 at p. 31.) In the 2001 Los Angeles County MS4 Permit litigation, the trial court held: "[w]here these statutes required 'consideration' of economics, the requirement is just that: a consideration. Water Code section 13241 does not require a 'cost-benefit analysis,' as Petitioners suggest. Economics is merely a factor to be considered." (*In re Los Angeles County Municipal Storm Water Permit Litigation* (Super. Ct. Los Angeles County, 2005, No. BS 080548, Statement of Decision from Phase II Trial).) Further, in *City of Duarte*, the Court of Appeal held that the Los Angeles Water Board complied with Water Code section 13241 "as a matter of law" when adopting the 2012 Los Angeles County MS4 permit notwithstanding the absence of a cost-benefit analysis. (*City of Duarte*, supra, 60 Cal.App.5th at pp. 274-275.) The above case law demonstrates that the Los Angeles Water Board has broad discretion in how it considers the section 13241 factors.

Having considered the factors in California Water Code section 13241, the Los Angeles Water Board finds that the requirements in the Order are necessary to ensure the reasonable protection of beneficial uses of waterbodies in the Los Angeles Region and the prevention of nuisance. None of the factors of section 13241, including costs of compliance, is sufficient to justify failing to protect those beneficial uses. Nor is it sufficient to justify omitting any requirement in the Order, as the Board finds that doing so would unreasonably affect the designated beneficial uses of the region's waters. Additionally, it would be wholly inconsistent with federal requirements to not include the requirements in the Order as the Board has deemed them necessary for the control of MS4 discharges in the Los Angeles Region. Where appropriate, the Board has provided Permittees with additional time to implement control measures to achieve final WQBELs and/or receiving water limitations. In addition, the Board

[351] 33 U.S.C. §1313(c)(1).

has provided significant flexibility for Permittees to choose how to implement the requirements of the Order, including by working with other Permittees to implement cost-effective control measures. The Order allows Permittees the flexibility to address critical water quality priorities, namely discharges to waters subject to TMDLs, but aims to do so in a focused and cost-effective manner while maintaining the level of water quality protection mandated by the Clean Water Act.

A. Past, Present, and Probable Future Beneficial Uses of Water

Chapter 2 of the Basin Plan identifies designated beneficial uses for surface water bodies in the Los Angeles Region, which are the receiving waters for MS4 discharges. The Basin Plan identifies whether the beneficial use is existing (i.e., attained on or after November 28, 1975 per 40 CFR section 131.3(e) or a potential beneficial use. Beneficial uses are designated as a potential beneficial use for several reasons, including implementation of the State Water Board's policy entitled "Sources of Drinking Water Policy" (State Water Board Resolution No. 88-63); plans to put the water to such future use; potential to put the water to such future use; designation of a use by the Los Angeles Water Board as a regional water quality goal; or public desire to put the water to such future use.

The beneficial uses identified in the Basin Plan for the Los Angeles Region include water contact and non-contact recreation (REC-1 and REC-2), commercial and sport fishing (e.g., COMM), various types of aquatic life and wildlife habitats (e.g., WARM, COLD, WILD), groundwater recharge (GWR), drinking water supply (MUN), agricultural water supply (AGR), various types of industrial water supply (IND, PROC, POW), and navigation (NAV).[352] The Ocean Plan also identifies designated beneficial uses for ocean waters of the State that must be protected, including 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 (ASBS), rare and endangered species, marine habitat, fish migration, fish spawning and shellfish harvesting. The Los Angeles Region has several ASBS, one of which is within the area covered by the Regional MS4 Permit. This ASBS extends from Latigo Point in Los Angeles County to Mugu Lagoon in Ventura County.[353]

Beneficial uses of inland surface waters in the region generally include water contact recreation (REC-1) and WARM, COLD and/or COMM, reflecting the "swimmable/fishable" goal of section 101(a)(2) of the federal Clean Water Act. In addition, inland waters are usually designated as IND, PROC, REC-2, and WILD, and are sometimes designated as waters "that support habitats necessary, at least in part for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered" (RARE).[354] Furthermore, many regional streams are primary sources of replenishment for major groundwater basins that supply water for drinking and other uses, and as such must be protected as waters used for recharge of groundwater (GWR). Beneficial uses of coastal waters in the Los Angeles Region, including bays, estuaries, lagoons, harbors, beaches, and the Pacific Ocean, include habitat for marine life and recreation, boating, shipping, and commercial and sport fishing. Beneficial uses of wetlands include many of the same uses designated for the rivers, lakes, and coastal water to which they are connected.

[352] Definitions of beneficial uses are contained in Chapter 2 of the Basin Plan.
[353] Basin Plan, pp. 5-4 to 5-7.
[354] Ibid.

In the 1990s, the Los Angeles Water Board contracted with California State University to survey and research beneficial uses of all waterbodies throughout the region and relied on these studies in the 1994 update to the Basin Plan. In 2014, the Los Angeles Water Board re-evaluated the current recreational beneficial use designations of the engineered channels in the Los Angeles River Watershed and resolved to retain the current recreational beneficial use designations (Resolution No. R14-011). Beneficial uses of the region's waterbodies are also described by others in documents including, but not limited to, the Los Angeles River Revitalization Master Plan, Lower LA River Revitalization Plan, Los Angeles River Master Plan, the Ballona Creek Trail and Bikeway Environmental and Recreational Enhancement Study, and the Matilija Dam Ecosystem Feasibility Study Final Report.

Beneficial uses of waters impacted by MS4 discharges covered by the Order are also discussed in Part II.A "Description of Receiving Waters and Watershed Management Areas" and Part II.B "Geographic Coverage and Watershed Management Areas" of this Fact Sheet.

As discussed in Part II.C and Part II.D, MS4 discharges of stormwater and non-stormwater convey myriad pollutants to surface waters in every watershed of the region, including bacteria, trash, metals, organic compounds (including various pesticides), and nutrients, among others. These pollutants have damaging effects on both human health and aquatic and riparian ecosystems. Water quality assessments conducted by the Los Angeles Water Board have identified impairment of beneficial uses of water bodies in the Los Angeles Region caused or contributed by these pollutants in MS4 discharges. As a result of these impairments, there are beach postings, fish consumption advisories, ecosystem and recreational impacts from trash and debris, and toxic conditions for aquatic life, among others. Forty-five TMDLs established by the Los Angeles Water Board and U.S. EPA identify MS4 discharges as one of the pollutant sources causing or contributing to impairments of beneficial uses. The requirements of the Order are necessary to protect and restore the past, present, and probable future beneficial uses of surface waters in the region.

B. Environmental Characteristics of the Hydrographic Unit Under Consideration, Including the Quality of Water Available Thereto

Environmental characteristics of each of the Watershed Management Areas (WMAs) covered by the Order, including the quality of water, is discussed in Part II.A and Part II.B of this Fact Sheet. Additional information can be found in the Los Angeles Region's *Watershed Management Initiative Chapter* and the State's Clean Water Act Section 303(d) List of impaired waters.

Watershed Management Initiative Chapter:

http://www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/watershed/index.shtml

Clean Water Act Section 303(d) List of impaired waters:

https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

The quality of water in receiving waters as impacted by MS4 discharges has been routinely monitored by Permittees through the Monitoring and Reporting Programs under all three previous permits (Order No. R4-2010-0108, Order No. R4-2012-0175, and Order No. R4-2014-0024). An analysis of the monitoring data collected under the

three previous permits is provided in Part II.E of this Fact Sheet and in the MS4 Monitoring Data Review Report (July 2020 [Section 3]; November 2020 [Sections 8-11]) as well as in a series of three presentations to the Board at regularly scheduled Board meetings on May 18, 2018, July 12, 2018, and September 13, 2018.

C. Water Quality Conditions that Could Reasonably be Achieved Through the Coordinated Control of All Factors Which Affect Water Quality in the Area

Subsection (c) of section 13241 provides for the consideration of "[w]ater quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area." As with the other factors in 13241, there is no formal guidance or interpretation on how this factor is to be specifically considered, especially in the context of issuing a permit for a particular type of discharge under Water Code section 13263. In the context of establishing water quality objectives, it is necessary to consider all factors that affect water quality, including an analysis of all sources of the applicable pollutant. However, this factor does not lend itself to being reconsidered later when issuing waste discharge requirements as water quality objectives have already been established and the focus during the permitting stage is regulating a particular type of discharge or a discharge from a specific source, and not all possible sources of pollutants to a receiving water. The water quality objectives implemented by the Order have already been established in the Basin Plan and other water quality control plans through a separate regulatory process, and those water quality objectives were deemed reasonable and achievable when they were promulgated in order to protect beneficial uses.

Some permittees have previously interpreted this factor as requiring the Los Angeles Water Board to determine that water quality conditions or specific permit requirements are "reasonably achievable" and that such a determination includes a consideration of economics or costs of compliance as part of the "reasonably be achieved" language in section 13241(c). No support has been provided to the Board for this interpretation. It is important to note for this analysis that this factor in section 13241(c) does not include a consideration of economics or costs of compliance. The Board interprets this factor as requiring a consideration of the water quality conditions that could reasonably be achieved by the Order from a technical or scientific standpoint only. A consideration of economics, including the costs of compliance, in this factor would be completely superfluous to the wholly separate consideration in section 13241(d) – "economic considerations" – which is discussed in Part XIII.D, below.

When it comes to the permitting stage, the Los Angeles Water Board is required to implement any relevant water quality control plans, including water quality objectives, in its permits. (Water Code § 13263(a).) In so doing, the Board "shall" (among other things) "take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose," "other waste discharges," (*id.*), "together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses." (Water Code § 13377.) The Board has previously established numerous TMDLs as part of its Basin Plan, including state programs of implementation and schedules for achievement of water quality objectives. In addition, USEPA has established several TMDLs for waters in the Los Angeles Region. USEPA established these TMDLs for the protection of beneficial uses. In addition, for several USEPA-established TMDLs, the Los Angeles Water Board has established state programs of implementation and schedules as part of its Basin Plan. The Los Angeles Water Board must therefore also include WQBELs in the permit to

implement the TMDLs and the WLAs established therein to achieve water quality objectives.

Through the prior establishment of the water quality objectives and TMDLs, the Board has found that such water quality conditions can reasonably be achieved, in many cases over time in accordance with implementation schedules, through the coordinated control of all factors which affect water quality in the area. To be sure, implementation of the TMDLs and associated WLAs are expected to reasonably achieve the water quality objectives in the Basin Plan and other water quality control plans if they are applied not only to MS4 discharges, but also to other discharges contributing to water quality impairment, such as industrial discharges and discharges from POTWs (see for example, the Los Angeles River Metals TMDL, which assigns a large portion of the responsibility for pollutant reductions to POTWs, and the Calleguas Creek Organochlorine Pesticides and PCBs TMDL, which assigns a large portion to agricultural dischargers). That said, permitting and regulation of MS4 discharges are a key component of achieving the water quality objectives in the Basin Plan and other water quality control plans. As noted in various places throughout this Fact Sheet, one of the key factors necessary to achieve the water quality objectives in the Los Angeles Region is proper control of MS4 discharges. Indeed, “urban runoff is causing and contributing to impacts on receiving waters throughout the state and impairing their beneficial uses.” (State Water Board Order WQ 2001-15, p. 7; State Water Board Order WQ 2015-0175, p. 15.) Accordingly, and as explained in further detail below, the Los Angeles Water Board finds that the conditions contained in this permit, including numeric WQBELs, are key to ensuring reasonable achievement of water quality objectives in the Los Angeles Region.

Coordinated Control of all Factors Affecting Water Quality

The Los Angeles Water Board and State Water Board regulate water quality in the Los Angeles Region through various permitting actions. The different types of surface water discharges that the Water Boards regulate include point sources such as POTWs, industrial facilities, dewatering activities, groundwater cleanup activities, and MS4 discharges of stormwater and non-stormwater; and nonpoint sources such as agricultural discharges and littering. These discharges are regulated through NPDES permits, waste discharge requirements, waivers of waste discharge requirements, and memorandums of understanding in accordance with State and federal law, regulation, and policy. These various permits and other regulatory mechanisms contain provisions and requirements to achieve water quality objectives and TMDLs, ranging from compliance with pollution prevention plans to compliance with effluent limitations. The regulatory mechanisms are issued as part of a watershed management approach, often according to a TMDL program of implementation, to ensure coordinated implementation by all sources at the watershed scale to attain water quality objectives. TMDLs in particular consider all the likely means of compliance, including a mix of treatment strategies and control measures to be implemented by all sources, which are reflected in the monitoring requirements, implementation schedules, and direction for incorporation of pollutant wasteload and load allocations into permits.

With respect to stormwater specifically, the Los Angeles Water Board and State Water Board regulate many types of stormwater discharges, including those of municipalities,

universities and other non-traditional Phase II discharges[355], industrial sites[356], construction sites[357], and state agencies like Caltrans.[358] The Phase II MS4 Permit effectively prohibits non-stormwater discharges and contains effluent and receiving water limitations. The Phase II MS4 Permit specifies the actions necessary to reduce the discharge of pollutants in stormwater to the MEP and comply with TMDLs, including participation in the watershed management programs of Phase I MS4 permittees[359] or alternative plan to demonstrate reasonable assurance of compliance with WLAs. The Industrial General Permit contains non-stormwater prohibitions, effluent limitations expressed as numeric action levels and, TMDL requirements, including numeric effluent limitations, and receiving water limitations.[360] The Construction General Permit contains non-stormwater prohibitions, effluent limitations expressed as numeric action levels, TMDL requirements, and receiving water limitations.[361] The Caltrans MS4 Permit effectively prohibits non-stormwater discharges and contains effluent and receiving water limitations, and categorical pollutant requirements to attain TMDLs within 20 years.[362]

The Permittees subject to the Order are not solely responsible for ensuring that water quality objectives in the receiving waters are met; rather, achieving and maintaining water quality objectives is a coordinated effort and all regulated dischargers must contribute. That said, as previously noted in Part II.E of this Fact Sheet, MS4 discharges are a significant source of pollutants to receiving waters and their regulation plays an important role in the achievement of water quality objectives. To not regulate discharges from MS4s -- from the Permittees subject to the Order in particular -- would place an undue burden on other types of discharges, especially since, as discussed in Part II.E of this Fact Sheet, MS4 discharges constitute a leading cause of water quality impairment in the Los Angeles Region.

Water Quality Objectives as Incorporated into the Order are Reasonably Achievable

When considering the achievability of water quality objectives from the singular perspective of the Order requirements, the application of the established water quality objectives to the Permittees' MS4 discharges is reasonably achievable.

Permittees can and do coordinate several factors that affect water quality under their jurisdiction. Generally, improvements in the quality of receiving waters impacted by MS4 discharges can be achieved by reducing the volume of stormwater or non-stormwater discharged into the MS4 to receiving waters; reducing pollutant loads to stormwater and

[355] State Water Board, Order No. 2013-0001-DWQ (as amended by Orders WQ 2015-0133-EXEC, ORDER WQ 2016-0069-EXEC, WQ ORDER 2017-XXXX-DWQ, ORDER WQ 2018-0001-EXEC, AND ORDER WQ 2018-0007-EXEC), NPDES Permit for Stormwater Discharges from Small MS4s.

[356] State Water Board, Order No. 2014-0057-DWQ, NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (as amended by Order No. 2015-0122-DWQ).

[357] State Water Board, Order 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012-0006-DWQ), NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities.

[358] State Water Board, Order 2012-0011-DWQ (as amended by Orders WQ 2014-0006-EXEC, WQ 2014-0077-DWQ, and WQ 2015-0036-EXEC), NPDES Statewide Storm Water Permit for State of California Department of Transportation.

[359] Ibid. Attachment G, pages 37-55.

[360] Ibid. Page 21 and Attachment E.

[361] Ibid. Page 28-31.

[362] Ibid. Page 31.

non-stormwater through source control/pollution prevention, including operational source control such as street sweeping and public education, controlling illicit connections and illicit discharges, and conducting inspections of industrial and commercial facilities; and removing pollutants that have been loaded into stormwater or non-stormwater before they enter receiving waters, through infiltration, treatment, or diversion to a sanitary sewer.

The Order is designed to reduce pollutants to waterbodies from MS4 discharges through the implementation of multi-faceted stormwater management programs at the municipal and watershed levels. Overall improvements in MS4 discharge quality are expected to occur over time with ongoing implementation of the requirements in the Order. Information obtained through the robust monitoring programs implemented through the previous permits; implementation of stormwater management measures by individual municipalities within a watershed since the issuance of the first MS4 permits in the Los Angeles Region; analysis during TMDL establishment, including source analysis, loading capacity analysis and linkage analysis; and available predictions from the RAAs of many Watershed Management Programs clearly demonstrate that water quality objectives can be reasonably achieved over time through the coordinated control of all factors that affect MS4 discharge impacts on receiving waters.

Since the issuance of the previous MS4 permits, municipalities both locally and nationally have gained considerable experience in the management of municipal stormwater and non-stormwater discharges. The technical capacity to monitor stormwater and its impacts on water quality has also increased. In many areas, monitoring of the impacts of stormwater on water quality has become more sophisticated and widespread. Better information on the effectiveness of stormwater controls to reduce pollutant loadings and address water quality impairments is now available. The International Stormwater BMP Database (http://www.bmpdatabase.org/) provides extensive information of the performance capabilities of stormwater controls and continues to be updated with new studies. Locally, the Southern California Stormwater Monitoring Coalition's California LID Evaluation and Analysis Network (SMC CLEAN) has developed a standard protocol for monitoring of BMPs[363] and a guidance document for constructing, maintaining, and monitoring BMPs.[364] The Southern California Coastal Water Research Project (SCCWRP) has analyzed BMP treatment effectiveness using monitoring data specifically from BMPs implemented in California[365] and has made their findings readily available to Permittees and regulatory agencies through a web application.[366]

In fact, some of the many advances in how to effectively control stormwater and pollutants in stormwater have occurred locally within the Los Angeles Region and include the development of cost effective trash full capture devices; stormwater diversion, treatment and beneficial use facilities such as the Santa Monica Urban Runoff Recycling Facility (SMURRF) and Carriage Crest Park; stormwater capture, storage, and reuse facilities such as in Sun Valley; low impact development/site design practices;

[363] SMC CLEAN. LID/GI Monitoring Protocol (August 1, 2017)
[364] SMC CLEAN. Low Impact Development & Green Stormwater Infrastructure Construction, Inspection, Maintenance, and Monitoring Guidance Manual (May 2019)
[365] Afrooz, N., M. Beck, T. Hale, L. McKee, K.C. Schiff. 2019. BMP Performance Monitoring Data Compilation to Support Reasonable Assurance Analysis. Technical Report 1081. Southern California Coastal Water Research Project. Costa Mesa, CA.
[366] SCCWRP. California BMP effective calculator (v1.2.0). https://sccwrp.shinyapps.io/bmp_eval/ (accessed September 3, 2019)

and innovative/opportunistic culvert inlet multi-media filters. There are many other case studies of municipalities that have implemented innovative and effective stormwater management measures, many of which have been demonstrated through the implementation of Watershed Management Programs by Permittees in Los Angeles County.

In addition to the advances in monitoring and individual stormwater treatment technologies, there have been advances in watershed-wide planning and implementation of stormwater treatment technologies through state-of-the-art computer modeling. Historically, some have argued that while BMPs may be effective at treating stormwater on a small scale, their effectiveness at treating stormwater on a watershed scale is less certain. However, in recent years, there have been significant advances in the planning and design of watershed wide BMPs to achieve WQBELs and receiving water limitations. These advances are demonstrated by the 11 WMPs and 12 EWMPs submitted by groups of Permittees in compliance with the 2012 Los Angeles County and 2014 Long Beach MS4 Permits. Many of the WMPs and EWMPs were based on the Watershed Management Modeling System (WMMS) developed by Los Angeles County[367] in 2010. WMMS is a comprehensive planning tool based on computer models that can simulate hydrologic and pollutant transport processes for all the major watersheds within Los Angeles County. WMMS further predicts the pollutant load reductions that can be achieved by the implementation of various stormwater treatment control technologies throughout the watersheds. This modeling system combines a watershed runoff and receiving water quality model (Loading Simulation Program in C++ (LSPC)) with a BMP performance model (System for Urban Stormwater Treatment and Analysis Integration (SUSTAIN)) to determine the most cost-effective combination of stormwater management measures to achieve desired water quality outcomes. Los Angeles County updated WMMS in 2020 (WMMS 2.0) based on more recent input and water quality calibration data to further refine and improve its predictive capabilities.[368] Eight of the WMPs and 12 EWMPs all used WMMS or similar cutting edge modeling systems as part of their RAAs to characterize their current pollutant loading, determine the required reductions to meet WQBELs and receiving water limitations, and prescribe the number, location, and design specifications for BMPs that could meet their required load reductions to achieve water quality objectives within prescribed timeframes. These RAAs prove that the Permittees' MS4 discharges can reasonably achieve the required water quality conditions, either immediately or over time.

The Water Quality Objectives Incorporated in the Order Consider Local Conditions and Provide Flexibility in Implementation

The Order contains requirements based on water quality objectives and TMDLs, which, where appropriate, incorporate information regarding local conditions and flexibility such that they can reasonably be achieved by Permittees. The following paragraphs give examples of how local conditions are already incorporated into receiving water limitations and water quality-based effluent limitations for bacteria and metals, two of the most pervasive categories of pollutants found in MS4 discharges.

[367] Los Angeles County Flood Control District and Los Angeles County Department of Public Works. 2020b. *Watershed Management Modeling System Version 2.0 Phase II Report: BMP Model and Optimization Framework.* Los Angeles County Department of Public Works, Stormwater Quality Division.
[368] Ibid.

Bacteria

Bacteria TMDLs in the Los Angeles Region implement single sample water contact recreation bacteria water quality objectives by using a reference system/antidegradation approach. This approach ensures that "bacteriological water quality is at least as good as that of a [local] reference system and that no degradation of existing bacteriological water quality is permitted where existing bacteriological water quality is better than that of the selected reference system."[369] As a result of this approach, the Order's bacteria receiving water limitations are expressed in the form of annual allowable exceedance days, which allow Permittees to exceed bacterial water quality objectives in receiving waters at the same frequency as a local reference water body. This approach takes into consideration natural sources of bacteria, which may cause or contribute to exceedance of the single sample water quality objectives.[370]

Additionally, engineered channels are subject to an exception called the high flow suspension, which suspends bacterial water quality objectives associated with REC-1 (water contact recreation) and REC-2 (non-contact water recreation) beneficial uses during days with rainfall greater than or equal to 0.5 inch and the 24 hours following the rain event. Receiving waters that are engineered channels in which this suspension applies include portions of Ballona Creek, Dominguez Channel, Los Angeles River, and San Gabriel River.[371] This exception, which is implicitly incorporated into the Order's receiving water limitations, is also included in the Order's compliance determination provisions (Part X.A.3) for clarity.

Furthermore, in the Ballona Creek watershed specifically, the Los Angeles Water Board removed the REC-1 use in Ballona Creek Reach 1 and revised the REC-1 use in Ballona Creek Reach 2 to Limited REC-1 based on the results of a Use Attainability Analysis. The analysis was conducted between March and August of 2002 to determine actual and potential recreational uses of the creek in conformance with 40 CFR § 131.10(g). The result of the remaining REC-2 use designation in Reach 1 and the new Limited REC-1 use designation in Reach 2 are higher single sample geometric mean limits for the bacteria water quality objectives to protect those uses.

Metals

Metals receiving water limitations and WQBELs are derived from 40 CFR section 131.38 (also known as the California Toxics Rule or CTR). The CTR specifies water quality objectives for metals as a function of water-effect ratios (WERs) which, by default, have a value of 1.0. The Los Angeles Water Board has approved several site-specific WERs in the Los Angeles River and Calleguas Creek watersheds, ranging in values from 1.32 to 9.69, that account for local water quality conditions that may influence the bioavailability and/or toxicity of metals. These site-specific WERs, all being greater than 1.0, have adjusted receiving water limitations and WQBELs, including those for MS4 discharges, to more accurately reflect the toxicity of metals to aquatic life in these receiving waters.

[369] Basin Plan Chapter 3
[370] Tiefenthaler, L.L., E.D. Stein, G.S. Lyon. 2008. Fecal Indicator Bacteria (FIB) levels during dry weather from southern California reference streams. Technical Report 542. Southern California Coastal Water Research Project. Costa Mesa, CA.
[371] Basin Plan Table 2-1a

Similarly, the Los Angeles Water Board adopted site specific water quality objectives for lead based on the results of a Permittee-led special study. The study recalculated the acute and chronic lead objectives for portions of the Los Angeles River using an expanded nation-wide dataset provided by USEPA following USEPA procedures. The Los Angeles Water Board revised the existing Los Angeles River Metals TMDL to update the numeric targets and WLAs, including those for MS4 discharges, based on the recalculated lead objectives. The resulting numeric targets and WLAs for lead were greater than those in the original TMDL.

Additionally, several metals TMDLs considered and, where appropriate, used site-specific metals translators. These translators represent the fraction of total recoverable metals in a receiving water that is in the dissolved form. Site-specific metals translators were used to calculate the metals waste load allocations in the metals TMDLs for Ballona Creek, Los Angeles River, Los Cerritos Channel, and San Gabriel River. These waste load allocations are incorporated into the Order as water quality-based effluent limitations.

Conclusion

Based on a consideration of all factors controlling water quality in the region, including the multiple types of discharges regulated by the Los Angeles Water Board and State Water Board, the multiple types of stormwater-specific discharges regulated by the Los Angeles Water Board and the State Water Board, the multiple actions that Permittees can take to reduce pollutants in their discharges, and the effectiveness of these actions as demonstrated by monitoring and the RAAs in existing watershed management programs, the Los Angeles Water Board finds that water quality conditions based on the requirements of this Order to implement water quality objectives can reasonably be achieved, even if such conditions are achieved over time (see Table F-26). The water quality objectives themselves have already been established and found to be reasonably achievable. In many cases, the Los Angeles Water Board has considered special studies and site-specific information to ensure that the water quality objectives are no more stringent than necessary to protect beneficial uses without degradation of water quality. The requirements of the Order based on these water quality objectives, including numeric WQBELs to implement TMDL WLAs, are reasonably achievable.

D. Economic Considerations

The Los Angeles Water Board recognizes that economic information, including cost information, is invaluable for informed decision-making and for the evaluation and improvement of policies and practices. Economic information is also critical for Permittees to manage their assets, implement cost-effective programs, and develop successful funding strategies to achieve overall improvements in water quality within the region.

The Legislature did not define “economic considerations” in California Water Code section 13241. As noted in *City of Arcadia I*, there is no reported court decision analyzing the “economic considerations” phrase of the statute. In *City of Burbank*, the California Supreme Court, “without discussion, concluded that in adopting Water Code section 13241 the Legislature intended ‘that a regional board consider the cost of compliance [with numeric pollutant restrictions] when setting effluent limitations in a wastewater discharge permit.’ (Italics added.).” (135 Cal.App.4th at 1415.) While the California Supreme Court assumed “economic considerations” includes costs of compliance, it did indicate that this factor is broader. (*City of Burbank*, 35 Cal.4th at 618 [noting that when a regional board is considering whether to make pollutant restrictions in a permit more

stringent than federal law requires, "California law allows the board to take into account economic factors, *including* the wastewater discharger's cost of compliance." (emphasis added.)].) As discussed in the introduction to this Part XIII, in *City of Duarte*, the Court of Appeal held that "…the Water Control Boards are charged with taking into account economic considerations, not merely costs of compliance with a permit … economic considerations also include, among other things, the costs of not addressing the problems of contaminated water." (*City of Duarte, supra,* 60 Cal.App.5th at 276.) Since the Los Angeles Water Board has broad discretion in how it considers this factor, the Board interprets this factor as not only requiring a consideration of the costs of compliance, but also other relevant economic factors such as the societal and environmental costs of not adequately controlling MS4 discharges and cost savings associated with capture and beneficial use of stormwater and non-stormwater to offset the need to purchase imported water.

Many of the costs that will be incurred by permittees as a result of implementing the Order are not fundamentally new. MS4 permits, and stormwater and urban runoff management programs to implement MS4 permit requirements, have been in place in the Los Angeles Region for 30 years. Since the MS4 permits issued in the 1990s, Permittees have been required to effectively prohibit non-stormwater (i.e., dry weather urban runoff) discharges that are a source of pollutants to receiving waters. Since the late 1990s and early 2000s, Permittees have been required to ensure that their MS4 discharges do not cause or contribute to an exceedance of water quality standards (also known as "receiving water limitations") in receiving waters. Costs incurred by Permittees to implement the Order will largely be related to continued efforts to meet these longstanding requirements. Furthermore, all three prior permits included requirements to implement WQBELs consistent with the assumptions and requirements of applicable TMDL wasteload allocations. There are only a limited number of new TMDL-related requirements in the Order (see Table F-25). Nonetheless, as described below, the two methods used to project the cost of compliance assume that no costs have been incurred to date (i.e., expenditures incurred to date to implement TMDLs and WMPs/EWMPs have not been subtracted from the total projected costs). This was done for consistency and ease of calculation. As a result, projected costs are conservative overestimates.

The Los Angeles Water Board recognizes that these costs of compliance are significant and that many Permittees have limited resources to implement actions to address their MS4 discharges. Based on the economic considerations below, the Board has structured the permit as flexibly as possible to give Permittees the opportunity to sequence actions to address the highest water quality priorities; options to demonstrate compliance; the ability to customize their control measures based on local conditions, including the "minimum control measures"; sufficient time to comply (in many cases decades from the time the TMDL was established); opportunities to request time extensions based on economic factors among others; and the ability to collaborate and pool their resources to implement programs and projects to achieve compliance and to also collaborate and pool their resources to monitor their compliance. The inclusion of a voluntary watershed management program alternative compliance pathway allows Permittees to submit a plan, either individually or in collaboration with other Permittees, for Los Angeles Water Board approval that allows for actions to be customized and prioritized based on specific watershed conditions and needs. The Order also allows Permittees to customize monitoring requirements, which they may do individually, or in collaboration with other Permittees. Permittees can choose to implement the least expensive measures that are effective in meeting the requirements of the Order.

The Permittees' choices regarding how to comply can take into account the specific conditions within the watershed, such as:

- Types of pollutants targeted
- Site characteristics (e.g., existing infrastructure, land use, infiltration potential)
- Costs of controls
- Compliance schedules
- Current compliance rates
- Other socio-economic factors, technology, inflation, risks, regulatory framework

Further, the WMP/EWMP compliance alternative provided in the prior Los Angeles County MS4 Permit and City of Long Beach MS4 Permit, and which is included in the Order, allows Permittees to adapt their programs based on new data and information to be more cost-effective.

The Watershed Management Program proposed by the Rio Hondo/San Gabriel River Water Quality Group is an example of this. The Los Angeles County Permittees participating in this group are the cities of Arcadia, Bradbury, Duarte, Monrovia, and Sierra Madre, the County of Los Angeles, and the Los Angeles County Flood Control District. On April 21, 2016, the Los Angeles Water Board approved the Group's EWMP pursuant to the 2012 Los Angeles County MS4 Permit. At that time, the Group estimated that the cost for the entire program exceeded $1.4 billion. On March 30, 2018, the Group submitted proposed modifications to its approved EWMP pursuant to the adaptive management provisions of the 2012 Los Angeles County MS4 Permit. The proposed revised EWMP entailed extensive and significant modifications to the approved EWMP, including an updated Reasonable Assurance Analysis, changes to watershed control measures, and changes to interim compliance deadlines. From March 2018 to December 2018, the Los Angeles Water Board worked closely with the Group on its proposed revisions. On December 17, 2018, the Group submitted its proposed revised EWMP. On April 2, 2019, the Los Angeles Water Board approved the modifications to the Group's EWMP proposed on December 17, 2018. The Group now estimates the cost of their revised program to be $121.8 million, or approximately 9% of the original estimated cost. The deadlines for completion of these projects are 2026 for the San Gabriel River watershed portion, and 2028 for the Los Angeles River/Rio Hondo watershed portion.[372]

The Order also does not require permittees to fully implement all requirements within a single permit term; if Permittees demonstrate they are meeting established interim requirements and schedules that demonstrate progress toward final compliance, then they are complying during the term of the Order, i.e., Permittees do not have to comply with many final WQBELs and receiving water limitations during the 5-year term of the Order. Therefore, the costs to achieve final compliance will be spread out and incurred incrementally over several permit terms. Permittees may also request time schedule orders, where justified, to meet WQBELs and receiving water limitations where final compliance deadlines have passed, and Permittees need additional time to achieve compliance. Lastly, the Order includes several reopener provisions whereby the Board

[372] Rio Hondo/San Gabriel River Water Quality Group, Rio Hondo/San Gabriel River Revised Watershed Management Program, May 17, 2019. Note that approximately 30% of the original cost estimate was for implementation in the City of Azusa, which is no longer a participant in this group.

can modify the Order based on new information gleaned during the term of the Order and/or to modify the Order to reflect revisions to TMDLs, including schedules and final deadlines.

1. Los Angeles Water Board's Consideration of Projected Costs to Comply with the Order

The following is a high-level estimate of the possible range of projected costs to comply with the Order, including compliance with the WQBELs that have been incorporated consistent with available TMDL wasteload allocations. The Board notes that cost of compliance with the WQBELs is inextricably tied to compliance with the other requirements in the Order, including compliance with receiving water limitations, the prohibition on discharges of non-stormwater, and stormwater management program minimum control measures.

a. Sources of data. The costs of implementing the Order were examined by primarily utilizing three sources of data:

i. Estimates of the cost of complying with TMDL wasteload allocations assigned to MS4 discharges, which the Board developed and considered during the establishment of each TMDL. (Used in Method 1.) These estimates were presented in TMDL Staff Reports. As this indicates, there are instances outside of the Order where the Board previously considered economics as it relates to Permittees' costs of compliance. In the case of TMDLs, these considerations resulted in many lengthy schedules for TMDL implementation, particularly for pollutants associated with stormwater (i.e., wet weather) discharges from MS4s. Similarly, the State Water Board considered costs when adopting the Trash Amendments, which included a new water quality objective for trash and implementation provisions, including a discharge prohibition, which have been incorporated into the Order.[373]

ii. Estimates of the cost of fully implementing Watershed Management Programs and Enhanced Watershed Management Programs developed to comply with MS4 permit requirements. (Used in Method 2.)

iii. Annual expenditure and budget data that are self-reported by the Permittees in their annual reports. (Used in Methods 1 and 2.)

b. Methods of Estimating Costs and Reported Costs. The Los Angeles Water Board used two methods to estimate a possible range of costs to comply with the Order.

Method 1: In the first method, the Los Angeles Water Board analyzed cost estimates that the Board had developed during the adoption of TMDLs and documented in TMDL Staff Reports. Note that for this method, we conservatively assume that no costs have already been incurred by Permittees. However, we know that Permittees have incurred costs associated with implementation of their programs such that the remaining cost for achieving final compliance under the Order is some fraction (less than 100%) of the original cost estimate.

[373] State Water Board Resolution 2015-0019. Amendment to the Water Quality Control Plan for Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. Web. 20 June 2019.

Method 2: In the second method, for Permittees in Los Angeles County, the Los Angeles Water Board staff compiled cost estimates of implementing structural BMPs presented in Watershed Management Programs and Enhanced Watershed Management Programs. For Permittees in Ventura County, Los Angeles County Permittees' anticipated costs were used to project costs to implement similar Watershed Management Programs in Ventura County. Note that in this method, similar to above, we apply the conservative assumption that little to no money has been spent during the prior and current permit terms to implement projects in the Watershed Management Programs and Enhanced Watershed Management Programs that were approved in 2015-2016 or, in the case of Ventura County Permittees, to implement projects to achieve TMDLs that were first incorporated into the 2009 Ventura County MS4 Permit.

Additional EWMP Development Costs: Estimates from Methods 1 and 2 were considered along with Ventura County's initial costs of developing EWMPs and WMPs. Ventura County currently does not participate in any EWMP or WMP but may develop EWMPs (now referred to as WMPs) in the next permit term. Ventura County conducted its own analysis in order to estimate development costs.[374]

Additional Stormwater Management Program Costs: Estimates from Methods 1 and 2 were considered along with Permittees' annual reported costs for existing elements of their stormwater management programs. These annual reported costs were tabulated based on the reported costs of implementing their stormwater management programs as well as costs associated with program management, monitoring programs, and a category described as "Other." Most of these annual reported costs are incurred in addition to structural BMP costs calculated in Methods 1 and 2. In these annual reported costs, some Permittees reported costs for capital projects, Regional Projects, Green Streets, and Restoration Projects, which were removed to avoid double counting. As noted below, there is wide variability in the Permittees' reported cost of compliance, which is not easily explained.[375]

c. Method 1: Projected Costs from TMDL Staff Reports

As noted above, in the first method for estimating the projected cost to comply with the Order, the Los Angeles Water Board used its analyses regarding costs of TMDL compliance.

As noted earlier, for the most part, the TMDL provisions in the Order are not new but rather continuing requirements from the prior three permits. Of the 45 TMDLs incorporated in the Order, only three are new for Los Angeles County Permittees, including the City of Long Beach, and six are new for Ventura County Permittees (see Table F-25). Nevertheless, the Los Angeles Water Board acknowledges Permittees will need to complete additional implementation actions during the term of the Order to make progress

[374] Larry Walker Associates, "Preliminary Ventura County MS4 Permit Structural BMP Implementation Cost Estimate," dated June 1, 2017.

[375] See Attachment (PG Environmental. Technical Memorandum: WA 1-67 – Task D – Revised Cost Analysis and Identification of Representative Permittees with Relatively Higher Costs. April 8, 2018; PG Environmental. Technical Memorandum: WA 1-67 – Task D3 – Analysis of Costs for Select MS4 Permittees. June 29, 2018.)

towards, and ultimately achieve, compliance with the TMDL provisions where final compliance deadlines have not yet passed and/or compliance has not yet been achieved.

As also noted earlier, the Board previously considered the cost of complying with TMDL wasteload allocations assigned to MS4 discharges during the establishment of each TMDL. The costs of complying with these TMDLs, including the WQBELs derived from the TMDL WLAs, which are incorporated into the Order, are not additive. For example, the costs estimated for compliance with a TMDL for one pollutant in a watershed, such as metals, can be applied to the costs to achieve compliance with a TMDL for another pollutant in the same watershed, such as pesticides, because the same implementation strategies can be used for both pollutants. Several MS4 permittees have recognized this opportunity in the multi-pollutant TMDL implementation plans they have submitted (e.g. Ballona Creek Metals/Bacteria TMDLs and Machado Lake Pesticides/Nutrients TMDLs). In other words, the estimated cost of complying with the Ballona Creek Metals TMDL can apply to metals, pesticides, PCBs, and bacteria. The costs for complying with trash TMDLs are based on different implementation strategies (e.g., full capture devices), but those strategies are effective at removing metals and toxic pollutants as well.[376] Thus, the costs estimated for each TMDL should not be added to determine the cost of compliance with all TMDLs. The staff reports for the various TMDLs include this explanation, and also discuss the cost efficiencies that can be achieved by treating multiple pollutants. Further, as noted earlier, the Board's consideration of the cost of compliance in establishing each TMDL has resulted in lengthy implementation schedules to achieve water quality standards. These implementation schedules have been used to establish compliance schedules in the Order.

The Los Angeles Water Board compiled the cost of complying with TMDL wasteload allocations assigned to MS4 discharges in a staff memo titled "2020 Regional MS4 TMDL Compliance Costs," dated July 17, 2020 (TMDL Staff Report Cost Memo). Using costs estimated during the establishment of TMDLs, the TMDL Staff Report Cost Memo estimated the total capital cost of implementing the 45 TMDLs included in the Order to be $5.0B with total annual operation and maintenance (O&M) costs of $419.2M, yielding a total 20-year cost of $13.4B in 2019 dollars, undiscounted. This estimate is broken down by watershed in Table F-28, below. The estimated cost by Permittee is available in the Administrative Record for the Order.

[376] In connection with the Statewide Trash Amendments, the Los Angeles Water Board sent Permittees California Water Code Section 13383 Orders directing Permittees to notify the Los Angeles Water Board regarding how they intended to comply with the statewide trash control provisions. In so doing, Permittees have proposed a variety of implementation strategies (e.g., full capture devices as well as institutional controls), some of which may be effective at removing other pollutants as well and therefore may offset the cost of compliance with the TMDLs.

Table F-28. Estimated Costs of Implementing TMDLs Through the Order by Watershed (millions, 2019 dollars).

Watershed	Capital Cost	Annual Operation and Maintenance Cost	Total 20-Year Cost
Ballona Creek	$466.27	$61.40	$1,694.26
Calleguas Creek	$46.35	$2.90	$104.30
Dominguez Channel	$259.13	$1.21	$283.30
Los Angeles River	$2,297.78	$287.38	$8,045.42
Los Cerritos Channel	$322.24	$14.51	$612.42
Machado Lake	$18.87	$1.82	$55.27
Malibu Creek	$255.35	$6.46	$384.59
Marina Del Rey	$44.49	$0.04	$45.34
Miscellaneous Ventura Coastal	$4.86	$0.27	$10.32
San Gabriel River	$536.42	$26.82	$1,072.83
Santa Clara River	$163.65	$8.18	$327.35
Santa Monica Bay	$561.56	$5.73	$676.20
Ventura River	$27.81	$2.47	$77.24
Total Cost	**$5,004.77**	**$419.20**	**$13,388.85**

Source: Los Angeles Water Board analysis of TMDL Staff Reports

The TMDL Staff Report Cost Memo includes costs already incurred and costs expected to be incurred over the course of the TMDL implementation periods. The TMDL Staff Report Cost Memo does not include costs incurred from implementing the six stormwater management program elements, commonly referred to as “minimum control measures” or “MCMs.” Implementation of these requirements can be effective in reducing TMDL pollutants. For example, bacteria discharges can be reduced by implementing the effective prohibition on non-stormwater discharges as required by Clean Water Act section 402(p)(3)(B)(ii) and an illicit discharge detection and elimination program as required by “minimum control measures” established under 40 C.F.R. section 122.26(d)(2)(iv), which could largely, if not entirely, implement bacteria TMDLs, particularly during dry weather. The Order would include these requirements even in the absence of TMDLs, and their costs are therefore not included in the TMDL Staff Report Cost Memo. For purposes of considering Permittees’ cost of compliance, this estimate also does not include monitoring and reporting costs, which are included in Permittees’ annual reported costs presented further below, or costs for non-MS4-related TMDL implementation methods, such as dredging.

The projected cost estimates in the TMDL Staff Report Cost Memo were calculated by adding the costs estimated for each TMDL when they were established, accounting for costs which overlap in order to avoid double

counting. Many BMPs will implement multiple TMDLs at the same time so the cost of the BMP does not need to be included multiple times for each TMDL. For example, a BMP such as an infiltration project in the Los Angeles River watershed will reduce both bacteria and metals, as required by the Los Angeles River bacteria and metal TMDLs, therefore the cost is represented only once in this cost estimate.

For each watershed, TMDLs with overlapping BMPs and geography were identified, and the TMDL most costly to implement was chosen to represent the set of overlapping TMDLs. Where appropriate, MS4-related costs for the set of overlapping TMDLs were then added to costs of non-overlapping TMDLs implemented in the same watershed. For example, BMPs that implement trash TMDLs were assumed to not affect the progress of meeting other TMDLs. Therefore, for example, in the case of the Los Angeles River Watershed, the cost of implementing the bacteria and metal TMDLs (overlapping TMDLs) were added to the cost of implementing the trash TMDL (non-overlapping TMDL).

The TMDL Staff Report Cost Memo relied on cost estimates as included in the staff reports for Los Angeles Water Board-established TMDLs or the cost estimates as included in the staff reports for Los Angeles Water Board-established programs of implementation for U.S. EPA-established TMDLs. In some cases, costs for U.S. EPA-established TMDLs without Los Angeles Water Board-established programs of implementation were represented by an overlapping Los Angeles Water Board-developed TMDL. In other cases, the TMDL was based on "existing conditions," meaning that pollutant limits were based on existing pollutant concentrations, which were attaining water quality standards, and no additional costs were included in the TMDL Staff Report Cost Memo for that TMDL. When ranges were given for potential costs, the average of the range was used. When multiple implementation options were presented in the TMDL Staff Report, the mid-priced treatment option was chosen, or if only two options were available, the more expensive option was used. For certain TMDLs, where a preferred method of compliance was presented or where a certain compliance option was the overwhelmingly selected option for compliance by MS4 Permittees (e.g., catch basin inserts for trash), the costs of that preferred method were used. All costs were adjusted to 2019 dollars based on the Federal Reserve GDP Implicit Price Deflator.[377]

d. Method 2: Projected Costs from EWMPs and WMPs

As noted above, in the second method for estimating projected costs of complying with the Order, for Permittees in Los Angeles County, the Los Angeles Water Board compiled projected cost estimates contained in Watershed Management Programs and Enhanced Watershed Management Programs.[378] Permittees developing Watershed Management Programs were

[377] U.S. Bureau of Economic Analysis, Gross Domestic Product: Implicit Price Deflator [GDPDEF], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/GDPDEF, April 14, 2020.

[378] Los Angeles County Department of Public Works provided a Microsoft Excel spreadsheet of Permittees' projected cost estimates from September 2015. Upon review by Board staff, discrepancies were found in their total projected cost estimate values, and thus, LA County's projected cost estimate values are

not required to include a financial strategy; therefore, for some individual and group programs implementation cost estimates were not available. In these cases, "NR" is included in the tables below. For Permittees in Ventura County, Watershed Management Programs from similar jurisdictions in LA County were used to project compliance costs.[379]

i. Los Angeles County Permittees

Of the 87 Los Angeles County Permittees, the majority (83 out of 87[380]) elected to develop and implement Watershed Management Programs or Enhanced Watershed Management Programs as a compliance pathway for MS4 permit requirements. Of these 83 Permittees, most (80[381]) have chosen to collaboratively develop and implement these programs. There are 12 Enhanced Watershed Management Programs and 7 Watershed Management Programs that are being implemented by groups of Los Angeles County Permittees. These programs include estimates of the projected costs associated with their full implementation.

For EWMPs, Board staff calculated total costs over a 20-year timeframe, as shown in Table F-29. Most groups presented breakdowns of capital and O&M costs. Some groups reported cost ranges, therefore low and high estimates were calculated. Values were converted to 2019 dollars using the Federal Reserve GDP Implicit Price Deflator. A few EWMPs explicitly reported dollar years, but most did not. For those that did not, staff assumed that the dollar year was the same as the year that the plan was submitted or the year that the most recent plan revision was submitted. Capital costs range from $34.5M for North Santa Monica Bay to $6.5B for Upper LA River. Annual O&M costs range from $1.15M for North Santa Monica Bay to $123.4 for Upper LA River. Total costs for all EWMPs were estimated to be $19.8B to $19.9B in 2019 dollars, undiscounted.

Table F-29. Permittees' Projected Cost Estimates for EWMP Full Implementation (millions of dollars, 2019$).

EWMP Group	Capital (Low)	Capital (High)	Annual O&M (Low)	Annual O&M (High)	Total 20-Year Cost (Low)	Total 20-Year Cost (High)
Ballona Creek	$2,892.12	$2,892.12	$82.55	$82.55	$4,543.09	$4,543.09

not presented in this document. Instead, staff independently compiled cost estimates from Permittees' EWMPs and WMPs, as noted above.

[379] Larry Walker Associates, "Preliminary Ventura County MS4 Permit Structural BMP Implementation Cost Estimate," dated June 1, 2017.

[380] The cities of Compton, Gardena, Irwindale, and Rolling Hills opted not to develop and implement a Watershed Management Program or Enhanced Watershed Management Program. The City of Azusa has chosen to not continue its participation in a Watershed Management Program; however, the $1.46B cost estimate in Table F-29, below, includes the estimate developed for the original program, of which they were a participating Permittee.

[381] The cities of El Monte, La Habra Heights, and Walnut each opted to develop an individual Watershed Management Program that only addresses their jurisdictional area. The City of Long Beach participates in several Watershed Management Programs with other Los Angeles County Permittees. Additionally, it developed an individual Watershed Management Program for the nearshore areas that are exclusively within its jurisdiction.

EWMP Group	Capital (Low)	Capital (High)	Annual O&M (Low)	Annual O&M (High)	Total 20-Year Cost (Low)	Total 20-Year Cost (High)
Dominguez Channel	$1,340.65	$1,340.65	$15.39	$15.39	$1,648.41	$1,648.41
Malibu Creek	$201.54	$201.54	$3.86	$3.86	$278.71	$278.71
Marina del Rey[a]	$368.12	$368.12	$2.39	$2.39	$415.91	$415.91
North Santa Monica Bay[a]	$34.51	$34.51	$1.15	$1.15	$57.55	$57.55
Palos Verdes Peninsula Cities	$90.00	$129.50	$1.34	$1.52	$116.80	$159.90
Rio Hondo/San Gabriel River[b]	NR	NR	NR	NR	$121.80	$121.80
Santa Monica Bay J2 & J3[a]	$660.02	$660.02	$4.82	$4.82	$756.38	$756.38
South Bay Beach Cities	$46.13	$95.48	$2.15	$3.33	$89.04	$162.00
Upper LA River[c]	$6,541.98	$6,541.98	$123.38	$123.38	$9,009.65	$9,009.65
Upper San Gabriel River	$1,216.34	$1,216.34	$44.31	$44.31	$2,102.59	$2,102.59
Upper Santa Clara River[d]	$669.12	$669.12	NR	NR	$669.12	$669.12
Total					**$19,809.06**	**$19,925.11**

a. Some EWMPs presented total O&M costs over 20 years. These values were divided by 20 to calculate annual O&M costs.
b. Rio Hondo/San Gabriel River presented total costs including 20 years of O&M but did not present the breakdown between capital and O&M costs.
c. Upper LA River presented varying O&M costs in their EWMP. These values were averaged to obtain an annual O&M cost.
d. Upper Santa Clara River explicitly did not present O&M costs and assumed that they would be managed with existing resources.

Source: Los Angeles Water Board Analysis

WMP costs were not presented with breakdowns between capital and O&M costs, nor was it clear in most WMPs over what timeframe their projected costs would occur. Only the East San Gabriel Valley Cities and Long Beach Nearshore WMPs mentioned any analysis timeframes, which were 22 years and 5 years, respectively. Therefore, only raw total costs from WMPs are presented in Table F-30. Consistent with EWMP costs, WMP costs were also converted to 2019 dollars using the Federal Reserve GDP Implicit Price Deflator. Total costs for WMPs were estimated to be $1.1B to $1.4B.

Table F-30. Permittees' Projected Cost Estimates for WMP Full Implementation (millions of dollars, 2019$).

WMP Group	Total Cost (Low)	Total Cost (High)
Alamitos Bay	NR	NR
East San Gabriel Valley Cities[a,b]	$55.96	$55.96

WMP Group	Total Cost (Low)	Total Cost (High)
LA River Upper Reach 2[c]	$226.57	$226.57
Long Beach Nearshore[a]	$318.56	$392.89
Los Cerritos Channel	$356.18	$356.18
Lower LA River	$168.19	$314.15
Lower San Gabriel River	$37.15	$69.34
Santa Monica Bay J7	NR	NR
Total	**$1,163**	**$1,415**

a. East San Gabriel Valley Cities and Long Beach Nearshore were the only groups to mention an analysis timeframe. East San Gabriel Valley Cities estimated costs over 22 years; Long Beach Nearshore estimated costs over 5 years.
b. Costs for East San Gabriel Valley Cities are from their Adaptive Management Report Addendum from December 2019. Their original WMP costs were $251.4M to $545.3M.

In a presentation to the Los Angeles Water Board on March 2, 2017, the LA River Upper Reach 2 WMP Permittees shared that their order-of-magnitude estimate for the capital cost of their six regional projects decreased from approximately $210M to $102M after evaluating site conditions. This reduced the overall cost of fully implementing the WMP by one third from approximately $300M to $200M.

Source: Los Angeles Water Board Analysis

The total estimated projected cost for each individual Los Angeles County Permittee participating in one or more of the 19 WMPs/EWMPs is provided where possible in Table F-31. Seven of the 12 EWMPs and three of the eight WMPs reported costs by jurisdiction. If the individual Permittee is an EWMP member, its costs usually comprise capital costs plus 20 years of O&M. Some EWMPs, however, presented capital costs only when they presented their costs by jurisdiction, which is noted in Table F-31. Also noted are WMP costs, which did not present any breakdown between capital and O&M costs. A few WMPs presented an analysis timeframe, which is also noted in Table F-31.

Table F-31. Permittees' Projected Cost Estimates for WMP/EWMP Full Implementation, by Permittee (millions, 2019$)

Los Angeles County Permittee	Total Cost	Description
Agoura Hills	$86.72	Capital cost only
Alhambra	$268.53	Capital cost plus 20 years of O&M
Arcadia	NR	

Los Angeles County Permittee	Total Cost	Description
Artesia	$0.69	WMP cost, breakdown unknown, 10-year timeframe
Azusa	--	
Baldwin Park	$187.52	Capital cost plus 20 years of O&M
Bell	$53.12	WMP cost, breakdown, and timeframe unknown
Bell Gardens	$45.42	WMP cost, breakdown, and timeframe unknown
Bellflower	$3.19	WMP cost, breakdown unknown, 10-year timeframe
Beverly Hills	$169.35	Capital cost plus 20 years of O&M
Bradbury	NR	
Burbank	$305.93	Capital cost plus 20 years of O&M
Calabasas	$180.10	Capital cost only
Carson	$252.88	Capital cost only
Cerritos	$4.13	WMP cost, breakdown unknown, 10-year timeframe
Claremont	NR	
Commerce	$56.37	WMP cost, breakdown, and timeframe unknown
Compton	--	
Covina	$146.13	Capital cost plus 20 years of O&M
Cudahy	$33.61	WMP cost, breakdown, and timeframe unknown
Culver City	$220.80	Capital cost plus 20 years of O&M
Diamond Bar	$5.26	WMP cost, breakdown unknown, 10-year timeframe
Downey	$29.73	WMP cost, breakdown unknown, 10-year timeframe
Duarte	NR	
El Monte	NR	
El Segundo	$174.69	Capital cost only
Gardena	--	
Glendale	$423.25	Capital cost plus 20 years of O&M
Glendora	$224.17	Capital cost plus 20 years of O&M
Hawaiian Gardens	$1.27	WMP cost, breakdown unknown, 10-year timeframe
Hawthorne	$154.76	Capital cost only
Hermosa Beach	NR	
Hidden Hills	$15.16	Capital cost only
Huntington Park	$53.77	WMP cost, breakdown, and timeframe unknown

Los Angeles County Permittee	Total Cost	Description
Industry	$475.80	Capital cost plus 20 years of O&M
Inglewood	$231.94	Capital cost only
Irwindale	--	
La Cañada Flintridge	$96.49	Capital cost plus 20 years of O&M
La Habra Heights	NR	
La Mirada	$4.56	WMP cost, breakdown unknown, 10-year timeframe
La Puente	$132.80	Capital cost plus 20 years of O&M
La Verne	NR	
Lakewood	$2.02	WMP cost, breakdown unknown, 10-year timeframe
Lawndale	$32.28	Capital cost only
Lomita	$50.29	Capital cost only
Long Beach	$432.26	WMP cost, breakdown, and timeframe unknown
Los Angeles City[b]	$7,259.29	Capital cost plus partial O&M
Los Angeles County and Los Angeles County Flood Control District[b]	$2,474.05	Capital cost plus partial O&M
Lynwood	$28.63	WMP cost, breakdown, and timeframe unknown
Malibu	NR	
Manhattan Beach	NR	
Maywood	$33.50	WMP cost, breakdown, and timeframe unknown
Monrovia	NR	
Montebello	$207.34	Capital cost plus 20 years of O&M
Monterey Park	$189.11	Capital cost plus 20 years of O&M
Norwalk	$2.95	WMP cost, breakdown unknown, 10-year timeframe
Palos Verdes Estates	NR	
Paramount	$22.93	WMP cost, breakdown, and timeframe unknown
Pasadena	$407.00	Capital cost plus 20 years of O&M
Pico Rivera	$18.60	WMP cost, breakdown, and timeframe unknown
Pomona	NR	
Rancho Palos Verdes	NR	
Redondo Beach	NR	
Rolling Hills	--	

Los Angeles County Permittee	Total Cost	Description
Rolling Hills Estates	NR	
Rosemead	$166.51	Capital cost plus 20 years of O&M
San Dimas	NR	
San Fernando	$40.50	Capital cost plus 20 years of O&M
San Gabriel	$127.77	Capital cost plus 20 years of O&M
San Marino	$93.98	Capital cost plus 20 years of O&M
Santa Clarita	$394.27	Capital cost only
Santa Fe Springs	$4.02	WMP cost, breakdown unknown, 10-year timeframe
Santa Monica	$913.36	Capital cost plus 20 years of O&M
Sierra Madre	NR	
Signal Hill	$6.62	WMP cost, breakdown, and timeframe unknown
South El Monte	$108.77	Capital cost plus 20 years of O&M
South Gate	$50.42	WMP cost, breakdown, and timeframe unknown
South Pasadena	$60.98	Capital cost plus 20 years of O&M
Temple City	$92.44	Capital cost plus 20 years of O&M
Torrance	NR	
Vernon	$38.70	WMP cost, breakdown, and timeframe unknown
Walnut	NR	
West Covina	NR	
West Hollywood	$98.66	Capital cost plus 20 years of O&M
Westlake Village	$32.45	Capital cost only
Whittier	$12.12	WMP cost, breakdown unknown, 10-year timeframe

a. Individual Permittee projected cost estimates are not reported ("NR") for those Permittees participating in the North Santa Monica Bay, Palos Verdes Peninsula Cities, Rio Hondo/San Gabriel River, and South Bay Beach cities EWMPs, as well as the Alamitos Bay, East San Gabriel Valley Cities, Los Cerritos Channel, and Santa Monica Bay Jurisdictional Group 7. Costs are also not available for the cities with individual WMPs, except for Long Beach. For Permittees that are not participating in a WMP or EWMP, "—" is indicated.

b. Bellflower, Los Angeles, Los Angeles County, Los Angeles Flood Control District, and Signal Hill costs are underestimates because some EWMP/WMP groups that include them did not break down costs by jurisdiction.

Source: Los Angeles Water Board Analysis

ii. Ventura County Permittees

While the prior Ventura County MS4 Permit (Order No. R4-2010-0108) included requirements to implement WQBELs consistent with the assumptions and requirements of TMDL wasteload allocations assigned to MS4 discharges, it did not include provisions allowing Ventura County

Permittees to develop and implement watershed management programs as a compliance pathway for permit requirements. Therefore, Permittee estimates of projected costs specific to the watershed areas in Ventura County are not generally available. However, Ventura County Permittees have estimated projected costs based on information contained in EWMPs developed in Los Angeles County. The analysis and estimates are presented in a technical memorandum prepared by Larry Walker Associates for Ventura County Permittees, "Preliminary Ventura County MS4 Permit Structural BMP Implementation Cost Estimate," dated June 1, 2017.

The EWMPs considered include those for the Upper Santa Clara River, Malibu Creek (the portion within Los Angeles County only), Santa Monica Bay J2 and J3, Upper San Gabriel River, and North Santa Monica Bay Coastal Watersheds. According to the technical memorandum, these EWMPs were selected given their similarity to land use characteristics in Ventura County and to capture the various approaches to selecting the EWMP control measures used in Los Angeles County. As described in the technical memorandum, capital costs per acre of urban area treated were extracted from each of these Los Angeles County EWMPs. A series of unit cost summary statistics were computed including average (mean), median, 25th percentile and 75th percentile. The urban MS4 jurisdictional area for each Ventura County Permittee was multiplied by the 25th percentile unit cost and was assumed to represent the low end of the range of anticipated capital costs. Similarly, the urban MS4 jurisdictional area was multiplied by the 75th percentile unit cost and was assumed to represent the high end of range of expected capital costs. Based on this analysis, total projected capital cost estimates range from $272M to $2.0B in 2019 dollars for full implementation through 2040. The total estimated projected cost for each individual Ventura County Permittee is provided in Table F-32.

Table F-32. Ventura County Permittees' Projected Capital Cost Estimates for Full Implementation through 2040, by Permittee (millions, 2019$).

Permittee	25th percentile EMWP Costs	75th percentile EWMP Costs	Average EWMP Costs	Median EWMP Costs
Camarillo	$23.40	$173.46	$88.56	$49.07
Fillmore	$3.56	$26.39	$13.47	$7.47
Moorpark	$13.00	$96.37	$49.20	$27.26
Ojai	$5.71	$42.34	$21.62	$11.98
Oxnard	$41.89	$310.56	$158.55	$87.85
Port Hueneme	$3.55	$26.35	$13.45	$7.45
Ventura	$33.43	$247.82	$126.52	$70.10
Santa Paula	$6.90	$51.15	$26.11	$14.47
Simi Valley	$42.20	$312.84	$159.71	$88.49
Thousand Oaks	$53.86	$399.29	$203.85	$112.95

Permittee	25th percentile EMWP Costs	75th percentile EWMP Costs	Average EWMP Costs	Median EWMP Costs
Unincorporated County	$44.93	$333.06	$170.04	$94.21
Watershed Protection District[a]	-	-	-	-
Total Projected Cost Estimate	**$272.42**	**$2,019.62**	**$1,031.08**	**$571.29**

Note: O&M costs and land acquisition costs (if they are necessary) are not included in the estimates.

a. A projected cost estimate could not be computed for the Ventura County Watershed Protection District using this method, since the land area within the Watershed Protection District is already accounted for in the jurisdictional area of the 10 cities and unincorporated area of Ventura County.

Source: Larry Walker Associates, June 1, 2017, "Preliminary Ventura County MS4 Permit Structural BMP Implementation Cost Estimate"

The technical memorandum also separately included estimates of projected operation and maintenance (O&M) costs for the capital projects anticipated in the table above for each Ventura County Permittee. Total O&M costs range from $9.5M to $119.2M, as shown in Table F-33.

Table F-33. Ventura County Permittees' Projected Annual O&M Cost Estimates for Capital Projects (millions, 2019$).

Permittee	Watershed(s)	Low Annual O&M Cost Estimate	High Annual O&M Cost Estimate
Camarillo	Calleguas Creek Watershed (CCW)	$0.82	$10.23
Fillmore	Lower Santa Clara River Watershed (LSCRW)	$0.13	$1.56
Moorpark	CCW	$0.46	$5.69
Ojai	Ventura River Watershed (VRW)	$0.20	$2.50
Oxnard	LSCRW, CCW, Coastal	$1.47	$18.32
Port Hueneme	CCW	$0.12	$1.56
Ventura	LSCRW, VRW	$1.17	$14.62
Santa Paula	LSCRW	$0.24	$3.02
Simi Valley	CCW	$1.48	$18.46

Permittee	Watershed(s)	Low Annual O&M Cost Estimate	High Annual O&M Cost Estimate
Thousand Oaks	CCW, MCW	$1.89	$23.56
Unincorporated County	LSCRW, CCW, VRW, Malibu Creek Watershed (MCW), Coastal (Countywide)	$1.57	$19.65
Total	**-**	**$9.54**	**$119.16**

Source: Larry Walker Associates, June 1, 2017, "Preliminary Ventura County MS4 Permit Structural BMP Implementation Cost Estimate"

Combining low and high estimates of capital costs and O&M costs yields total 20-year cost estimates of $463.2M to $4.4B for Ventura County, as shown in Table F-34.

Table F-34. Ventura County Permittees' Projected Total Cost Estimates for Capital Projects (millions, 2019$).

Permittee	25th percentile EMWP Costs	75th percentile EWMP Costs	Low Annual O&M Cost	High Annual O&M Cost	Low Total 20-Year Cost	High Total 20-Year Cost
Camarillo	$23.40	$173.46	$0.82	$10.23	$39.78	$378.16
Fillmore	$3.56	$26.39	$0.13	$1.56	$6.06	$57.53
Moorpark	$13.00	$96.37	$0.46	$5.69	$22.11	$210.07
Ojai	$5.71	$42.34	$0.20	$2.50	$9.71	$92.31
Oxnard	$41.89	$310.56	$1.47	$18.32	$71.22	$677.01
Port Hueneme	$3.55	$26.35	$0.12	$1.56	$6.03	$57.45
Ventura	$33.43	$247.82	$1.17	$14.62	$56.84	$540.25
Santa Paula	$6.90	$51.15	$0.24	$3.02	$11.73	$111.49
Simi Valley	$42.20	$312.84	$1.48	$18.46	$71.73	$681.98
Thousand Oaks	$53.86	$399.29	$1.89	$23.56	$91.57	$870.45
Unincorporated County	$44.93	$333.06	$1.57	$19.65	$76.38	$726.07
Total Projected Cost Estimate	**$272.42**	**$2,019.62**	**$9.54**	**$119.16**	**$463.17**	**$4,402.77**

Permittee	25th percentile EMWP Costs	75th percentile EWMP Costs	Low Annual O&M Cost	High Annual O&M Cost	Low Total 20-Year Cost	High Total 20-Year Cost

Source: Larry Walker Associates, June 1, 2017, "Preliminary Ventura County MS4 Permit Structural BMP Implementation Cost Estimate"; *Los Angeles Water Board Analysis*

e. WMP Development Costs

In addition to costs of implementing structural BMPs, Permittees in Ventura County may incur initial costs to develop WMPs. Los Angeles County and the City of Long Beach have already undergone the development process for EWMPs and WMPs under their permits for 2012 and 2014, respectively. Thus, we present development costs for only Ventura County. Although Ventura County currently does not have any WMPs, the County estimated potential development costs were they to participate in the WMP process, as shown in Table F-35. Costs were inflated to 2019 dollars using the GDP implicit price deflator and assumed to be incurred in the next permit period. Potential development costs were based on the development process in the 2012 Los Angeles County MS4 Permit, which included creating a Work Plan (for EWMPs), preparing a draft WMP or EWMP, and preparing a final WMP or EWMP. Groups were also required to submit Notices of Intent and, in the case of Permittees developing an EWMP, Memoranda of Understanding to the Board at the beginning of the development process. Additionally, Permittees incur costs to develop companion CIMPs. While this process has been streamlined in this Order (e.g., elimination of Work Plan and MOU requirements, reduction in requirements for Notices of Intent), the projected costs were not reduced.

Table F-35. Ventura County WMP Development Costs (millions, 2019$).

Watershed	Overall
Coastal watersheds	$0.26
Calleguas Creek Watershed (CCW)	$0.26
Lower Santa Clara River Watershed (LSCRW)	$0.26
Malibu Creek Watershed (MCW)	$0.68
Ventura River Watershed (VRW)	$0.68
Total	**$2.14**

Source: Larry Walker Associates, June 1, 2017, "Preliminary Ventura County MS4 Permit Structural BMP Implementation Cost Estimate"

The Ventura Countywide Stormwater Quality Management Program estimated development costs of about $260,000 for smaller, less complex watersheds (Coastal, CCW, and LSCRW) and $680,000 for more complex watersheds (MCW and VRW). Total estimated WMP development costs for Ventura County are $2.14M.

f. Costs of Stormwater Management Program

In addition to the estimates of projected costs for TMDL implementation and projected costs from WMPs and EWMPs, it is generally assumed that Permittees will continue to incur costs similar to or less than those they have reported under Order Nos. R4-2010-0108, R4-2012-0175 and R4-2014-0024 to implement their stormwater management programs' "minimum control measures" and conduct monitoring and reporting.[382] These costs have been reported by Permittees in their Annual Reports and, therefore, are captured by the cost estimates in Table F-36 and Table F-37. For LA County, annual total costs were averaged over three fiscal years, FY16/17-18/19. Over this more recent period, the cost reporting was more consistent across Permittees and reflects the costs, inclusive of enhanced "minimum control measures" in WMPs and EWMPs and CIMPs, almost all of which were approved by FY15/16. For Ventura County, annual total costs were averaged over the term of the prior permit, from FY10/11-FY18/19. Structural BMP costs were removed from the tabulation, as these costs are accounted for in Methods 1 and 2. Due to different cost reporting formats for Ventura County and LA County, capital costs were omitted for Permittees in Ventura County, whereas for Permittees in LA County, costs for Distributed Projects and Green Streets, Regional Projects, and Restoration Projects were omitted.

i. Ventura County Permittees: For Ventura County Permittees, these projected annual stormwater program costs are provided in Table F-36 based on the average anticipated budgets reported in the Ventura Countywide Storm Water Quality Management Program Annual Reports during the term of the prior permit (i.e., FY10/11 through 18/19).[383] Costs for each year were converted to 2019 dollars using the Federal GDP Implicit Price Deflator then averaged to calculate projected annual costs.

Table F-36. Estimated Annual Costs Incurred by Ventura County MS4 Permittees for Stormwater Programs (2019$)

Permittee	Watershed(s)	Projected Annual Stormwater Program Costs[a]
Camarillo	CCW	$1,442,616.9
Fillmore	LSCRW	$191,449.1
Moorpark	CCW	$509,800.0
Ojai	VRW	$124,773.8
Oxnard	LSCRW, CCW, Coastal	$2,170,929.7
Port Hueneme	CCW	$435,384.0

[382] For example, instrumenting outfalls with autosamplers is not a recurring activity and was conducted under the prior permits. Additionally, the Order's minimum control measures provide more flexibility to the Permittees for implementation, relative to the prior permits, allowing Permittees to explore more cost-effective and efficient approaches to implementing their stormwater management programs.

[383] These estimates were calculated by Los Angeles Water Board staff based on a review of the Ventura County Permittees' Annual Reports.

Permittee	Watershed(s)	Projected Annual Stormwater Program Costs[a]
Ventura	LSCRW, VRW, Coastal	$1,601,130.5
Santa Paula	LSCRW	$130,806.0
Simi Valley	CCW	$2,057,068.4
Thousand Oaks	CCW, MCW	$1,427,586.4
Unincorporated County	LSCRW, CCW, VRW, MCW, Coastal	$2,851,452.0
Watershed Protection District	LSCRW, CCW, VRW, MCW, Coastal	$3,073,985.6
Total	-	**$18,252,525.2[b]**

a. Projected costs based on analysis period FY10/11 through 18/19.

b. Note that the total includes a separate line item for "Principal Co-Permittee" that was identified in the Annual Reports. As discussed in Part II.C of this Fact Sheet, the Principal Co-Permittee designation given to VCWPD is not being carried over to the Regional MS4 Permit. Where the anticipated budget for the Principal Co-Permittee addresses ongoing requirements under the Regional MS4 Permit, it is assumed that those will either be incurred by VCWPD or will be divided among all Ventura County Permittees in some manner.

Source: Los Angeles Water Board analysis of Ventura County Permittees' Annual Reports

ii. Los Angeles County Permittees: For Los Angeles County Permittees, these projected annual stormwater program costs are provided in Table F-37 based on the average expenditures reported in the Permittees' Annual Reports from FY16/17-18/19 to account for enhanced MCMs in approved WMPs and EWMPs and monitoring in CIMPs, which were almost all approved by FY15/16. Costs for each year were converted to 2019 dollars using the Federal GDP Implicit Price Deflator then averaged to calculate projected annual costs.

Table F-37. Estimated Annual Costs Incurred by Los Angeles County Permittees for Implementation of Stormwater Programs (2019$)

Permittee	Projected Annual Stormwater Program Costs[a]
Agoura Hills	$677,283
Alhambra	$841,390
Arcadia	$277,536
Artesia	$183,471
Azusa	$400,831
Baldwin Park	$1,974,599

Permittee	Projected Annual Stormwater Program Costs[a]
Bell	$382,957
Bell Gardens	$465,451
Bellflower	$467,739
Beverly Hills	$2,778,077
Bradbury	$339,200
Burbank	$4,454,050
Calabasas	$335,262
Carson	$152,071
Cerritos	$879,717
Claremont	$2,601,725
Commerce	$2,007,753
Compton	$499,531
Covina	$599,559
Cudahy	$226,321
Culver City	$750,840
Diamond Bar	$704,592
Downey	$1,153,964
Duarte	$372,344
El Monte	$843,327
El Segundo	$2,324,868
Gardena	$601,689
Glendale	$749,602
Glendora	$363,889
Hawaiian Gardens	$137,594
Hawthorne	$893,207
Hermosa Beach	$763,531
Hidden Hills	$121,853
Huntington Park	$1,001,928
Industry	$1,089,656
Inglewood	$2,248,635
Irwindale	$656,161
La Canñada Flintridge	$255,438

Permittee	Projected Annual Stormwater Program Costs[a]
La Habra Heights	$72,521
Lakewood	$718,609
La Mirada	$106,913
La Puente	$4,677,491
La Verne	$3,580,505
Lawndale	$79,132
Lomita	$223,980
Long Beach	$3,040,065
Lynwood	$726,912
Malibu	$1,744,270
Manhattan Beach	$4,854,454
Maywood	$197,794
Monrovia	$405,408
Montebello	$4,129,272
Monterey Park	$488,995
Norwalk	$1,676,191
Palos Verdes Estates	$203,724
Paramount	$740,156
Pasadena	$3,111,035
Pico Rivera	$927,212
Pomona	$1,898,263
Rancho Palos Verdes	$546,507
Redondo Beach	$2,210,476
Rolling Hills	$112,642
Rolling Hills Estates	$407,961
Rosemead	$369,839
San Dimas	$436,425
San Fernando	$206,698
San Gabriel	$296,542
San Marino	$314,506
Santa Clarita	$3,465,294
Santa Fe Springs	NR

Permittee	Projected Annual Stormwater Program Costs[a]
Santa Monica	$8,792,906
Sierra Madre	$302,128
Signal Hill	$820,861
South El Monte	$253,312
South Gate	$2,600,109
South Pasadena	$211,808
Temple City	$305,325
Torrance	$4,382,214
Vernon	$1,167,982
Walnut	$205,501
West Covina	$889,398
West Hollywood	$807,661
Westlake Village	$303,071
Whittier	$633,310
Los Angeles	$47,099,437
Los Angeles County	$49,739,440
Los Angeles County Flood Control District	$38,748,435
Total	$234,810,330

a. Projected costs based on analysis period FY 16/17 through 18/19.

Source: Los Angeles Water Board analysis of Los Angeles County Permittees' Annual Reports

Using the Stormwater Management Program costs reported by the Permittees, Los Angeles County Permittees expended a high of $315 per capita per year (Bradbury) to a low of $1.66 per capita per year (Carson) over the period 2016-2019.[384] Ventura County Permittees expended a high of $21.49 per capita per year (Camarillo) and a low of $4.35 per capita per year (Santa Paula) over the period 2010-2019.[385]

[384] For calculations, see Stormwater_Management_Program_Cost_Analysis_LAC_Final.xlsx in the Administrative Record; the cities of Industry, Irwindale and Vernon were not considered when presenting this range of per capita cost due to their very low populations relative to their land area.

[385] For calculations, see Ventura_Storwmater_Management_Program_Cost_Final.xlsx in the Administrative Record

g. Summary of total costs estimated from Method 1, Method 2, and Stormwater Management Program Costs

A summary of total cost estimates of complying with the Order is presented in Table F-38 for Method 1 and Table F-39 for Method 2. Costs from Methods 1 and 2 were added to WMP development costs (for Ventura County Permittees) and Stormwater Management Program costs (for all Permittees). Calculating costs using Method 1, which analyzed structural BMP costs estimated in Staff Reports at the time of TMDL development, yielded a total compliance cost of about $13.4B for structural BMPs. Combined with WMP development and Stormwater Management Program costs, total costs were estimated to be $18.5B. With Method 2, which analyzed structural BMP costs presented in EWMPs and WMPs, total costs ranged from about $21.4B to $25.7B for structural BMPs. Adding WMP development and Stormwater Management Program costs yielded a total cost of $26.5B to $30.8B.

Table F-38. Total 20-Year MS4 Costs Estimated from Method 1 (millions, 2019$)

Method 1 Costs	TMDL Staff Report Costs	WMP Development	Stormwater Management Program	Total Projected MS4 Costs
LA County	–	–	$4,696.21	–
Ventura County	–	$2.14	$365.05	–
Total	**$13,388.85**	**$2.14**	**$5,061.26**	**$18,452.24**

Source: Los Angeles Water Board Analysis

Table F-39. Total 20-Year MS4 Costs Estimated from Method 2 (millions, 2019$)

Method 2 Costs	EWMP/WMP Costs		WMP Development	Stormwater Management Program	Total Projected MS4 Costs	
	Low	High			Low	High
LA County	$20,972,06	$21,340.11	–	$4,696.21	$25,668.27	$26,036.32
Ventura County	$463.17	$4,402.77	$2.14	$365.05	$828.22	$4,767.82
Total	**$21,435.23**	**$25,742.88**	**$2.14**	**$5,061.26**	**$26,498.62**	**$30,806.27**

Source: Los Angeles Water Board Analysis

2. Uncertainties in Projected Costs of Compliance

As set forth above, the projected costs, and actual costs, to implement stormwater programs are a significant issue for Permittees. However, it has been, and continues to be, difficult to ascertain the cost at a planning level of fully implementing decades-long stormwater and urban runoff management programs, especially where significant flexibility has been provided to the Permittees to comply both with regard to the manner of compliance and the timeframes for achieving compliance, including permit provisions that allow Permittees to request modifications to both how they achieve compliance and the timeframes for doing so.

There are myriad reasons for this, including but not limited to:

- Innovations in BMPs over time that reduce costs and/or increase pollutant removal;
- Changes in consumer products that reduce or eliminate pollutants in MS4 discharges;
- Limitations of modeling used to identify BMPs that need to be implemented to achieve required water quality outcomes, requiring water quality data for verification/periodic recalibration;
- Imprecise data at the planning stage on site-specific conditions for siting BMPs, which can significantly affect BMP sizing requirements as well as the types of BMPs that can be used at a site; and
- Evolving science and evaluation of local conditions that may support site-specific water quality objectives.

a. Actual Costs: Implementation of Water Quality Improvements Through EWMPs and WMPs

As noted earlier, costs are difficult to reliably estimate at the planning stage. Data collected thus far from some Los Angeles County Permittees participating in WMPs and EWMPs indicate that these initial planning-level projected costs were sometimes over-estimated. For example, Permittees implementing the Los Angeles River Upper Reach 2 WMP found that site-specific conditions (namely, infiltration rates) for their regional BMPs were much more favorable than anticipated, allowing them to significantly reduce the BMP footprint size. This, in turn, reduced the estimated cost of their proposed regional BMPs by half from $209M to $102M.[386]

Several other examples illustrate the same point:

- Ladera Park Stormwater Capture Project (Ballona Creek EWMP): The projected construction cost in the EWMP was $7M, while the actual construction cost was $4.9M, a savings of 30%.[387]
- Roosevelt Park Stormwater Capture Project (Upper LA River EWMP): The projected construction cost was $33M, while the actual construction cost was $9M, a savings of over 70%.[388]
- Carriage Crest Stormwater Capture Project (Dominguez Channel EWMP): The projected construction cost was $8.7M for a BMP capacity of 9 acre-feet. During design, the BMP capacity was increased by threefold to 27 acre-feet. Additionally, the BMP type was modified from an infiltration project to a diversion to the adjacent wastewater reclamation facility. The actual construction cost for the BMP was $15.6M.[389] This equates to a reduction in the cost per acre-foot from $967,000 to $578,000.

[386] Presentation by CWE and Tetra Tech on behalf of Permittees in the Los Angeles River Upper Reach 2 WMP, "Los Angeles River Upper Reach 2 Watershed Management Area: Watershed Management Program Implementation Status Update," presented at March 2, 2017 meeting of the Los Angeles Regional Water Quality Control Board. Note that the Permittees had proposed six regional BMPs; given favorable site conditions, the group was able to eliminate one of these BMPs, while still addressing permit requirements.

[387] Los Angeles County Dept. of Public Works, "DRAFT: EWMP Planning Cost vs. Actual Cost for Unincorporated County Projects," handout at July 17, 2019 meeting with Los Angeles Water Board staff.

[388] Ibid.

[389] Ibid.

Permittees also have discretion in deciding how to comply with permit requirements, including requirements to comply with WQBELs and receiving water limitations. What is practicable in one community may not work in another because of differences in population, land use, hydrology, pollution sources, water uses, municipal infrastructure, and community priorities, among other things. For example, as discussed earlier, Permittees participating in the Rio Hondo/San Gabriel River EWMP were prompted to adapt their program to address an error in the initial modeling that overestimated the necessary load reduction for lead, which was identified when reviewing monitoring data, and to be more practicable for their communities by changing the suite of BMPs to be implemented while still addressing permit requirements. These changes reduced the estimated cost by over 90% from $1.4B to $121.7M.[390] In other cases, however, site conditions may have been less favorable than anticipated, which can increase the cost. For example, the cost estimate for the Gates Canyon Stormwater Capture Project in the Malibu Creek EWMP was $4.1M, while the actual construction cost was twice that amount at $8.5M. This increase was because the original concept included an infiltration basin but due to geological constraints the project was modified to a water harvesting system with emergency bypass dry wells.[391]

Furthermore, some EWMPs present assumed land acquisition costs in their cost functions that equate to $5.6M-$6.1M per acre for BMPs installed on private parcels[392], which would not need to be incurred if Permittees engage in public-private partnerships as municipalities elsewhere in the U.S. have begun doing within the last several years (further discussed in Part XIII.D.2.d of this Fact Sheet). This would result in substantial cost savings.

b. Difficulties in Estimating Costs

Many of the disparities between estimated and reported costs such as those described above are due to the difficulties in reliably estimating costs at the planning stage. Additionally, as noted earlier, reported costs of compliance for the same program element can vary widely from permittee to permittee. To date, standardized methods to estimate the costs of stormwater pollution reduction approaches, particularly on a watershed or subwatershed scale, have not been developed. While there are appropriate grounds for differences among MS4 permits, differences of a very wide margin are not easily explained.[393] As noted, some cost estimates have been over-reported. In other

[390] Rio Hondo/San Gabriel River Water Quality Group, "Rio Hondo/San Gabriel River Revised Watershed Management Program," May 17, 2019. It is noted that $379M of the original cost, about 30%, was attributable to EWMP implementation in the City of Azusa, which discontinued its participation in the revised WMP.

[391] Los Angeles County Department of Public Works, "DRAFT: EWMP Planning Cost vs. Actual Cost for Unincorporated County Projects," handout presented at July 17, 2019 meeting with Los Angeles Water Board staff.

[392] Ballona Creek, Malibu Creek, Upper LA River, Upper Santa Clara River assumed a land acquisition cost of $129 per square foot, or $5.6M per acre. Upper San Gabriel River assumed a land acquisition cost of $139.01 per square foot, or $6.1M per acre.

[393] Radulescu, Dan, and Xavier Swamikannu. *Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003*. Los Angeles Regional Water Quality Control Board, January 2003. p. 2. Web. 20 June 2019.

cases, costs are reported that Permittees would have incurred regardless of their MS4 permit requirements. Not all reported program costs are solely attributable to compliance with requirements of the MS4 permit. Many program components, and their associated costs, existed before the first MS4 permits were issued in the 1990s. A 2005 State Water Board study found that certain reported costs included activities that provide separate and additional municipal benefits such as street sweeping and storm drain and channel cleaning and that the inclusion of these activities and their associated costs was not uniform across municipalities. These costs along with others like solid waste/litter collection costs are not solely or even principally attributable to MS4 permit compliance since these practices have long been implemented by municipalities. Also, some stormwater control measures may be integrated into multi-benefit projects serving many objectives (e.g., a public park whose mowing maintenance schedule is designed to maximize stormwater retention). Other measures may start out as stormwater control measures only to become expected by residents for their other benefits (e.g., dog waste bags at public parks). Therefore, the program cost related to complying with MS4 permit requirements is often some fraction of the total reported costs.

The State Water Board study also noted inherent limitations in the cost data quality. The most significant data quality limitation cited is that the costs provided by the municipalities were not sufficiently detailed or referenced to provide opportunity for independent review of the accuracy and completeness of the cost data. Similarly, the costs presented in the prior MS4 permits in the Los Angeles Region were not presented with supporting data or references so that they can be independently reviewed. Los Angeles Water Board staff often had to seek additional information and clarification from Permittees regarding their reported costs.[394]

Note that these issues were evaluated in detail in the 2012 Los Angeles County MS4 Permit Fact Sheet and in the State Water Board study. A key finding of the State Water Board study was that a significant portion (greater than 50%) of the costs attributed to stormwater compliance activities also provides additional municipal benefits.[395] The remainder of program costs was either pre-existing or resulted from enhancement of pre-existing programs.[396] The County of Orange found that an even lesser amount of program costs was solely attributable to MS4 permit compliance, reporting that the cost attributable to implementation of its Drainage Area Management Plan is less than 20 percent of the total budget. The remaining 80 percent is attributable to pre-existing programs.[397]

Despite these problems, the Board has endeavored to estimate the possible range of costs of compliance with the Order, including WQBELs as presented in Part XIII.D.1 above.

[394] See select Annual Report review letters, for example.
[395] Currier, Brian K., Joseph M. Jones, Glenn L. Moeller. “NPDES Stormwater Cost Survey, Final Report,” Prepared by California State Water Resources Control Board, California State University Sacramento, Office of Water Programs, January 2005.
[396] *Ibid.*, p. 58.
[397] County of Orange, 2000. *A NPDES Annual Progress Report.* p. 60.

c. Improvements in Cost Estimation & Reporting

There are several initiatives in progress to address the challenges of accurately quantifying and reporting the costs to implement stormwater programs, including an effort undertaken by the State Water Board's Office of Research Planning and Performance (ORPP)[398] to provide guidance on estimation of costs to implement TMDLs and consistent tracking and reporting by municipalities of costs of permit compliance. The Environmental Finance Center (EFC)[399] at California State University, Sacramento recently compiled existing resources on stormwater infrastructure costs and developed suggested guidance to explain best practices for estimating costs. EFC's effort evolved from the State Water Board study in 2005 and includes estimates of costs for permit compliance activities, technical resources that assist stormwater managers, and project costs for both green and grey infrastructure.

ORPP's guidance describes methods for obtaining information on compliance approaches and associated costs and for completing an independent analysis of costs. The guidance strives to promote greater consistency and transparency related to estimation of costs to implement TMDLs. ORPP notes that, even with improved guidance, precise cost estimation remains challenging and the level of precision possible may be low in many cases. For example, industry-wide, there is no uniform database of projects' components and costs to date.

ORPP's guidance as well as the EFC's initiative and others are improving the basis for cost reporting by municipalities and, as a result, the Water Boards' consideration of economics in issuing permits. Los Angeles Water Board staff has participated in developing the ORPP guidance and has provided input on the EFC's initiative, and has considered this information when drafting the Order and associated reporting requirements in Attachments E (Monitoring and Reporting Program or MRP) and H (Annual Report Form). Using this guidance, section 2 (Program Expenditures) of Attachment H requires that all Permittees report costs in a uniform manner based on clearly defined program categories and cost elements. See, also, Table 2.2 in Attachment H.

d. Increasing cost-effectiveness through public-private partnerships

Estimated compliance costs as presented in this Fact Sheet are based on current and past compliance methods. However, Permittees in the Los Angeles region could use relatively new financing and contracting mechanisms that fall under the umbrella of pay-for-performance, a form of public-private partnership, to contribute towards meeting MS4 requirements more cost-effectively while also implementing multi-benefit green infrastructure on private property without needing to acquire private land, which a number of local jurisdictions in the U.S. have done. These pay-for-

[398] State Water Board, Office of Research Planning and Performance (ORPP), Guidance for Future Total Maximum Daily Load (TMDL) Municipal Storm Water Cost Estimation, April 16, 2019; State Water Board, ORPP, Guidance for Obtaining Phase I Municipal Separate Storm Sewer System Permit (MS4) Compliance Costs, December 19, 2019.

[399] Environmental Finance Center at Sacramento State. 2020 May. Estimating Benefits and Costs of Stormwater Management, Part II: Evaluating Municipal Spending in California. https://www.efc.csus.edu/reports/efc-cost-project-part-2.pdf

performance models, also known as pay-for-success, incentivize contractors to find private properties on which to construct green infrastructure, leading to more distributed stormwater capture and benefits, as well as lower costs and faster project timelines than traditional BMP implementation. For example, Philadelphia's Green Acres Retrofit Program encourages contractors to develop portfolios of multiple projects, spreading out risk, and property owners can reduce their stormwater fee if they accept a project on their property. Another example is Prince George's County's Clean Water Partnership, a community-based public-private partnership that prioritizes local minority-owned contractors and develops a local workforce specializing in green infrastructure. These municipalities have used public-private partnerships to supplement gray stormwater infrastructure with green infrastructure, which could also reduce the need for gray infrastructure. By adapting elements of existing public-private partnerships from other parts of the U.S., Permittees in the Los Angeles region have opportunities to green urban landscape and meet MS4 requirements more quickly, cost-effectively, and in the manner that works best locally.

Public-private partnerships can be more cost-effective than traditional stormwater BMP implementation for several reasons. Public-private partnerships structured under a pay-for-performance model shifts risk from municipalities to private partners.[400] While details of specific pay-for-performance models established by different municipalities vary, municipalities essentially pay private contractors for outcomes, such as when BMPs promised to capture a certain amount of stormwater are successfully completed. Municipalities are not involved in the specific design and management of the BMPs. Municipalities may choose to pay only after construction completion, or they may make payments at certain stages of construction. They may also structure payment models to pay contractors for operations and maintenance over certain time intervals if BMPs are shown to still be effective over those time intervals. In addition, because municipalities would solicit bids from multiple parties, this fosters competition and increases cost-effectiveness. For example, Prince George's County saved more than 40% on costs compared to traditional procurements.[401] And Philadelphia pays a maximum of $90,000 per acre on private land in its Greened Acre Retrofit Program, compared to the $250,000-$300,000 per acre for green infrastructure on public land, a savings of 64%-70%.[402]

Public-private partnerships could also achieve faster BMP construction due to the nature of being located on private property. There would be fewer administrative steps compared to BMP implementation on public land. Also, projects on private property are more likely to be smaller, simpler projects that could be completed much faster than intensive, major projects on public

[400] Environmental Incentives. 2017. Pay for Performance Contract Mechanisms for Stormwater Management. 8https://enviroincentives.com/wp-content/uploads/2017/05/Pay-for-Performance-Contract-Mechanisms-for-Stormwater.pdf

[401] WaterWorld. 2019. Prince George's County, Corvias complete stormwater partnership ahead of schedule, under budget. https://www.waterworld.com/environmental/article/16218798/prince-georges-county-corvias-complete-stormwater-partnership-ahead-of-schedule-under-budget

[402] Valderrama, Alisa and Paul Davis. 2015. How Philadelphia's Greened Acre Retrofit Program is catalyzing low-cost green infrastructure retrofits on private property. Natural Resources Defense Council. https://www.nrdc.org/sites/default/files/philadelphia-green-infrastructure-retrofits-IB.pdf

property that require specialized equipment and expertise. Furthermore, there is significantly more land that is private than public. Encouraging public-private partnerships would open up many more available locations for BMPs.

Public-private partnerships can be structured in a way to prioritize certain areas for green infrastructure and steer employment towards communities who need it most. Private properties with more impervious surface already present greater opportunity for green infrastructure installation, and higher levels of impervious surface are often correlated with lower levels of neighborhood income, so contractors would already find more green infrastructure opportunities in lower-income neighborhoods. In Los Angeles County, where property owners are subject to the Measure W parcel tax, the opportunity to reduce the tax could be an incentive for property owners to accept the installation of green infrastructure on their property, particularly for lower-income property owners. However, municipalities can offer further incentives, paying more for projects located in neighborhoods with higher need, as was done in a stormwater credit trading program in Washington, D.C.[403] Municipalities can also offer to pay more for local and/or minority-owned contractors, as was done in Prince George's County, where greater than 80% of contracts went to local minority-owned businesses. This would provide areas with the greatest need, i.e. low-income, often non-white, and disproportionately impacted by the COVID-19 pandemic, with opportunities for green jobs and greener neighborhoods.[404]

3. Sources of Funding for Permittees and Potential Impacts to Funding Sources Due to COVID-19 and Recovery Efforts

Permittees are required to secure the resources necessary to meet the requirements of the Order, including those necessary to achieve the receiving water limitations and WQBELs. As discussed elsewhere in the Fact Sheet, these permit provisions are required by federal regulations. That said, the Los Angeles Water Board recognizes that in light of the recession caused by the COVID-19 pandemic, local governments around the country are facing significant challenges in financing and constructing stormwater management infrastructure required by the CWA and federal NPDES regulations. However, as of May 2021, the number of vaccinations completed continues to rise both in the region and around the country, and the Biden administration has proposed trillions in new infrastructure spending on top of the $1.9 trillion dollar American Rescue Plan effective in March 2021, all of which improve the outlook for stormwater funding.

The pandemic brought extraordinary hardship, and it hit society unequally. The unemployment rates in Los Angeles and Ventura Counties in the spring of 2020 hit highs of 18.8% and 14.5%, respectively.[405] Low-income residents experienced

[403] Parrish, Janet. 2018. Off-Site Stormwater Crediting: Lessons from Wetland Mitigation. U.S. EPA. https://www.epa.gov/sites/production/files/2018-10/documents/off-site_stormwater_crediting_lessons_from_wetland_mitigation-2018-04.pdf

[404] Clean Water Partnership. 2020, December 11. Community-Based Public Private Partnerships (CBP3s) for Delivering Sustainability, Environmental Justice and Community Health and Resilience. Presentation. https://thecleanwaterpartnership.com/sustainability-seminar-series-community-based-public-private-partnerships-cbp3s/

[405] FRED. 2021. Unemployment Rate in Los Angeles County, CA. https://fred.stlouisfed.org/series/CALOSA7URN; FRED. 2021. Unemployment Rate in Ventura County, CA. https://fred.stlouisfed.org/series/CAVENT2URN

higher rates of unemployment than middle- and high-income residents, many of whom were able to work remotely and more easily avoid becoming infected by COVID-19.[406] Jobs disappeared in leisure, hospitality, and entertainment, on which Los Angeles County relies heavily. The agricultural industry in Ventura County was also hit hard, and on average received less federal aid compared to growers in other parts of the country.[407] Due to systemic inequities, COVID-19 has disproportionately hit African Americans and Latinos nationwide.[408] This has occurred in Los Angeles as well, in addition to disproportionate impacts on the local Pacific Islander population.[409] Before the pandemic, Permittee municipalities where these underserved communities comprise a significant portion of their populations already had constrained opportunities for revenue generation due to lower average incomes and tax bases.[410] Existing disadvantages in resources have been exacerbated by the pandemic because underserved communities bear a heavier burden in healthcare costs and deaths. In Los Angeles, areas with high poverty had almost four times the death rate on average than areas with low poverty.[411] Furthermore, African Americans and Latinos were more likely to be laid off or furloughed because of the pandemic.[412]

Despite the real hardships, at the macro level economic suffering was not as bad as feared in early predictions. As of May 2021, during the course of the pandemic, the federal government has put more than $5 trillion into the economy.[413] Congress passed the American Rescue Plan, which extended unemployment benefits, sent stimulus checks to the public, and sent $350 billion to state and local governments, with stormwater infrastructure being one of the many intended uses of this funding.[414] President Biden has also ordered that 40% of benefits from federal climate action go to underserved communities as part of the Justice40 initiative.[415]

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[406] Chetty, Raj, John N. Friedman, Michael Stepner. 2021. Who Spent Their Last Stimulus Checks? New York Times. https://www.nytimes.com/interactive/2021/02/08/opinion/stimulus-checks-economy.html

[407] Smith, Aaron. COVID-19 Relief Programs Have Kept U.S. Farm Income High but Shortchanged California Producers. Giannini Foundation of Agricultural Economics, University of California. https://s.giannini.ucop.edu/uploads/pub/2021/02/18/v24n3_2.pdf

[408] Centers for Disease Control and Prevention. 2020, June 25. COVID-19 in Racial and Ethnic Minority Groups. https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/racial-ethnic-minorities.html

[409] Lin, Rong-Gong, II. 2020, June 9. "Racism and inequity fuel coronavirus-related death toll among L.A. County minorities, officials say". Los Angeles Times. https://www.latimes.com/california/story/2020-06-09/coronavirus-deaths-racism-blacks-latinos-pacific-islanders-inequity

[410] De La Cruz-Viesca, Melany, Zhenxiang Chen, Paul M. Ong, Darrick Hamilton, and William A. Darity Jr. 2016. The Color of Wealth. Duke University, The New School, UCLA, Insight Center for Community Economic Development. http://www.aasc.ucla.edu/besol/Color_of_Wealth_Report.pdf

[411] Lin, Rong-Gong, II. 2020, June 9. "Racism and inequity fuel coronavirus-related death toll among L.A. County minorities, officials say". Los Angeles Times. https://www.latimes.com/california/story/2020-06-09/coronavirus-deaths-racism-blacks-latinos-pacific-islanders-inequity

[412] Jan, Tracy and Scott Clement. 2020, May 6. "Hispanics are almost twice as likely as whites to have lost their jobs amid pandemic, poll finds." Washington Post. https://www.washingtonpost.com/business/2020/05/06/layoffs-race-poll-coronavirus/

[413] Casselman, Ben. 2021. America is on a Road to a Better Economy. But Better for Whom?. New York Times. https://www.nytimes.com/2021/05/18/magazine/stimulus-us-economy.html

[414] U.S. Department of the Treasury. 2021. Coronavirus State and Local Fiscal Recovery Funds.

[415] White House. 2021. Fact Sheet: President Biden Takes Executive Actions to Tackle the Climate Crisis at Home and Abroad, Create Jobs, and Restore Scientific Integrity Across Federal Government. https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/27/fact-sheet-president-biden-

As of May 2021, predictions are that the California 2021-2022 budget will have a surplus of $38B-$75B.[416] Economists in 2021 have consistently revised their outlooks to be more optimistic, expecting unemployment to return to pre-pandemic levels in 2022.[417] As of March 2021, the unemployment rates in Los Angeles and Ventura Counties were 10.9% and 6.4%, respectively.[418] While this is a significant improvement compared to the early months of the pandemic, there is still a ways to go to full recovery. At the local level, Los Angeles property tax revenues from the past year were higher than expected, and it is likely that funding for Measure W will remain largely intact.[419] Los Angeles County is set to receive $1.9 billion, and the city of Los Angeles is set to receive $1.4 billion from the American Rescue Plan.[420] These amounts are greater than LA County and the city of Los Angeles's previously projected budget deficits of $935 million and $750 million, respectively.[421] While the specific magnitude of the effect on municipal revenues is unclear as of May 2021, there will be continued or increased funding of state and federal grants that can be used towards stormwater projects. There has been increased spending by the general public as more people have received vaccinations and the economy has continued to reopen, which will increase local tax revenues.

The pandemic's economic impacts largely affect general funds, which present a limited and less reliable source of revenue. Permittees are compelled more than before to identify alternative sources such as fees, assessments, grants, and loans. In the past, municipalities throughout the State have been successful in securing alternative funding for stormwater services through fees, assessments, or special taxes, as well as through developer fees, and gas taxes.[422] Many Permittees have

takes-executive-actions-to-tackle-the-climate-crisis-at-home-and-abroad-create-jobs-and-restore-scientific-integrity-across-federal-government/

[416] Walters, Dan. 2021. Newsom budget surplus gets reality check. CalMatters. https://calmatters.org/commentary/2021/05/newsom-budget-surplus-lao/

[417] Casselman, Ben. 2021. America is on a Road to a Better Economy. But Better for Whom?. New York Times. https://www.nytimes.com/2021/05/18/magazine/stimulus-us-economy.html

[418] FRED. 2021. Unemployment Rate in Los Angeles County, CA. https://fred.stlouisfed.org/series/CALOSA7URN; FRED. 2021. Unemployment Rate in Ventura County, CA. https://fred.stlouisfed.org/series/CAVENT2URN

[419] LA Controller. Revenue Forecast Report for Fiscal Years 2020-2021. https://lacontroller.org/financial-reports/revenue-forecast-report-fy21/

[420] U.S. Department of the Treasury. 2021. Coronavirus State and Local Fiscal Recovery Funds.

[421] Denkmann, Libby. 2020. LA County Supervisors Approve Downsized Budget: No Department is Spared From Cuts and Layoffs. LAist. https://laist.com/news/la-county-supervisors-budget-cuts-layoffs-pandemic; Zahniser, David, Dakota Smith, and Julia Wick. 2021. L.A. expects to receive $1.35 billion from the relief bill. Garcetti is 'ecstatic'. Los Angeles Times. https://www.latimes.com/california/story/2021-03-10/federal-relief-cities-states-could-end-los-angeles-city-budget-crisis

[422] Generally, there is a willingness to pay for improvements in water quality. For example, U.S. EPA estimated household willingness to pay for improvements in freshwater quality to support fishing and boating to be $182 to $242 per year (adjusted for inflation using Bureau of Labor Statistics on-line CPI Inflation Calculator). (National Pollutant Discharge Elimination System – *Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, Final Rule*. Federal Register 64 (8 December 1999): p. 68793. Web. 20 June 2019.) This estimate can be considered conservative, since it does not include important considerations such as the benefits to marine waters, wildlife, or flood control. California State University - Sacramento's 2005 study corroborates U.S. EPA's estimates, reporting annual household willingness to pay for statewide clean water to be $240 (adjusted for inflation using Bureau of Labor Statistics on-line CPI Inflation Calculator). (State Water Board, 2005. Currier, Brian

also taken steps to establish a stable funding source, which will help fund stormwater projects despite the current economic downturn. The following Parts XIII.D.3.a-e provide examples of these efforts. Part XIII.D.3.f of this Fact Sheet provides examples of state and federal grants and loans.

a. Los Angeles County Safe, Clean Water Program

In November 2018 Los Angeles County gained voter approval of Measure W, a special parcel tax of 2.5 cents per square foot of impermeable surface that will raise up to $285 million annually to capture and clean up stormwater. Measure W required approval by a two-thirds majority to pass. The tax will help cities across Los Angeles County comply with the Order. It will also help make the region more water resilient in the face of drought and climate change, particularly in underserved communities that are often hit harder by environmental and public health stresses.[423]

Of the annual revenue, forty percent will be returned to the municipality of origin to create new local projects and programs and fund operation and maintenance. Table F-40 provides the estimated "local return" revenues that will be allocated to Los Angeles County Permittees based on the estimated annual revenue of $285M. It is anticipated that a total of $112.6M will go directly to municipalities through the local return.

K., et al. *NPDES Storm Water Cost Survey Final Report*. Office of Water Programs, California State University, Sacramento, January 2005. p. iv.)

[423] "L.A. County stormwater tax officially passes." Los Angeles Times, November 30, 2018.

Table F-40. Estimated Annual Safe, Clean Water Program Municipal Program Funds, by Permittee[424]

Agoura Hills	$0.34M	Hawaiian Gardens	$0.13M	Pasadena	$1.56M
Alhambra	$0.86M	Hawthorne	$0.79M	Pico Rivera	$0.90M
Arcadia	$1.02M	Hermosa Beach	$0.16M	Pomona	$1.88M
Artesia	$0.21M	Hidden Hills	$0.08M	Rancho Palos Verdes	$0.69M
Azusa	$0.62M	Huntington Park	$0.43M	Redondo Beach	$0.72M
Baldwin Park	$0.72M	Industry	$1.61M	Rolling Hills	$0.10M
Bell	$0.31M	Inglewood	$0.97M	Rolling Hills Estates	$0.16M
Bell Gardens	$0.32M	Irwindale	$0.44M	Rosemead	$0.57M
Bellflower	$0.83M	La Canada Flintridge	$0.38M	San Dimas	$0.60M
Beverly Hills	$0.55M	La Habra Heights	$0.17M	San Fernando	$0.28M
Bradbury	$0.05M	La Mirada	$0.92M	San Gabriel	$0.45M
Burbank	$1.45M	La Puente	$0.34M	San Marino	$0.23M
Calabasas	$0.39M	La Verne	$0.57M	Santa Clarita	$3.25M
Carson	$2.40M	Lakewood	$1.10M	Santa Fe Springs	$1.45M
Cerritos	$0.94M	Lawndale	$0.23M	Santa Monica	$0.81M
Claremont	$0.57M	Lomita	$0.23M	Sierra Madre	$0.15M
Commerce	$0.99M	Long Beach	$4.60M	Signal Hill	$0.28M
Compton	$1.21M	Los Angeles	$36.74M	South El Monte	$0.45M
Covina	$0.74M	Lynwood	$0.58M	South Gate	$1.00M
Cudahy	$0.17M	Malibu	$0.39M	South Pasadena	$0.25M
Culver City	$0.52M	Manhattan Beach	$0.41M	Temple City	$0.45M
Diamond Bar	$0.84M	Maywood	$0.18M	Torrance	$2.13M
Downey	$1.44M	Monrovia	$0.53M	Unincorporated	$11.24M
Duarte	$0.25M	Montebello	$0.90M	Vernon	$0.93M
El Monte	$1.10M	Monterey Park	$0.74M	Walnut	$0.50M
El Segundo	$0.57M	Norwalk	$1.09M	West Covina	$1.36M
Gardena	$0.83M	Palos Verdes Estates	$0.26M	West Hollywood	$0.26M
Glendale	$1.68M	Paramount	$0.65M	Westlake Village	$0.23M
Glendora	$0.90M	Hawaiian Gardens	$0.13M	Whittier	$1.21M

Fifty percent of the annual revenue will be spread across nine watershed areas to develop Stormwater Investment Plans and implement regional projects and programs, including a Technical Resources Program (TRP) that will provide technical assistance to underserved communities in developing feasibility studies, which are required before a project is considered for funding, and facilitating community and stakeholder engagement. Anticipated annual revenues available to each watershed area are provided in Table F-41.

424 https://safecleanwaterla.org/wp-content/uploads/2020/09/SCW-Local-Return-Funds-by-Municipality-20200809.pdf

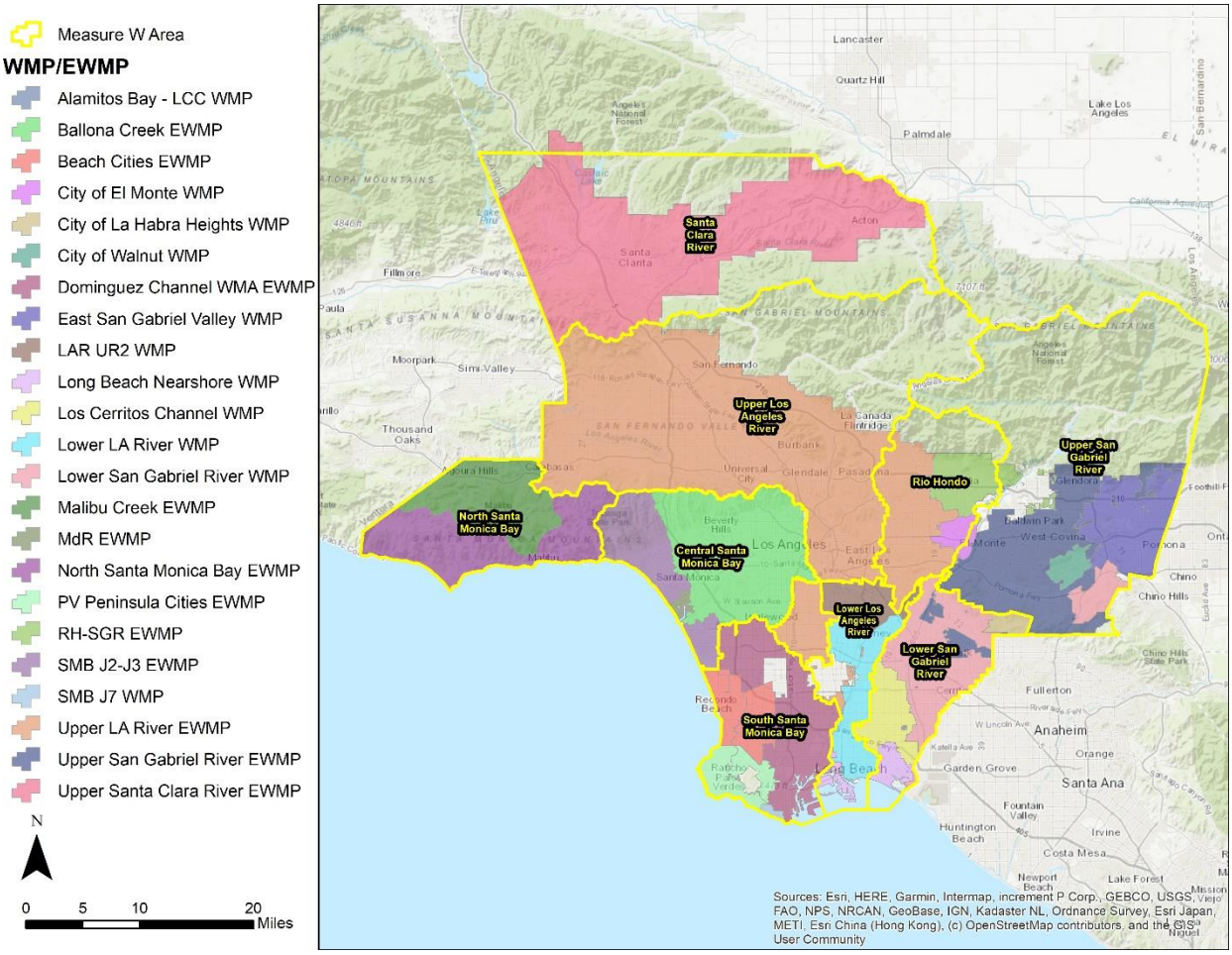
Table F-41. Estimated Annual Safe, Clean Water Program Regional Program Funds by Watershed Area

Watershed Area	Estimated Annual Revenue (millions)
Central Santa Monica Bay	$ 17.42
Lower Los Angeles River	$ 12.72
Lower San Gabriel River	$ 16.56
North Santa Monica Bay	$ 1.83
Rio Hondo	$ 11.49
Santa Clara River	$ 5.87
South Santa Monica Bay	$ 17.58
Upper Los Angeles River	$ 38.44
Upper San Gabriel River	$ 18.78
REGIONAL TOTAL	**$ 140.6**

*Source: County of Los Angeles Safe, Clean Water Program (*https://safecleanwaterla.org/wp-content/uploads/2020/09/SCW-Regional-Return-Funds-by-Watershed-Area-20200809.pdf)

Figure F-2 shows the overlap between the nine watershed areas and the Watershed Management Program and Enhanced Watershed Management Program areas.

Figure F-2. Map of Watershed Areas, Watershed Management Program Areas, and Enhanced Watershed Management Program Areas



The remaining ten percent of the annual revenues would be allocated to the Los Angeles County Flood Control District for administration of the program and other district water quality projects and programs.

The Los Angeles County Department of Public Works has evaluated the planning-level projected costs for full implementation of some of the Watershed Management Programs and Enhanced Watershed Management Programs, and the anticipated revenue from the Safe, Clean Water Program for corresponding watershed areas relative to the WMP/EWMP milestones. The preliminary working draft of their analysis suggests that, without any additional sources of funding and assuming the accuracy of the projected costs, significant additional time will be needed to meet most milestones. However, the projected costs used by the Los Angeles County Department of Public Works were higher than values from the Board staff analysis, presented above, and in many cases Permittees have succeeded in significantly lowering these projected costs at both a program scale and project scale. Additionally, as discussed below, Permittees have, and can continue to, leverage additional funds through partnerships with other entities and securing grants and/or low-interest loans.

In summary, the passage of Measure W, with nearly 70% of the vote in LA County, suggests strong support for improved water quality. The revenue generated will go toward funding the Permittees' WMPs and EWMPs, thereby significantly assisting in compliance with the Order.

b. Los Angeles County's Measure A

Los Angeles County voters in November 2016 approved Measure A, the Safe, Clean Neighborhood Parks and Beaches Measure, to support local parks, beaches, open space, and water resources with an annual parcel tax of 1.5 cents per square foot. The measure received overwhelming support, with the approval of 75% of voters. The county's Regional Park and Open Space District disburses the funding through grant programs, divided over multiple categories of projects. Category 3, the Protecting Open Space, Beaches, and Watersheds Program, has about $7.4M annually for competitive grants. The program considers projects that capture stormwater and protect drinking water and waterbodies, as well as projects that provide multiple benefits, such as increasing recreational opportunities, protecting habitats, and improving public health.[425]

c. Culver City's Measure CW

During the November 8, 2016 Special Municipal Election, over two thirds of Culver City residents voted in favor of Measure CW, the Clean Water, Clean Beach Parcel Tax. Single family residential parcels are taxed $99 annually, while each multi-family residential dwelling unit is taxed $69 annually. Each parcel owner of a non-residential property is taxed $1,096 per acre of land (or portion thereof) annually. The $1,096 is pro-rated for non-residential parcels less than one acre. Charges first appeared on the tax statements in fall 2017. Funds raised by Measure CW will be used for improvements in water quality in Ballona Creek, Marina del Rey, and Santa Monica Bay. Measure CW is expected to generate about $2 million per year, beginning in fall 2017. All Measure CW money will be used in Culver City to improve water quality through measures such as low-flow diversions, multi-benefit stormwater capture projects, green streets, and trash controls, among others. Measure CW was directly designed to pay for Culver City's cost of compliance with the Order, including Culver City's responsibilities in implementing programs and projects in the Ballona Creek and Marina del Rey EWMPs in which it is participating.[426]

d. Ventura County's Benefit Assessment Program

The Ventura County Watershed Protection District Benefit Assessment (BA) Program, which levies property fees, is authorized by the Ventura County Watershed Protection District Act, as amended by Chapter 438, Statutes of 1987 and Chapter 365, Statutes of 1988. The FY2019 Benefit Assessment for Watershed Protection is based on the rates established for Fiscal Year 1997. Those same rates were approved for Fiscal Years 1998-1999 through 2017-2018.

[425] Los Angeles County Regional Park and Open Space District. 2017. Measure A Implementation – Park Funding 102 (Fall 2017). https://rposd.lacounty.gov/2017/09/19/park-funding-102/

[426] https://www.culvercity.org/city-hall/information/election-information/ballot-measure-information/clean-culver-city.

The Board of Supervisors approved the same rates in compliance with Proposition 218 on June 12, 2018 for fiscal year 2018-2019. Based on these assessment rates, the annual revenue generated for MS4 permit compliance is provided in Table F-42. The total annual revenue available for MS4 permit compliance for FY 2018-2019 is $3.1 M. An increase of the Benefit Assessment rates requires a vote.

Table F-42. Fiscal Year 2018/2019 Benefit Assessment Program Revenue for NPDES Compliance

Permittee	Zone 1	Zone 2	Zone 3	Zone 4	Total
Ojai	$34,115	--	--	--	$34,115
San Buenaventura	$58,907	$195,448	--	--	$254,355
Fillmore	--	$17,685	--	--	$17,685
Oxnard	--	$592,311	--	--	$592,311
Santa Paula	--	$65,191	--	--	$65,191
Port Hueneme	--	$14,925	--	--	$14,925
Camarillo	--	$1,117	$155,023	--	$155,140
Moorpark	--	--	--	--	--
Thousand Oaks	--	--	$254,540	$47,387	$301,927
Simi Valley	--	--	$187,303	--	$187,303
Unincorporated County	$20,495	$35,545	--	--	$56,040
Watershed Protection District	$118,788	$539,544	$716,353	$66,075	$1,440,760
Total	**$232,306**	**$1,461,768**	**$1,313,220**	**$113,462**	**$3,120,756**

Source: Ventura County Watershed Protection District. Report on Benefit Assessment Program, Fiscal Year 2018/2019.

e. Other Los Angeles County Municipalities

In addition to Los Angeles County, Culver City and Ventura County, other municipalities within the Los Angeles region have secured funding that supports projects to improve water quality through the adoption of stormwater fees. Table F-43 identifies several of them.

Table F-43. Other Existing Municipal Stormwater Fees in the Los Angeles Region

Permittee	Status	Monthly Unit Rate (Residential)	Funding Mechanism	Source
Beverly Hills	NI	$35.12 (R-1), $14.52 (R-4)	NI	OWP
Los Angeles (City)	Successful	$2.33	Special Tax – G.O. Bond	SCI
Monrovia	Successful	$1.68 base + $1.25/dwelling	Balloted	OWP
Rancho Palos Verdes	NI	$7.17	NI	WKU
Rancho Palos Verdes	Successful, then recalled and reduced	$16.67	Balloted	SCI
Santa Clarita	NA	$2.00	NI	WKU
Santa Clarita	Successful	$1.75	Balloted	SCI
Santa Monica	NA	NI	NI	WKU
Santa Monica	Successful	$7.25	Special Tax	SCI

NI – Not Identified

NA – Not Available

OWP - Toolkit to Support Financial Planning for Municipal Stormwater Programs, U.S. EPA Region 9 Environmental Finance Center at Sacramento State, Office of Water Programs, 2018.

SCI - as tracked by SCI staff since 2002

WKU - Western Kentucky University Stormwater Utility Survey 2018

Note: Results are standardized to the best extent possible in combining the multiple sources, but not adjusted for inflation. Reported rates are for majority of residential customers for rate structures with multiple tiers and are shown as reported at time of passage or enactment (SCI or OWP sourced entries) or current year (WKU sourced).

Source: CASQA Stormwater Finance Web Portal, Survey of Existing Stormwater Fees in California, September 3, 2019.

f. State and Federal Funding Sources

Public agencies, both federal and state, recognize the importance of stormwater improvement projects. This section describes some sources of funding from grants and loans that have been provided in the past and will be provided in the future to help offset the costs of stormwater management and leverage ongoing funding sources such as those described above. The variety of grant programs that can support stormwater projects highlights the opportunities for creativity in incorporating stormwater BMPs into other infrastructure and community development projects, which will not only help achieve stormwater goals, but also open more avenues of funding.

Permittees in the Los Angeles Region have been receiving significant State funding through grant programs and interagency agreements with the California Department of Transportation, and so far there is no official indication that they will not continue doing so as several State-wide stormwater grant programs are expected to proceed in coming years. All Permittees have completed a Stormwater Resource Plan (SRP) or equivalent and have obtained concurrence on the SRP or equivalent from the State Water Board, making all Permittees eligible to compete for State funds to support additional stormwater projects identified in the SRP or equivalent.

The table below (Table F-44) summarizes the funds that had been allocated to stormwater management in Los Angeles County up to 2012.

Table F-44. Funds Allocated to Stormwater Management in Los Angeles County Up To 2012

Source of Money	Dollars	% of total costs funded by State (only for those projects which included State funding)
Only State Board-awarded funding (Propositions 12, 13, 40, 50, and 84; and federal money, 319h, 205j, ARRA)	$49,143,132	47%
Only State money from any State agency (propositions only, no federal); includes State Board, DWR, Coastal Conservancy, Fish & Game	$67,461,699	58%
Prop A	$4,981,772	N/A
Prop O	$508,678,258	N/A
Measure V	$9,107,959	N/A
Total Public Funds (federal, State, local bonds and measures) expended on stormwater control projects	$645,389,932	N/A (information not available for projects funded by local bonds and measures)

Source: Los Angeles County MS4 Permit Fact Sheet 2012

Since 2012, Permittees have received $186.1M in state funding for 42 projects that will support Permittees' compliance with the Order. Specifically, between 2012 and 2015, Los Angeles County and Ventura County Permittees have received $25.5M from Proposition 84 and the Drought Response Outreach Program for Schools (DROPS) for 18 projects. This funding covered over 70% of the total cost of the 18 projects. In 2016, Permittees received $51M of Proposition 1 grant funding during Round 1 for 13 projects. The Proposition 1 grant funding is covering over 50% of the total cost of the 13 projects. In February 2021, $18.6M was awarded to Permittees for five projects from Prop 1 Round 2 funding. Since 2012, Los Angeles County Permittees have also received over $91M in funding from the State through Cooperative Implementation Agreements with the California Department of Transportation for 6 projects.

Permittees have also been awarded Prop 68 funding and may continue to compete for additional grant funding. According to the California Department of Fish and Wildlife, grants will not be canceled, and unspent funds will not be taken back by the state during the COVID-19 pandemic.[427] In March 2020, the California Department of Parks and Recreation awarded about $54 million from Proposition 68's Statewide Park Program to Los Angeles County jurisdictions to develop new parks, multi-use paths, and improve existing facilities.[428] In addition, in 2020 the California Natural Resources Agency awarded $18.5 million for multi-benefit green infrastructure investments in or benefiting disadvantaged or severely disadvantaged communities through Proposition 68's Green Infrastructure Grant Program.

Potential sources of future grant funding from state and federal programs are shown in Table F-45. In addition to Proposition 68 programs, a number of federal grant programs can be used to build stormwater infrastructure while also promoting economic development, resilience to climate change-induced hazards, green transportation alternatives, and urban greening.[429] This highlights the increased funding opportunities that could come with projects that creatively incorporate stormwater BMPs. Some programs explicitly address the longstanding problem of underserved communities having greater need for green infrastructure but having fewer resources by explicitly prioritizing underserved communities, such as Proposition 68's Statewide Park Program, the USDA Forest Service Urban and Community Forestry Program, and Economic Development Administration's Public Works and Economic Adjustment Assistance programs

Table F-45. Potential Future State and Federal Grant Sources

Grant Program	Source	Description
Prop 68 Statewide Park Program	CA Department of Parks and Recreation	• $395.3M was available for FY20/21 • For creating new parks and recreation opportunities in underserved communities
Prop 68 Regional Park Program	CA Department of Parks and Recreation	• $23.1M was available for FY20/21 • Eligible projects: Acquisition for new or enhanced public access and use; development to create or renovate; trails, with preference given to multiuse trails over single-use trails; regional sports complexes; visitor and interpretive facilities; other types of recreation and support facilities in regional parks

[427] California Department of Fish and Wildlife. 2020, April 15. Frequently Asked Questions Grant Administration during COVID-19. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=178465&inline

[428] Sharp, Steven. 2020, March 2. $54 Million in State Funding Awarded for L.A. County Park Projects. Urbanize Los Angeles. https://urbanize.la/post/54-million-state-funding-awarded-la-county-park-projects

[429] U.S. EPA. 2017. Federal and State Funding Programs – Stormwater & Green Infrastructure Projects. https://www.epa.gov/sites/production/files/2017-05/documents/federal-and-california-sw-funding-programs_0.pdf

Grant Program	Source	Description
Community Development Block Grants (CDBG)	U.S Department of Housing and Urban Development	• Annual grants to cities and counties on a formula basis • Eligible to fund stormwater and green infrastructure because these projects can create jobs and economic activity • Detroit, MI and Chicago, IL have used CDBG funds for stormwater infrastructure
Building Resilient Infrastructure and Communities (BRIC)	Federal Emergency Management Agency	• Funding for projects that reduce risks from disasters and natural hazards; green infrastructure and restoration projects can be used to address stormwater pollution and mitigate flood risk from climate change and sea-level rise
Surface Transportation Block Grant - Transportation Alternatives Set-Aside	Federal Highway Administration	• Annual grants to states on a formula basis • Provides funding for “transportation alternatives,” including “offroad trail facilities for pedestrians, bicyclists, and other nonmotorized forms of transportation” and "environmental mitigation related to stormwater and habitat connectivity." Funding could be used to pay for green infrastructure components of trails and sidewalks such as permeable pavements • The Southeast Michigan Council of Governments used funding in 2015 from the state of Michigan to fund the Detroit – Inner Circle Greenway Railroad Acquisition, which included 1) installation of green infrastructure such as green streets and bioretention and 2) repurposing of 8.3 miles of abandoned railway near Detroit
USDA Forest Service Urban & Community Forestry Program	U.S. Forest Service	• One of the goals is to plant trees in environmental justice communities, "where suitable tree installations can provide equitable access to shade, reduce heat exposure, improve air quality, and reduce storm water flooding, solutions should bring together community members, planners, local and state government officials, urban foresters and resilience and sustainability professionals.
Public Works and Economic Adjustment Assistance programs	U.S. Economic Development Administration	• Funding to support development in economically distressed areas by fostering job creation and attracting private investment • Funding has previously been used for stormwater infrastructure

Grant Program	Source	Description
Sewer Overflow and Stormwater Reuse Municipal Grants Program	U.S. EPA	• $225M allotted (funds available in 2022) • Funding to support planning, design, and construction of facilities to intercept, transport, control, treat, or reuse municipal stormwater, and any other measures to manage, reduce, treat, or recapture stormwater

Moreover, loan options with below-market interest rates are available for stormwater projects, as shown in Table F-46. The Clean Water State Revolving Fund can finance a wide variety of stormwater projects, with repayment beginning one year after completion of construction and a maximum repayment period of 30 years. In November 2020, U.S. EPA invited California to apply for $500 million in Water Infrastructure Finance and Innovation Act (WIFIA) loans through the new state infrastructure financing authority WIFIA (SWIFIA) program.[430] This would provide additional funds to the State Revolving Fund upon approval. The California Infrastructure and Economic Development Bank, or IBank, offers loans for a wide variety of infrastructure projects under its Infrastructure State Revolving Fund, including water projects, parks, streets, and many other types of infrastructure that can incorporate stormwater BMPs. IBank also supports water conservation and infrastructure projects through its Statewide Energy Efficiency Program. Furthermore, IBank offers subsidies to borrowers in communities with high unemployment and/or low median household income. Municipalities are also eligible for loans under the U.S. Department of Housing and Urban Development's Section 108 Loan Authority. Amounts are available in amounts up to five times a municipality's Community Development Block Grant, and funded projects can incorporate stormwater infrastructure.

Table F-46. Potential Future State and Federal Loan Sources

Loan Program	Source	Description
Clean Water State Revolving Fund Program	State Water Resources Control Board	• Capable of financing projects from <$1 million to >$100 million • No upper limit for eligible project • Repayment begins 1 year after construction completion • Maximum financing term: 30 years
Infrastructure State Revolving Fund (ISRF)	California Infrastructure and Economic Development Bank (IBank)	• Financing available in amounts $50,000-$25,000,000 with loan terms for useful life of project up to maximum of 30 years • Subsidies eligible based on unemployment rate and median household income • No matching fund requirement • Funds wide variety of public infrastructure and economic expansion projects

[430] U.S. EPA. 2020, November 18. EPA invites California, Iowa, Rhode Island to Apply for $695 Million in Water Infrastructure Loans. https://www.epa.gov/newsreleases/epa-invites-california-iowa-rhode-island-apply-695-million-water-infrastructure-loans

Loan Program	Source	Description
Statewide Energy Efficiency Program (SWEEP)	California Infrastructure and Economic Development Bank (IBank)	• Financing available in amounts $500,000-$30,000,000 • Funds projects to help meet CA's goals for greenhouse gas reduction, water conservation, and environmental preservation
Section 108 Loan Authority	U.S Department of Housing and Urban Development	• Amounts available to municipalities in amounts 5 times the municipalities' allocated Community Development Block Grant • For three types of development: economic development, public facilities, and housing rehabilitation • Projects can incorporate green infrastructure in design and construction. Milwaukee, WI installed green infrastructure in its redevelopment of Milwaukee Road Railroad Shops to manage stormwater on site.

In conclusion, the Los Angeles Water Board recognizes that the costs of compliance with the Order are significant and that many Permittees have limited resources to implement actions to address their MS4 discharges. However, there are also a number of funding options that Permittees can pursue to assist with compliance. Based on a consideration of the cost of compliance, as discussed above, the Board has structured the permit as flexibly as possible to give Permittees the opportunity to sequence actions to address the highest water quality priorities; options to demonstrate compliance; the ability to customize their control measures; sufficient time to comply (in many cases decades from the time the TMDL was established); opportunities to request time extensions based on economic factors among others; and the ability to collaborate and pool their resources to implement programs and projects to achieve compliance and to also collaborate and pool their resources to monitor their compliance.

4. Environmental and Societal Costs of Not Controlling MS4 Discharges

Economic considerations of stormwater and urban runoff management programs tend to focus on costs incurred by municipalities in developing and implementing the programs. This is appropriate, since as discussed above, these costs are significant and present a challenge for Permittees. However, as far back as 2000, the Water Boards recognized that it is also important to consider the costs of water quality impairment; that is, the negative impact of pollution on the economy and the positive impact of improved water quality (see, for example, Order WQ 2000-11). So, while it is important to consider the cost of compliance, it is also important to consider the costs that would be incurred by not fully regulating or controlling MS4 discharges to receiving waters. Southern California’s local economy thrives on a healthy environment, as does the health of its population. Failure to regulate discharges from the Los Angeles Region’s MS4 will result in greater pollution of the rivers, streams, lakes, reservoirs, bays, harbors, estuaries, coastal shorelines

and wetlands, which makes implementation of the Order vital for the protection of the region's waterbodies and public health.

By way of example, Southern California's travel industry and ocean economy plays a vital role in the region's local economy. In 2016, "47.3 million visitors to L.A. County spent an all-time high of $21.9 billion in the region."[431] Many of those tourists visit the beaches and on average, over 129 million beach visits occur each year in Southern California.[432] A study that looked at beach attendance and bathing rates in Southern California approximated that, depending on the season, 26% to 54% (on average 45%) of the beach attendees have physical contact with the coastal waters.[433] Urban runoff in southern California has been found to cause illness in people swimming near storm drains.[434, 435] One study of recreational exposures in marine water impacted by MS4 discharges following storm events in San Diego County estimated gastrointestinal illness risks at 1.2 illnesses (based on epidemiological study) and 1.5 illnesses (based on quantitative microbial risk assessment) per 1000 wet weather recreation events (surfing).[436] Another study of south Huntington Beach and north Newport Beach found that an illness rate of about 0.8 percent among bathers at those beaches resulted in about $3 million each year in health-related expenses.[437] Extrapolation of such numbers to the beaches and other water contact recreation in the region could result in significant expenses to the public and to public health, while improvements in coastal water quality could result in a reduction of gastrointestinal illness locally and a concurrent savings in expenditures on related health care costs.

Likewise, stormwater runoff from MS4 discharges can significantly impact ocean water quality – and this, in turn, affects public health and the economy. The County of Los Angeles Public Health recommends "beach users … avoid contact with ocean water for a period of 3 days after significant rainfall, especially near flowing storm drains, creek and rivers".[438] Rain advisories can have a significant impact on the region's coastal economy. According to an estimate by Pendleton and Kildow (2006), the non-market value of a beach day is worth between $15-$50, or about $19-63 in 2019 dollars, to the average beach visitor in California.[439] These values

[431] Easter, Makeda. "California Tourism Industry Grows for the 7th Straight Year, Report Says." Los Angeles Times, 9 May 2017, https://www.latimes.com/business/la-fi-ca-economic-impact-20170504-story.html

[432] Dwight, Ryan H., et al. "Beach Attendance and Bathing Rates for Southern California Beaches." *Ocean & Coastal Management*, Elsevier, 27 Apr. 2007, http://coastalwaterresearch.com/documents/Dwight_2007_Beach_Attendance.pdf

[433] Ibid.

[434] Haile, R.W., et al. An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay. Santa Monica Bay Restoration Project. 1996.

[435] Soller, J.A., et al. Incidence of gastrointestinal illness following wet weather recreational exposures: Harmonization of quantitative microbial risk assessment with an epidemiologic investigation of surfers. Water Research, 2017 Sep 15; 121: p. 280.

[436] Ibid.

[437] Dwight, Ryan H., et al. "Estimating the economic burden from illnesses associated with recreational coastal water pollution—a case study in Orange County, California." Journal of Environmental Management. 76.2 (2005): 95-103. 24 August 2011. Web. 20 June 2019.

[438] LA County Department of Public Health, http://publichealth.lacounty.gov/phcommon/public/eh/water_quality/beach_grades.cfm

[439] Pendleton, Linwood and Kildow, Judith. "The Non-Market Value of Beach Recreation in California." Shore & Beach. 74.2 (2006): 34-37. Spring 2006. Web. 27 April 2020.

represent how much someone is willing to pay just for enjoying a day at the beach, not including travel and parking costs. Considering the popularity of Southern California beaches, the economic impact of each beach posting/closure day could be significant. Atiyah, et al. (2013) found that beaches in Santa Monica Bay and Malibu that installed storm drain diversions had an average increase in beach attendance of 610,324 visits per year compared to beaches without storm drain diversions, holding all other factors constant.[440] As an illustrative example of the potential increase in monetized benefits to beach visitors resulting from installing storm drain diversions, multiplying the value of an average California beach day by the change in attendance yields annual benefits ranging between $11.6 and $38.5 million at the average beach in 2019 dollars. Changes in water quality not only affect benefits for beachgoers, but also for local businesses that depend on sales from beachgoers, as well as municipalities that rely on sales tax revenues. The average visitor to the beach spent about $30 for each day visit in 2001, or about $43 in 2019 dollars, at local businesses (excluding gas and auto expenditures).[441] This would mean that for the average beach with storm drain diversions, nearby businesses receive about $26.2 million in additional annual revenue from beach visitors compared to beaches without storm drain diversions, holding all other factors constant. In addition, beach postings negatively affect local home values, potentially as far as several kilometers away.[442] Failure to regulate MS4 discharges will therefore result in great costs and foregone benefits to the regional economy.

5. Benefits of Stormwater Capture and Management

As set forth above, California Water Code section 13241 requires a consideration of economics; it does not require a "cost benefit analysis." While a rigorous quantitative "cost benefit analysis" is not required and may not be possible, the costs of not controlling MS4 discharges – and the benefits that result from controlling MS4 discharges – are both relevant to the ultimate cost of compliance. This is because the costs of compliance may be offset by the benefits of stormwater and urban dry weather runoff management, which broadly include improvements in water quality, augmentation of local water supplies, increased economic benefits, enhancement of beneficial uses, and increased employment and income. Accordingly, a discussion of some of the additional benefits from controlling MS4 discharges is included here.

As an initial matter, it should be noted that there are significant economic benefits (some of which are quantifiable, and some which are not) from stormwater management. A 2004 study conducted by USC/UCLA that assessed the costs and benefits of implementing various approaches for achieving compliance with MS4 permits in the Los Angeles Region found that non-structural systems would provide $7.42B in benefit, adjusted to 2019 dollars. If structural systems were determined to be needed, after adjusting to 2019 dollars, the study found that total benefits

[440] Atiyah, Perla, Linwood Pendleton, Ryan Vaughn, and Neil Lessem. "Measuring the effects of stormwater mitigation on beach attendance." Marine Pollution Bulletin. 72.1 (2013): 87-93. 15 July 2013. Web. 27 April 2020.

[441] California Division of Boating and Waterways, January 2002. California Beach Restoration Study. Page 3-7.

[442] Kung, Megan, Dennis Guignet, and Patrick Walsh. 2021. "Comparing Pollution Where You Live and Play." Marine Resource Economics, forthcoming.

could reach $23.9B.[443] Monetized benefits in this study accounted for a number of benefits – reduced need for flood control, increases in property values, additional groundwater supplies, public willingness to pay for avoided stormwater pollution, cleaner streets, improved beach tourism, preservation of ecosystem services in the marine coastal zone, and cost savings from reduction of sedimentation in local harbors. However, recreational and public health uses were not quantified in this study, and much has changed in the Los Angeles Region since 2004, including an increase in population. Therefore, the benefits value is likely higher than $23.9B.

a. Recreational and Public Health Benefits

As an example of a portion of recreational and public health benefits that can accrue from implementing the MS4 permit, we can examine the Los Angeles River, on which multiple entities have conducted research as part of revitalization efforts. Improving water quality at the river is crucial in transforming the river into an amenity that would attract residents and visitors, and the Upper LA River EWMP has stated that certain revitalization projects are key candidates for future integration with the EWMP process. Currently only portions of the river are being utilized for recreation. If the entire river could have the same amenities as a park in terms of being a location where people could walk, exercise, enjoy the outdoors, view wildlife, and engage in water recreation, the potential benefits would be significant. There are about 728,000 working adults who live or work within one mile of the Los Angeles River.[444] The Trust for Public Land found that about 43% of adults in Los Angeles visited parks, trails, and recreation centers between 2015 and 2016, and that the average frequency of these visits was 1.13 times per week, or 59 times per year. Their analysis found that the average value for each visit was $3.04, adjusted to 2019 dollars.[445] Assuming that the same proportion of adults living and working near the river would go to a newly revitalized Los Angeles River for recreation, this would yield annual recreational benefits of $55.9M. Furthermore, the public health benefits would be substantial. The difference in average annual medical care costs between active (those who do moderate to vigorous exercise) and inactive adults ages 18-64 is $1,242 in 2019 dollars[446], and 24% of LA residents use parks as their primary place for exercise.[447] Although this percentage could potentially increase with the addition of more park space and a revitalized LA River, applying this percentage to the number of adults living and working nearby the LA River

[443] Devinny, Joseph S., Sheldon Kamieniecki, and Michael Stenstrom. "Appendix H: Alternative Approaches to Stormwater Control." *NPDES Storm Water Cost Survey Final Report*. University of Southern California; University of California at Los Angeles, 2004. Web. 20 June 2019.

[444] Henson, Jessica, Mark Hanna, Andrew Dobshinsky, Michael Miller, and Rick Jacobus. 2018, December 3. Memorandum. Los Angeles River Master Plan Update: Demographics, Health, and Social Equity. http://www.larivermasterplan.org/demographics_public_health_and_social_equity

[445] The Trust for Public Land. 2017, May. The Economic Benefits of the Public Park and Recreation System in the City of Los Angeles, California. https://trails.lacounty.gov/Files/Documents/125/CA_LA%20Economic%20Benefits%20Report_LowRes.pdf

[446] Ibid.

[447] Cohen, Deborah, Bing Han, and Kathryn Pitkin Derose. 2014, March. How Much Do Neighborhood Parks Contribute to Local Residents MVPA in the City of Los Angeles? A Meta-Analysis. Presentation. Active Living Research Annual Conference. https://www.activelivingresearch.org/how-much-do-neighborhood-parks-contribute-local-residents-mvpa-city-los-angeles-meta-analysis

yields annual health benefits of $217M. These benefits values represent only a portion of potential total benefits, as the population value only comprises working adults and not children, seniors, or unemployed adults. Further research that includes seniors would likely result in substantial additional public health benefits, as the average annual medical care cost difference between an active and inactive person 65 and over is about $2,490 in 2019 dollars, double the value for adults under 65.[448]

Installing green infrastructure would also deliver public health benefits by mitigating urban heat island effects, with greater returns on investment for installations located in inland areas lacking tree canopies and green spaces, which also tend to be lower-income and often non-white.[449] In urban areas, buildings and pavement retain heat, making them hotter than surrounding non-urban areas, known as the urban heat island effect. Climate change will continue to exacerbate urban heat island effects, but they can be mitigated by pursuing urban greening practices. Nature-based solutions that incorporate trees and vegetation can decrease local temperatures, particularly if they are distributed throughout an area. Reduced temperatures during hot weather not only makes it more comfortable for people to recreate outside, but it can also save lives during extreme heat waves. De Guzman et al. (2020) found that relative to the average mortality rate, during an average five-day heat wave in Los Angeles County there are 4.1% more deaths on the first day and 11.9% more deaths on the fifth day.[450] Using these results, they found that if Los Angeles County had tree coverage at 40%, as opposed to the baseline of 16%, during a September 2010 dry Santa Ana event there would have been a 29% reduction in mortality, equivalent to saving 23 lives. While the study only modeled mortality, it can reasonably be expected that hospitalizations and health conditions brought on by heat stress would be reduced with lower extreme temperatures as well. In addition to trees, other green infrastructure such as bioswales, rain gardens, and green roofs can also reduce temperatures.[451] In metropolitan areas nationwide, neighborhoods with lower median household incomes are associated with less urban tree cover.[452] In areas where the federal government historically redlined, current average

[448] The Trust for Public Land. 2017, May. The Economic Benefits of the Public Park and Recreation System in the City of Los Angeles, California. https://trails.lacounty.gov/Files/Documents/125/CA_LA%20Economic%20Benefits%20Report_LowRes.pdf

[449] United States Census Bureau. 2019. QuickFacts, Los Angeles County, California. https://www.census.gov/quickfacts/fact/map/losangelescountycalifornia/PST045219

[450] De Guzman, Edith, Laurence S. Kalkstein, David Sailor, David Eisenman, Scott Sheridan, Kimberly Kirner, Regan Maas, Kurt Shickman, David Fink, Jonathan Parfrey, Yujuan Chen. 2020. Rx for Hot Cities: Climate Resilience Through Urban Greening and Cooling in Los Angeles. Tree People. https://www.treepeople.org/wp-content/uploads/2020/09/RX-for-hot-cities-report.pdf

[451] Georgetown Climate Center. N.D. Green Infrastructure Strategies and Techniques. https://www.georgetownclimate.org/adaptation/toolkits/green-infrastructure-toolkit/green-infrastructure-strategies-and-techniques.html

[452] Schwarz, Kirsten, Michail Fragkias, Christopher G. Boone, Weiqi Zhou, Melissa McHale, J. Morgan Grove, Jarlath O'Neil-Dunne, Joseph P. McFadden, Geoffrey L. Buckley, Dan Childers, Laura Ogden, Stephanie Pincetl, Diane Pataki, Ali Whitmer, Mary L. Cadenasso. 2015. Trees Grow On Money: Urban Tree Canopy Cover and Environmental Justice. PLoS ONE 10(4): e0122051. https://doi.org/10.1371/journal.pone.0122051

incomes tend to be lower and temperatures tend to be hotter because of historic disinvestment in these neighborhoods.[453]

b. Water Supply Cost Savings and Co-Benefits

Stormwater capture is an effective way for Permittees to achieve the goals of the CWA and the requirements of this permit by preventing the stormwater and associated pollutants from reaching receiving waters. Stormwater capture has also become the focus of intense interest in the wake of California's most recent 2012-2019 drought. The Water Boards have recognized the importance of treating stormwater as a valuable resource where capture and use can result in water supply cost savings, as well as multiple other benefits within a watershed. Among other efforts, the State Water Board's Strategy to Optimize Resource Management of Stormwater (STORMS) seeks to promote stormwater capture and use. STORMS' recent 2018 report *Enhancing Urban Runoff Capture and Use* points out that among a variety of benefits, "stormwater capture can also reduce reliance on imported water from distant sources, which reduces inter-basin (or inter-region) transfers and polluted runoff. Stormwater supports the fit-for-purpose water supply concept by satisfying less sensitive water demands, such as certain household, landscaping, and commercial needs, with mildly polluted water. Runoff from roads and driveways can be captured and harvested locally using distributed hybrid systems (for example, bioretention with an underdrain that feeds a cistern used for irrigation) configured to provide non-potable water for human use." [454]

The Order supports investment towards infrastructure for groundwater recharge to create a resilient local water supply. The potential for water usage from stormwater is significant, with Diringer et al. (2020) from Pacific Institute estimating that stormwater capture from paved surfaces and rooftops in urbanized Southern California and the Bay Area could add 420,000-630,000 acre-feet in average annual water supply, or about 6-10% of annual water usage in those areas in 2014.[455] According to Porse et al. (2018), Los Angeles County "receives 55-60% of its annual water supplies from imported sources, which include northern California through the Sacramento-San Joaquin Delta, the Colorado River Basin, and the higher-altitude Owens Valley."[456] The authors found that even after accounting for full-cycle costs, which include costs for all stages from the capture to end-use of water, stormwater capture can still be cheaper than importing water. Imported water costs around $1,476-$1,790 per acre foot, whereas the cost for existing large stormwater capture is $995 per acre foot. As for proposed new large stormwater capture

[453] Hoffman, Jeremy S., Vivek Shandas and Nicholas Pendleton. 2020. The Effects of Historical Housing Policies on Resident Exposure to Intra-Urban Heat: A Study of 108 US Urban Areas. Climate. https://www.mdpi.com/2225-1154/8/1/12/htm

[454] State Water Board, April 10, 2018. Strategy to Optimize Resource Management of Stormwater: Projects 1a Promote Stormwater Capture and Use and 1b Identify and Eliminate Barriers to Stormwater Capture and Use. Product 1– California State University, Sacramento, Final Report: Enhancing Urban Runoff Capture and Use (pp. 18-19).

[455] Diringer et al. "Economic evaluation of stormwater capture and its multiple benefits in California." PLoS ONE 15(3): e0230549. 24 March 2020. Web. 15 May 2020.

[456] Porse, Erik, et al. "The Economic Value of Local Water Supplies in Los Angeles." *Nature Sustainability*, Vol. 1, June 2018.

projects, including converting flood control infrastructure for multipurpose use, agencies in Los Angeles estimated total costs per acre foot ranging from $1,110-$2,727.[457] The Southern California Water Coalition examined costs for 32 stormwater projects implemented across Southern California and found an even wider cost per acre foot range of $59 to more than $250,000 per acre foot, with a median of $1,070. They found that projects that can annually capture larger amounts of stormwater have a lower cost per acre-foot, and costs differ by project type. Median costs for distributed projects were $25,000 per acre foot, new centralized projects were $6,900 per acre foot, and retrofit projects were $600 per acre foot.[458] Cost ranges from these studies ($59-$250,000/acre foot) are both lower and higher than the imported water cost range ($1,476-$1,790/acre foot), indicating that while stormwater projects costs can be more expensive, in many cases they may not need to be, particularly when agencies can think of creative stormwater solutions.

The Order gives Permittees the flexibility to develop multi-benefit stormwater management projects that will improve water quality while also providing benefits such as recharging of groundwater basins for local water supply and implementation of Low Impact Development (LID) policies and green streets policies. Regulating MS4 discharges would not only lead to water supply cost savings for residents, but also environmental, public health, and recreational benefits resulting from reduced stormwater pollution. Shimabuku et al. (2018) from Pacific Institute emphasizes that effective urban stormwater capture provides an opportunity for addressing multiple benefits including flood control, water quality impairments, improving water supply reliability, providing habitat, reducing urban temperatures, reducing energy use, creating community recreation spaces, and increasing property values.[459]

Diringer et al. (2020) conducted an analysis of stormwater capture project costs and benefits as they affect the cost of an acre-foot of water. They found that failing to consider the effects of co-benefits results in inflated net project costs. They gathered data from rounds 1 and 2 of Prop 1E and Prop 84 project proposals. Of a total of fifty projects, or 26 addressed urban runoff and 24 dealt with non-urban runoff. Most of the urban runoff projects the researchers considered were in Southern California. The authors found that after accounting for the projects' benefits, the net levelized cost for urban stormwater capture projects decreased from $1,030 per acre foot to $150 per acre foot, with some projects even yielding net benefits. Monetized benefits considered in their calculation include flood damage reduction, water quality, energy savings, community recreations, public use, property values, habitat value, CO2 equivalents, and avoided costs. Because many projects reported limited benefits categories, the overall net cost per acre foot would likely be even lower than $150 when other co-benefits are considered.

There are a number of projects under development to recharge the region's basins. One such project was recently completed, the Piru Groundwater Basin

[457] Ibid.

[458] Southern California Water Coalition. Stormwater Capture: Enhancing Recharge and Direct Use Through Data Collection. April 2018. http://www.socalwater.org/wp-content/uploads/scwc-2018-stormwater-whitepaper_75220.pdf

[459] "Stormwater Capture in California: Innovative Policies and Funding Opportunities," Morgan Shimabuku, Sarah Diringer, Heather Cooley; Pacific Institute; June 2018; p. 2.

recharge project, which will capture stormwater from 123 acres in the Ventura County unincorporated area of Piru. This project will result in approximately 25 AFY recharge to the basin.[460] The Tujunga Spreading Grounds Enhancement Project is a collaborative project between the Los Angeles Department of Water and Power and the Los Angeles Flood Control District that will enhance the 150-acre Tujunga spreading grounds. This project will double the facility's recharge capacity and deliver 4 billion gallons of recharge to the groundwater basin and result in an increase in groundwater recharge to the San Fernando Groundwater Basin, increasing local water supply.[461] Furthermore, green street projects provide an opportunity for stormwater management to serve multiple benefits such as flood control, groundwater replenishment, pollutant removal, and create aesthetic green spaces for the local community. In the City of Los Angeles, Avalon Green Alley, a green street project, creates "1.8 acres of improved art and alleys and green alleys in a 35 acre neighborhood".[462] The green street project provides "stormwater retrofits in two alley segments including permeable pavers, dry wells and infiltration trenches that harvest rainwater flowing from a 6.04-acre sub-tributary to the Los Angeles River" and "is designed capture and infiltrate 1,381,608 gallons of stormwater into underground aquifers annually".[463] Similar green street projects have been implemented in Ventura County such as in the Government Center's parking lot by means of pervious concrete gutters. Continuing such improvements under the MS4 permit would provide benefits from flood control, improved water quality, and cost savings from reduced imported water.

c. Ecosystem Services Benefits

In addition to the foregoing, Permittees and their residents will accrue various other environmental benefits resulting from the Order. For example, the 2018 STORMS report describes a range of benefits of capture and use, suggesting that "designing stormwater infrastructure to directly support ecosystems broadens the traditional approach to stormwater management. In this broader sense, retained stormwater can be put into soil where soil biota, macrophytes, and stream interflow systems improve water quality and ecosystems supported by baseflow or high groundwater. Ecosystem benefits include habitat improvement, increased food sources, carbon sequestration, pollutant uptake, reduced ozone (Nowak 2006), and reduced heat-island effects from plant growth. Improved baseflow results in decreased water temperatures and prolonged dry weather flows, and increased amounts and types of soil biota will aid in carbon sequestration and pollutant uptake (Klaus 2015). Local stormwater capture can also lead to energy-saving schemes that (1) capture water before it becomes contaminated with the pollutants on streets and in sewers; (2) rely on energy efficient processes for removing contaminants; (3) treat water only to the extent necessary for intended use (fit-for-purpose

[460] *Ventura County Storm Water Capture for Groundwater Recharge - Construction Project*, http://bondaccountability.resources.ca.gov/Project.aspx?ProjectPK=19812&PropositionPK=48

[461] *Stormwater Engineering Division: Tujunga Spreading Grounds Enhancement Project*, https://dpw.lacounty.gov/wrd/Projects/TujungaSG/index.cfm

[462] "Avalon Green Alley Network Project." *Parkology*, https://www.parkology.org/ParkViewParkStory?cas=a0w46000000RyejAAC&showHeader=true

[463] Ibid.

water); and (4) obviate the need for diversion and large, centralized, energy-intensive treatment and distribution approaches." [464]

d. Other Benefit Considerations

The Pacific Institute and the University of Santa Barbara's Bren School of Environmental Science and Management elsewhere framed the topic of moving towards multiple benefit approaches for water management. The organizations plan to develop a systematic framework for identifying and incorporating the costs and benefits of water management strategies into decision making. They find a broader consideration of benefits associated with water management decisions will achieve broader project support, avoid unintended consequences, optimize resources, and cost sharing, and increase transparency. [465]

Such a framework would support a more robust consideration of potential economic benefits of stormwater management projects not considered in the Board's economic analysis, such as:

- Reduced frequency, area, and impact of flooding - Stormwater capture BMPs that reduce runoff volumes and consequently flood volumes. The decrease in potential damage due to flooding provides economic benefit.
- Reduced cost of public infrastructure - On-site volume control with stormwater BMPs can downsize or eliminate stormwater conveyance infrastructure and provide public cost savings.
- Reduced pollution and water treatment costs and improved water quality - The reduction in runoff volume reduces erosion and pollutant delivery, thereby reducing the downstream costs of water treatment. The resulting improvements in water quality, stream channel stabilization, and aesthetics can also increase the value of riparian properties and increase utility of recreational visitors. The increased infiltration gained from stormwater BMPs can improve and sustain stream base flow conditions in some areas to better maintain downstream habitat. [466]
- Increased property values where green infrastructure and LID projects are implemented.

Other studies, too, have described the importance of co-benefits derived from proper stormwater management. For example, analysis for the San Diego Region Bacteria TMDLs found the contribution of co-benefits (non-bacteria water quality benefits) such as property value, riparian habitat and treatment of other water pollutants provide more than half of the total economic benefits.[467] In a series of studies listed in a report created by the U.S. EPA in 2013, the benefit-to-cost ratios of four LID/GI projects in Sun Valley were listed. All four projects showed a benefit-to-cost ratio of greater than 1

[464] State Water Resources Control Board, Division of Water Quality, "Enhancing Urban Runoff Capture and Use," STORMS Projects 1a and 1b, April 10, 2017.
[465] "Executive Summary: Moving Toward a Multi-Benefit Approach for Water Management," Pacific Institute; and Bren School of Environmental Science and Management, University of California, Santa Barbara, April 2019, pp. II-III.
[466] WERF, 2010. *Using Rainwater to Grow Livable Communities*. Web. 20 June 2019.
[467] Cost Benefit Analysis Steering Committee. Cost-Benefit Analysis San Diego Region Bacteria Total Maximum Daily Loads. October 2017, p. 6. Web. 20 June 2019.

indicating that, over the 50-year evaluation period, the benefits of these projects are higher than their cost.[468]

The Los Angeles Water Board assumes many of the benefits described in this section accrue to Permittees and their communities as a result of implementing their stormwater programs. The Board expects further program improvements, resulting from implementation of actions required by the Order, to increase benefits over time.

For example, the Order promotes:

- Employment and stimulus in the local economy, which are especially crucial during this recession caused by COVID-19. Economic Roundtable conducted a study in 2011 that found that job stimulus for every $1 million invested in water efficiency projects was greater than traditional Los Angeles industries such as motion picture production and new home construction. The study found that 12.6 to 16.6 annualized jobs in recycled water, groundwater, stormwater, graywater systems, and water conservation projects were created for every $1 million invested in these types of projects. The study also showed that approximately 74% of money invested in stormwater projects at the time of the study was spent locally, on businesses located within Los Angeles County. Furthermore, every million dollars invested in stormwater projects in Los Angeles stimulated an estimated $1.99 million in total local sales due to multiplier effects of investing in the local economy. For example, cities pay people to work on stormwater projects, who then spend their incomes on housing, goods, and services.[469] Building on the findings by Economic Roundtable, Los Angeles Alliance for a New Economy estimated that over 30 years, the Safe, Clean Water Program (Measure W) will create about 6,530 construction jobs and 1,347 O&M jobs, as well as about 1,559 annual indirect and induced jobs. This would yield about $14B in overall regional economic benefits from $9B in investment. Furthermore, many of these jobs created would be good-paying jobs that do not require an advanced degree, accessible to those in disadvantaged communities.[470] Sustained increases in these occupations depend on Los Angeles' continued investment in water use efficiency projects.
- Use of nature-based solutions to mitigate and treat stormwater (e.g. implementation LID and GI regional projects). This technique alleviates the load on the existing stormwater conveyance infrastructure and reduces potential maintenance costs, while reducing localized flooding issues.
- Utilization of stormwater as a valuable resource to replenish our groundwater basins or for direct reuse. Imported water makes up approximately 70 to 75% of Southern California region's water supply, with local groundwater, local surface water, and reclaimed water making up the remaining 25 to 30%. The State of California Department of Finance projects that from 2020 to 2025, the population of Los Angeles County and

[468] U.S. EPA, Case Studies Analyzing the Economic Benefits of Low Impact Development and Green Infrastructure Programs, EPA 841-R-13-004, August 2013.
[469] Burns, Patrick and Flaming, Daniel. Water Use Efficiency and Jobs. Economic Roundtable. December 2011.
[470] Los Angeles Alliance for a New Economy (LAANE). Liquid Assets. How Stormwater Infrastructure Builds Resilience, Health, Jobs, and Equity. March 2018.

Ventura County will increase by 2% and 2.6%, respectively. This population increase will be accompanied by an increase in water consumption. This increase will require larger volumes of imported water, which will be associated with higher costs. With stormwater used as a resource to replenish local groundwater basins, local reliance on imported water can be reduced, thereby controlling the costs incurred from importing water. A report prepared by the City of Signal Hill and Richard Watson & Associates states that the Metropolitan Water District forecasts water rates (Tier 1 rates for fully treated water) to increase from $794/acre-foot ($/AF) in 2012 to $910/AF in 2015 and $1,115 in 2020.

6. Conclusions

The Los Angeles Water Board has considered economics in issuing the Order and the specific requirements therein.

This consideration includes estimates of the possible range of costs of compliance with the Order, including the WQBELs, considering the likely and proposed means of compliance. It also includes the costs to the environment and society of not controlling MS4 discharges as well as the economic benefits of controlling MS4 discharges, including through stormwater capture. The range of costs of compliance as presented in Part XIII.D.2, Table F-38 and Table F-39 is $21.3B to $31.4B over 20 years. Even considering the highest cost in this range, the Board finds that the requirements in the Order are necessary to ensure the reasonable protection of beneficial uses. This is because these cost estimates are associated with implementation of permit requirements to achieve water quality objectives that were set at the levels necessary to provide reasonable protection of beneficial uses. These water quality objectives were either established by the U.S. EPA or approved by the U.S. EPA pursuant to CWA section 303(c). In most cases, the water quality objectives are those necessary to protect aquatic life and public health-related beneficial uses. The fundamental objective of the federal CWA, as set forth in section 101(a)(2), is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” and to achieve water quality that provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water. The NPDES Program, including the MS4 NPDES Program, is one of the principal regulatory tools for achieving this objective. The requirements in the Order also consider the magnitude and uncertainty in projected costs and include provisions to help defray these costs (e.g., allowances for time extensions).

Because of the difficulty in accurately projecting the cost of compliance with the Order as presented in the discussion above, and given that permit requirements extend decades into the future, the Los Angeles Water Board has incorporated provisions for adaptive management of programs as new information is gained as well as provisions that allow Permittees to request extensions for milestones based on technical, operational, and economic factors. The Los Angeles Water Board has also acknowledged that it can consider revisions to TMDLs including their schedules and final deadlines, where it determines it is appropriate, and then reflect those changes in the permit. Finally, the Board has acknowledged the currently available dedicated sources of funding for MS4 permit compliance, including the Benefit Assessment Program in Ventura County and the Safe, Clean Water Program in Los Angeles County, among others, and that it will consider how these

funds are allocated to priority projects to meet upcoming deadlines when considering any requests for extensions.

The Los Angeles Water Board has also provided the Permittees significant flexibility to choose how to implement the Order. The Order allows the Permittees the flexibility to address critical water quality priorities, namely discharges to waters subject to TMDLs, but aims to do so in a focused and cost-effective manner while maintaining the level of water quality protection mandated by the Clean Water Act. The Permittees can customize their control measures and choose to implement the least expensive measures that are effective in meeting the requirements of the Order. The Order also does not require the Permittee to fully implement all requirements within a single permit term. Where appropriate, the Board has provided Permittee with additional time outside of the permit term to implement control measures to achieve final WQBELs and Receiving Water Limitations.

Cost savings from customizing programs and shifting resources accordingly are also possible. The Permittees' affirmative steps to secure funding are noteworthy, and some other potential sources of funding are identified in the Board's economic considerations. However, the discussion of potential sources of funding is far from exhaustive. There are myriad opportunities to leverage funding; for example, Permittees could pursue low-interest loans through the State Revolving Fund that would allow access to greater sums of money needed in the near term for capital costs and pay these off over time with the ongoing revenues from dedicated funding sources. Additionally, there are a number of interrelated Propositions, including Measures W[471], H[472], A and M[473] ("WHAM"), addressing stormwater/water resiliency, affordable housing, parks, and transportation, respectively, that can be creatively combined to implement multi-benefit stormwater projects. Finally, partnerships beyond the Permittees themselves should be more fully explored. Some Permittees have effectively tapped into funding or other in-kind resources from the California Department of Transportation, as mentioned above; private entities such as commercial businesses; and schools. However, this opportunity is far from fully utilized.

Stormwater capture is an effective way for Permittees to achieve the goals of the CWA and the requirements of this permit by preventing the stormwater and associated pollutants from reaching receiving waters. As noted above, the specific benefits of stormwater capture have also become the focus of intense interest in the wake of California's most recent 2012-2019 drought. The Water Boards have recognized the importance of treating stormwater as a valuable resource where capture and use can result in multiple benefits within a watershed. This consideration identifies benefits to the environment, people and the economy and clearly demonstrates the value of effective management of stormwater quality.

[471] Measure W led to the passage of the Safe Clean Water Program, described earlier in this section of the Fact Sheet.

[472] Measure H History. https://homeless.lacounty.gov/history/. N.D. Web. July 16, 2020. Measure H was expected to generate about $355M (in 2017 dollars) annually for 10 years to provide homeless services, including increasing affordable/homeless housing.

[473] Measure M: The Los Angeles County Traffic Improvement Plan Information Guide. August 2016. https://theplan.metro.net/wp-content/uploads/2016/10/factsheet_measurem.pdf. Web. July 13, 2020. Measure M was expected to generate an estimated $860M annually (in 2017 dollars). It was also anticipated to add 465,690 new jobs across the region. One of the goals of Measure M is to reduce pollution.

Having considered economics along with the other factors in section 13241, the Los Angeles Water Board has also provided the Permittees with time to implement control measures to achieve interim and final WQBELs and Receiving Water Limitations. This time has been provided in various ways, including through compliance schedules that are consistent with the schedules of implementation established in TMDLs pursuant to California Water Code section 13242, compliance schedules proposed by Permittees and approved by the Los Angeles Water Board through Watershed Management Programs and Enhanced Watershed Management Programs for pollutants not addressed by TMDLs, and time schedule orders, where justified, for WQBELs and Receiving Water Limitations with final compliance deadlines that have passed. The Los Angeles Water Board is committed to continue to evaluate the costs of compliance as permit requirements are implemented and, as noted above, has included provisions that allow Permittees to request extension of deadlines, where warranted.

E. The Need for Developing Housing Within the Region

According to the U.S. Census, between April 1, 2010 to July 1, 2018, Los Angeles County and Ventura County experienced an estimated population increase of 2.9% and 3.3%, respectively.[474] An increase in population creates a demand for more housing. Based on data from the California Department of Finance, both Los Angeles and Ventura counties have been experiencing an increase in population and housing units since 2010.[475] An increase in population creates a higher demand for water, exacerbates usage of natural resources, and increases generation of waste and pollution. In order to conserve and protect the quantity and quality of our natural resources, development must be done systematically. To protect human health and the environment, create economic opportunities, and provide attractive and affordable neighborhoods, U.S. EPA encourages smart growth and low impact development.[476] Stormwater management is an essential smart growth strategy. According to U.S. EPA, using smart growth and low impact development strategies, communities and developers can reduce runoff quantity, protect water quality, and conserve water by developing compactly, preserving ecologically critical open space, and using green infrastructure strategies.[477]

Improved stormwater management may also help reduce the region's historic reliance on imported water to meet population needs. For over 100 years, this region has relied on imported water to meet many of our water resource needs. Imported water makes up approximately 70 to 75% of the Southern California region's water supply, with local ground water, local surface water, and reclaimed water making up the remaining 25 to

[474] United States Census Bureau. QuickFacts. https://www.census.gov/quickfacts/fact/table/venturacountycalifornia,losangelescountycalifornia/PST045218

[475] State of California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2019 with 2010 Census Benchmark. May 1, 2019. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-5/

[476] According to U.S. EPA, "'[s]mart growth' covers a range of development and conservation strategies that help protect our health and natural environment and make our communities more attractive, economically stronger, and more socially diverse." Principles of smart growth include, but are not limited to, use of compact building design, creating a range of housing opportunities and choices, and preserving open space and critical environmental areas. United States Environmental Protection Agency. About Smart Growth. https://www.epa.gov/smartgrowth/about-smart-growth. Accessed on June 23, 2020.

[477] United States Environmental Protection Agency. Smart Growth and Water. https://www.epa.gov/smartgrowth/smart-growth-and-water

30%.[478] The Los Angeles Region imports approximately 50% of its water supply. Untreated MS4 discharges collect and transport pollution to our waterbodies and detrimentally affect their beneficial uses. However, when properly managed, MS4 discharges can be used as a resource.

The Order also helps address the water needs associated with the need for housing by controlling the quality and quantity of MS4 discharges and using it as a water resource for recycling and re-use. The low impact development (LID) requirements of the Order emphasize the necessity to balance growth with the protection of water quality. LID emphasizes cost effective, lot-level strategies that replicate the natural hydrology of the site and reduce the negative impacts of development. By avoiding the installation of more costly conventional stormwater management strategies and harnessing runoff at the source, LID practices enhance the environment while providing cost savings to both developers and local governments.

The Order also supports an integrated water resources approach that manages water resources by integrating wastewater, non-stormwater, stormwater, recycled water, and potable water planning through the capture and beneficial use of MS4 discharges on a regional scale. An integrated approach can preserve and augment local groundwater resources thereby reducing imported water needs and increasing local water resiliency. Local water resiliency increases the region's capacity to support increases in population and the accompanying need for housing.

F. The Need to Develop and Use Recycled Water

During the terms of the 2012 Los Angeles County, 2014 City of Long Beach, and 2010 Ventura County MS4 permits, California experienced a severe drought which lasted 376 weeks, starting from the year 2011 to 2019. The U.S. Drought Monitor characterizes the drought based on specific criteria where D4 is defined as exceptional drought, in which widespread crop and pasture losses and shortages of water create water emergencies. Per the U.S. Drought Monitor, "[t]he most intense period of drought occurred the week of July 29, 2014 where D4 affected 58.1% of California land." [479] Along with the drought, Los Angeles and Ventura counties experienced wildfires, floods, extreme heat and more, which strained the region's resources and highlighted infrastructure inefficiencies. In contrast to the drought, the 2019 water year had above average rainfalls and in some cases even breaking daily rainfall records.[480] Due to climate change, the region will only continue to experience more extreme weather events.

Furthermore, as mentioned in Part XIII.E above, which considers the need for developing housing within the region, according to the U.S. Census, between April 1, 2010 to July 1, 2018, the populations in Los Angeles County and Ventura County rose by 2.9% and 3.3%, respectively. This increase in population leads to an increase demand for water supply to meet the needs of the residents. Most of the water supplied to Los Angeles County is imported from the State Water Project, Colorado River, and

[478] Southern California Association of Governments. The State of the Region 2007 Measuring Regional Progress (Housing, Environment). December 6, 2007. http://www.scag.ca.gov/publications/index.htm.

[479] "Drought in California." California | Drought.gov, 20 Sept. 2019, www.drought.gov/drought/states/california.

[480] Fry, Hannah, and Gary Robbins. "Parts of Southern California Haven't Seen This Much Rain in Decades. And More Is on the Way." *Los Angeles Times*, Los Angeles Times, 15 Feb. 2019, https://www.latimes.com/local/lanow/la-me-rain-explainer-california-storms%2020190215-story.html.

the Los Angeles Aqueduct.[481] Ventura County relies on local groundwater as well as imported water.[482] The interconnected effects of water quality and the health of our communities is also becoming increasingly apparent. Water shortages and the pumping of groundwater at a rate that depletes groundwater supply further demonstrates the need to develop a robust strategy that incorporates recycled water to build resiliency to the region's most pressing issues, while being protective of public health and the environment.

Initiatives for water resiliency have passed at the state and local levels. At the state level, in April 2015, Governor Brown issued Executive Order B-29-15, which outlined actions needed to respond to the severe drought, including mandated reductions in urban potable water usage by 25% statewide. In April 2019, Governor Newsom issued Executive Order N-10-19, ordering key agencies, including the California Environmental Protection Agency, to prepare a water resilience portfolio that meets the needs of California's communities, economy, and environment through the 21st century.[483] The draft portfolio includes a number of recommendations related to making stormwater capture a growing share of local water supply.[484] At the local level, the City of Los Angeles developed L.A.'s Green New Deal, which includes plans to recycle 100% of its wastewater by 2035 as well as source 70% of all water locally by 2035 and capture 150,000 acre-feet per year (AFY) of stormwater.[485] In Ventura County, the Integrated Regional Water Management Plan was developed in 2014, in which the Watersheds Coalition of Ventura County is responsible for the implementation and planning at a regional level. Through this planning effort, Ventura County has leveraged its resources through collaborations with local agencies and organizations, and grant funding in order to implement multi-benefit projects.[486] Along with government recognizing the water challenges the region is facing, residents also recognize the need to develop recycled water infrastructure and the importance of water resiliency with the passing of Measure W in Los Angeles County, which provides a dedicated funding source for multi-benefit stormwater capture projects through a parcel tax on impermeable areas.[487]

Historically, stormwater has not been considered a viable component of the regional water portfolio. However, if stormwater is captured and treated, a new resource could be added to local water supply and numerous benefits could be achieved. These include:

- Regional reduction in reliance on imported water;
- Aid in the restoration of area aquifers both from a supply and water quality point of view;
- Reduction in the need for extensive public works projects; and

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[481] The Future of Integrated Regional Water Management in Los Angeles County. http://www.resources.ca.gov/docs/LA_County.pdf.

[482] Watersheds Coalition of Ventura County Integrated Regional Water Management Plan. http://wcvc.ventura.org/IRWMP/2019IRWMP.htm.

[483] Executive Department State of California Executive Order N-10-19. https://www.gov.ca.gov/wp-content/uploads/2019/04/4.29.19-EO-N-10-19-Attested.pdf.

[484] California Natural Resources Agency, California Environmental Protection Agency, and California Department of Food & Agriculture. 2020 Water Resilience Portfolio. Draft. January 3, 2020.

[485] L.A.'s Green New Deal Sustainable Plan 2019. http://plan.lamayor.org/sites/default/files/pLAn_2019_final.pdf.

[486] Watersheds Coalition of Ventura County Integrated Regional Water Management Plan. http://wcvc.ventura.org/IRWMP/2019IRWMP.htm.

[487] Safe Clean Water Program. https://safecleanwaterla.org/.

- Improvement in the quality of impaired water bodies.

Municipalities across the region are now acknowledging the importance of recognizing stormwater as a resource and thus conducting watershed-based planning to implement multi-benefit solutions for stormwater management. Consistent with the Clean Water Act, which supports the implementation of stormwater management at a watershed scale, the 2012 Los Angeles County MS4 Permit and the 2014 City of Long Beach MS4 Permit contained provisions to allow for the abovementioned benefits to be achieved through the implementation of approved Watershed Management Programs. The Order further expands such provisions to Permittees in Ventura County. Watershed Management Programs allow Permittees the flexibility to implement requirements of the Order on a watershed scale through customized strategies, control measures, and BMPs to achieve multi-benefit solutions. Participation in a Watershed Management Program is voluntary and allows the Permittee to address the highest water quality priorities in consideration of particular socio-economic, land use, and geographic characteristics.

In addition, participation in Watershed Management Programs allows Permittees to consider the potential amount of dry weather urban runoff and precipitation and thus the amount of non-stormwater and stormwater available to capture. The exact volume of stormwater available for capture is dependent on the intensity and duration of storm events. Looking at land uses across the region and applying land use-specific runoff coefficients, the Los Angeles and San Gabriel Rivers Watershed Council estimates that, on average, about 601,000 acre-feet/year of runoff are discharged from the Los Angeles Region to the Pacific Ocean.[488] The average annual rainfall in Ventura County is about 18 inches and has a total area of 1,843 square miles.[489] It is not possible to capture all MS4 discharges; however, a significant portion could be captured and put to beneficial use. Capturing stormwater from a larger portion of the watershed could increase the volume of this “new” water even further.

Larger projects (and the corresponding savings) are also possible. The County of Los Angeles recharges stormwater already. While the scale of these recharge activities is limited compared to the volume of water potentially available to recharge, the value of the process is significant. For example, in 2000 “County conservation efforts captured 220,000 acre-feet of local stormwater runoff that was valued at $80 million dollars.”[490]

The unknown effects of infiltrating stormwater to recharge groundwater have created some concern that such activities could introduce pollutants to the water supply. However, these concerns are likely overstated. The U.S. Bureau of Reclamation has found:[491]

[488] Los Angeles and San Gabriel Rivers Watershed Council (2010) Water Augmentation Study: Research, Strategy, and Implementation Report, January 30, 2010.https://www.usbr.gov/lc/socal/reports/LASGwtraugmentation/report.pdf. Accessed on June 23, 2020.

[489] Report of Waste Discharge, Ventura Countywide Stormwater Quality Management Program, January 2015.

[490] Los Angeles County Department of Regional Planning. 2008. 2008 Draft General Plan-Planning Tomorrow’s Great Places.

[491] Los Angeles and San Gabriel River Watershed Council. 2010. Water Augmentation Study: Research, Strategy, and Implementation Report. https://www.usbr.gov/lc/socal/reports/LASGwtraugmentation/report.pdf. Accessed on June 23, 2020.

Based on the findings of the WAS research, decentralized stormwater management would provide a local and reliable supply of water that would not negatively impact groundwater quality. A decentralized approach could contribute up to 384,000 acre-feet of additional groundwater recharge annually if the first ¾" of each storm is infiltrated on all parcels, enough to provide water annually to approximately 1.5 million people. The value of this new water supply would be approximately $311 million, using the MWD Tier 2 rate for 2010.

Recent studies in the urbanized area of Los Angeles County have also shown that in the process of infiltration through the soil, many contaminants are removed with no immediate impacts, and no apparent trends to indicate that stormwater infiltration will negatively impact groundwater.[492] Moreover, in groundwater basins with elevated concentrations of salts, utilizing recycled stormwater, which has low concentrations of salts, to recharge the aquifers may actually improve water quality. The value of this is difficult to quantify but is an additional benefit.

The Order addresses the need for recycled water by emphasizing stormwater capture for beneficial use as a means to control the discharge of pollutants from the MS4 to surface waters. The Order also supports the diversion of non-stormwater to wastewater reclamation facilities where it can be treated for beneficial reuse. State law and policy advocates greatly expanding the use of recycled water to help meet local demand and reduce the volumes of water that are imported from other regions. Increased utilization of recycled water will require looking beyond the traditional reclaimed wastewater and will require utilizing stormwater and non-stormwater that is wasted by conveyance in the MS4 to the ocean. Stormwater capture and use has not featured as prominently as municipal wastewater in the discussion of water recycling but is increasingly acknowledged as a valuable asset for augmenting local water supply. The use of recycled water can be accomplished in direct (such as irrigation projects) or indirect (such as infiltration) ways. Both direct and indirect methods can be completed on a variety of different scales. To maximize the benefits available from using recycled water, the direct and indirect projects will need to be completed on household, neighborhood, watershed, and regional scales. There is a growing number of projects in the region that can serve as examples of what may be accomplished through the development and implementation of recycled water projects.

Some successful examples of onsite stormwater capture are being demonstrated by TreePeople.[493] TreePeople's demonstration projects range from small scale rainwater harvesting at single family home locations, to large scale watershed projects. At Tuxedo Green in Sun Valley, TreePeople redesigned the intersection with a flood control system that conveys most stormwater under, instead of into, the busy intersection. The water is stored in a 45,000-gallon cistern to be used for irrigating the landscaping at the new pocket park, which is planted with native and drought-tolerant species.

Another state of the art project was implemented by the City of Santa Monica called the Santa Monica Urban Runoff Recycling Facility (SMURRF).[494] The project harnesses the urban runoff (primarily during the dry season) and treats it for various pollutants to create a source of high quality water for reuse in landscape irrigation, thus reducing the need

[492] Los Angeles and San Gabriel River Watershed Council. 2005. Los Angeles Basin Water Augmentation Study Phase II Final Report.
[493] http://www.treepeople.org/.
[494] http://c0133251.cdn.cloudfiles.rackspacecloud.com/Case%20Study%20%20Santa%20Monica%20Urban%20Runoff%20Recycling%20Facility%20SMURFF.pdf.

for potable water. Because the facility captures the dry weather runoff before it reaches the Santa Monica Bay, it decreases a significant amount of pollutants from negatively impacting the Bay and associated beaches. The SMURRF is also open to the public and has several exhibits to raise public awareness of Santa Monica Bay pollution and the role of each individual in the watershed's health.

The County of Los Angeles Department of Public Works, Watershed Management Division has targeted the Sun Valley Watershed "…to solve the local flooding problem while retaining all stormwater runoff from the watershed, increasing water conservation, recreational opportunities, wildlife habitat, and reducing stormwater pollution."[495] This aggressive plan involves several stakeholders and has implemented a variety of on-site BMPs as well as stormwater infiltration retrofits and diversions.

In Ventura County, the Ventura Countywide Stormwater Quality Management Program has implemented various stormwater quality improvement projects and BMPs. In the City of Moorpark, College View Dog Park diverts all stormwater to infiltration basins and can retain 100% of the water during average rainfall periods. Walnut Acres Park has both on-site and off-site infiltration capability. The City of Ventura implemented downtown parking lot retrofits including curb cuts, bioswales, and permeable pavers and have applied similar features for green street projects.[496] A notable green street project was implemented at the Ventura County Government Center. This project implemented an innovative infiltration system through the installation of 4,805 linear feet of pervious concrete gutters to capture stormwater from the Government Center's parking lot. The captured stormwater is filtered through an infiltration trench that flows into dry wells for groundwater recharge. Furthermore, in the Ventura River Watershed, Happy Valley Bioswale was designed to mimic natural processes to remove pollutants in stormwater runoff. This filtration system includes a baffle box at the entrance which removes trash, sediments, and small particles and is followed by a natural soil and plant filtration system to further treat the stormwater and allows for a thriving habitat.[497]

With the issuance of the Order, stormwater capture projects such as the abovementioned will allow for further expansion on a watershed scale and create consistency within the region.

In addition, there are a number of Total Maximum Daily Loads (TMDLs) established by the Los Angeles Water Board that incorporate recycled water programs as potential implementation actions to meet TMDL requirements. These potential actions focus on both traditional water recycling and the newer stormwater recycling approaches. Such recycled water programs reduce reliance on potable water supplies by expanding water recycling and aiding in the reclamation of poor quality, unconfined groundwater supplies. The capture, treatment and use of stormwater could augment these techniques as well. On-site capture of stormwater helps prevent the water from being contaminated by urban by-products to begin with and the use of this high-quality resource could reduce the unnecessary use of potable water for non-potable needs.

[495] http://www.sunvalleywatershed.org/watershed_management_plan/wmp-0ES.pdf.
[496] Ventura Countywide Stormwater Quality Management Program, Presented on September 13, 2018 https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/workshops/docs/VCWPD_20180913_RB_PermitRenewal_FINAL-1.pdf.
[497] *Happy Valley Bioswale*, uninc.vcstormwater.org/projects/happy-valley-bioswale.

XIV. STATE MANDATES

Article XIII B, section 6(a) of the California Constitution provides that whenever "*any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service*." No provision of the Order constitutes an unfunded state mandate subject to subvention under Article XIII B, section (6)(a) of the California Constitution.

A. Renewal of the Permits Is Not a New Program Or Higher Level of Service

As a threshold matter, MS4 permitting is not a "program" as that term is used in Article XIII B, section (6). The California Supreme Court has defined a "program" for purposes of Article XIII B, section 6, as: (1) programs that carry out the governmental function of providing services to the public, or (2) laws which, to implement a state policy, impose unique requirements on local governments and do not apply generally to all residents and entities in the state. (*San Diego Unified School Dist. v. Commission on State Mandates* (2004) 33 Cal.4th 859, 874 (reaffirming the test set forth in *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56); *Lucia Mar Unified School District v. Honig* (1988) 44 Cal.3d 830, 835.)

An NPDES permit for MS4 discharges arises from the Clean Water Act, which forbids everyone – individuals, businesses, state governments, tribal governments, local governments, etc. – from discharging pollutants from point sources to waters of the United States without an NPDES permit. (33 U.S.C. §§ 1311(a), 402, 502(5); see also 40 C.F.R. §§ 122.21, 122.22, 123.25.) The Clean Water Act requires permitting of private and governmental (federal, state, and local) sources of stormwater and non-stormwater alike. (33 U.S.C. § 1342(p); 40 C.F.R. § 122.26.) The Permittees here must have a permit because they discharge pollutants, not because they operate an MS4. *See, County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 58 (["Although local agencies must provide benefits to their employees either through insurance or direct payment, they are indistinguishable in this respect from private employers. In no sense can employers, public or private, be considered to be administrators of a program . . . ."].) All polluters, whether private or public, must get a permit. (*See, e.g., City of Richmond v. Com. on State Mandates*, (1998) 64 Cal.App.4th 1190, 1199 (new law made "the workers' compensation death benefit requirements as applicable to local governments as they are to private employers," and therefore did not impose a new program or higher level of service.)

To be sure, the permit conditions provide a public benefit, but that is not the same thing as providing services to the public. There is a critical distinction between a law or executive order that requires local governments to provide a public service, and one that address the conduct and happens to cover local governments – and other entities such as private industry – because they engage in the conduct. This principle is best illustrated by *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538. There, the Department of Industrial Relations enacted statewide safety regulations that governed all public and private elevators. (*Id.*, at pp. 1540–1541.) The county argued that the regulations created a mandatory, reimbursable "program" because "all passenger elevators in all county buildings are necessary for the performance of peculiarly governmental functions . . . ." (*Id.*, at pp. 1545–1546, italics omitted.) Rejecting that argument, the court explained that "the critical question is whether the mandated program carries out the governmental function of providing services to the public, not whether the elevators can be used to obtain these services."

(*Id.*, at p. 1546, italics omitted.) In other words, a state law providing that local governments have to comply with the same safety rules as everyone else does not constitute a state mandated "program." The same is true here. The Permit does not require Permittees to operate an MS4. Rather, it implements a body of state law that provides that, if a local government operates an MS4, it must take steps to mitigate pollutant discharges, like all other polluters. The fact that the specific permit here is issued to local governments does not render the permit a program that carries out a "governmental function" particular to local government or a permit that imposes unique requirements on the local governments.

Even if an MS4 permit could be considered a "program," the requirements of the Order do not constitute a *new* program or a *higher level* of service as compared to the requirements contained in the previous permits issued by the Los Angeles Water Board to the Permittees. The overarching requirement to impose controls to reduce the pollutants in discharges from MS4s is dictated by the Clean Water Act (33 U.S.C. § 1342(p)(3)(B)) and is not new to this permit cycle. The inclusion of new and advanced measures as the MS4 programs evolve and mature over time is specifically anticipated under the Clean Water Act (55 Fed. Reg. 47990, 48052 (Nov. 16, 1990); 61 Fed. Reg. 43761 (Aug. 26, 1996); USEPA "*Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits*," EPA 833-D-96-001 (September 1996)) because the experience gained in implementation of existing permits and ongoing technological developments help direct appropriate adaptation of the programs to better address pollution. Such new and advanced measures refine existing measures to improve the effectiveness of the ongoing program and do not constitute a new program or higher level of service. And while the new or advanced measures may result in additional costs to the Permittees, resulting new costs is not the test for a higher level of service. "If the Legislature had intended to continue to equate 'increased level of service' with 'additional costs,' then the provision would be circular: 'costs mandated by the state' are defined as 'increased costs' due to 'an increased level of service,' which, in turn would be defined as 'additional costs.'" (*County of Los Angeles v. Com. on State Mandates* (2003) 110 Cal.App.4th 1176, 1191, quoting *Workers' Compensation Mandates Decision*, *supra*, 43 Cal.3d. at p. 55.)

B. The Permit Requirements Fall Under Several Exceptions to Mandates Rules

Even if some of the requirements imposed on the Permittees with this renewal could be considered a new program or higher level of service, the following exceptions to a finding of unfunded mandates preclude subvention here:

1. The permit provisions are required by the federal Clean Water Act and implementing regulations:

One of the exceptions to the subvention requirements is that, if the mandate imposes a requirement that is mandated by a federal law or regulation and results in costs mandated by the federal government, no subvention is required unless the statute or executive order mandates costs that exceed the mandate in that federal law or regulation. (Gov. Code, § 17556(c).) The Order implements federally mandated requirements under the federal Clean Water Act and implementing regulations and its requirements are therefore not subject to subvention of funds. This includes federal requirements to: (i) effectively prohibit non-stormwater discharges through the MS4 to receiving waters; (ii) reduce the discharge of pollutants in stormwater to the maximum extent practicable; (iii) include such other provisions as the permitting authority (here, the Los Angeles Water Board)

determines appropriate for the control of such pollutants; (iv) attain applicable TMDL wasteload allocations; and (v) conduct monitoring and reporting.

Non-stormwater discharge prohibition: Federal law requires that an MS4 permit effectively prohibit non-stormwater discharges through the MS4 to receiving waters. (33 U.S.C. § 1342(p)(3)(B)(ii).) The Order's requirements to achieve the effective prohibition of non-stormwater discharges are thus compelled by federal law.

TMDL requirements: The Clean Water Act requires TMDLs to be established for waterbodies that do not meet federal water quality standards. (33 U.S.C. § 1313(d).) The Clean Water Act also requires that MS4 permits include "such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants." (33 U.S.C. § 1342(p)(3)(B)(iii).) U.S. EPA interprets this provision to mandate "controls to reduce the discharge of pollutants to the maximum extent practicable, *and where necessary water quality-based controls*."[498]

Once U.S. EPA or a state establishes a TMDL, federal law requires that NPDES permits must contain water quality-based effluent limitations (WQBELs) consistent with the assumptions and requirements of any applicable wasteload allocation. (40 C.F.R. § 122.44(d)(1)(vii)(B).) Indeed, TMDLs are developed for the purpose of specifying requirements for the achievement of water quality standards in impaired waters (33 U.S.C. § 1313(d); 40 C.F.R. § 130.7) The Order's requirements for attainment of TMDL wasteload allocations are therefore compelled by federal law. Several generations of the MS4 permits issued in California have prohibited discharges that cause or contribute to exceedances of water quality standards in the receiving water. TMDL provisions, including WQBELs, simply add a process for meeting this requirement, generally based on a compliance schedule.

Monitoring and reporting requirements: Federal law requires that NPDES permits incorporate monitoring and reporting provisions. (33 U.S.C. §§ 1318(a); 1342(a)(2); 40 C.F.R. §§ 122.26(d)(2)(i)(F); 122.41(h), (j)-(l); 122.42(c); 122.44(i); 122.48.) The Order's monitoring and reporting requirements are thus imposed pursuant to federal law.

Maximum Extent Practicable (MEP) standard: The Clean Water Act mandates that the Order "require controls to reduce the discharge of pollutants to the maximum extent practicable." (33 U.S.C. § 1342(p)(3)(B)(iii).) *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, as modified on denial of rehearing (Nov. 16, 2016) (*Department of Finance*) analyzed whether the Clean Water Act's MEP standard required four particular provisions concerning trash receptacles and inspections in the 2001 Los Angeles County MS4 permit. In concluding that the provisions were not required by federal law, the Supreme Court stated that, "[h]ad the Regional Board found when imposing the disputed permit conditions, that those conditions were the only means by which the maximum extent practicable standard could be implemented, deference to the board's expertise in reaching that finding would be appropriate." (*Department of Finance, supra*, 1 Cal.5th at p. 768.) The Supreme Court further stated that "[s]uch findings

[498] Phase I Stormwater Regulations, Final Rule, 55 Fed. Reg. 47990, 47994 (Nov. 16, 1990) (emphasis added); see also *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd*. (2004) 124 Cal.App.4th 866, 882-887; Phase II Stormwater Regulations, Final Rule, 64 Fed. Reg. 68722, 68737.

are “case specific, based among other things on factual circumstances.” (*Id.,* fn. 15.)

To be entitled to deference, regional water boards must make an express finding that the particular set of permit conditions finally embodied in a given permit is required to meet that federal standard and must support that finding with evidence. The Los Angeles Water Board expressly finds that the Order specifies requirements necessary for the Permittees to reduce the discharge of pollutants in MS4 discharges to the MEP. Parts IV and VIII establish program requirements for Stormwater Management Program Minimum Control Measures, including programs for public information and participation, industrial and commercial facilities, construction activities, planning and land development, public agency activities, and illicit discharge detection and elimination, among others pursuant to 40 CFR section 122.26(d)(2)(iv). The requirements of these programs represent structural and non-structural water quality control measures that are effective, technically feasible, and generally accepted as appropriate.

Part IX establishes elective program requirements related to Watershed Management Programs (WMP), which provide an alternative compliance path through the preparation of a WMP that allows the Permittees to prioritize water quality issues and propose the specific control measures to address the prioritized issues and achieve the receiving water limitations and numeric WQBELs in accordance with a time schedule. This allowance also provides Permittees with ample flexibility to select, in a customized fashion, the water quality control measures that will reduce pollutants in stormwater to the maximum extent practicable.

The Los Angeles Water Board finds that the programmatic requirements of the Order are necessary to meet the MEP standard. The mix of program elements reflects the necessary pollutant reduction expected by the demanding federal MEP standard, but also represents a balancing of competing interests such as effectiveness, regulatory compliance, public acceptance, cost, and technical feasibility. To the extent there may be multiple means of achieving pollutant reductions and that there could be trade-offs between program areas with potentially higher costs and greater pollutant reductions, the permit programs are structured to provide the optimum reduction of pollutants necessary to reduce pollutants to the maximum extent practicable. This finding is the expert conclusion of the principal state agency charged with implementing the NPDES program in California and therefore entitled to deference under *Department of Finance.*

Finally, the Supreme Court in *Department of Finance* suggested that the inclusion of equivalent or substantially similar provisions by the U.S. EPA in other permits may support a finding that the provisions are necessary to achieve MEP. (*Dept. of Finance, supra*, 1 Cal.5th at p. 772.) The Los Angeles Water Board has examined the following U.S. EPA issued permits, among others, and concluded that they contain equivalent and/or substantially similar provisions: Massachusetts MS4 General Permit, Washington D.C. MS4 Permit, Albuquerque MS4 Watershed Permit, Boise/Garden City MS4 Permit, and Guam MS4 Permit. Previous sections of the Fact Sheet identify the specific provisions that are similar in these U.S. EPA issued permits.

2. Permittees have authority to fund the costs through service charges, fees, or assessments:

Even if any of the permit provisions could be considered unfunded state mandates, under Government Code section 17556, subdivision (d), a state mandate is not subject to reimbursement if the local agency has the authority to fund the costs through service charges, fees, or assessments. (*Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 398.) Here, Permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with the Order. Permittees certainly have fee authority under their police powers. (See, Cal. Const., art. XI, § 7; *Freeman v. Contra Costa County Water Dist*. (1971) 18 Cal.App.3d 404, 408 ("It cannot be denied that prevention of water pollution is a legitimate governmental objective, in furtherance of which the police power may be exercised."); *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 561-62 (holding in part that local governments have the authority sufficient to pay for inspection requirements for commercial and industrial facilities and construction sites to ensure compliance with various environmental regulations in an MS4 permit under their police powers for the prevention of water pollution). This Fact Sheet demonstrates that numerous activities contribute to the pollutant loading from 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 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 ["To the extent a local agency or school district 'has the authority' to charge for the mandated program or increased level of service, that charge cannot be recovered as a state-mandated cost."], quoting *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401; *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

Permittees have argued in the past that their fee or taxation authority is constrained by article XIII D, section 6, of the California Constitution, also known as Proposition 218. (Cal. Const., art. XIII D, § 6, subd. (c); *see also Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1358-1359.) However, Proposition 218 is not an impediment to Permittees' fee authority.[499] The Constitution has an exception to the voter approval requirements of Proposition 218, "for fees or charges for sewer, water, and refuse collection services." (Cal. Const. Article XIII D, section 6, subd. (c).) In recent years, the Legislature enacted two important pieces of legislation confirming fee authority without the need for voter approval. In Assembly Bill 2043 (2014), effective January 1, 2015, the Legislature amended the definition of "water" for purposes of articles XIII C and XIII D to mean "water from any source." (Gov. Code, § 53750, subd. (n), amended by Assembly Bill 2043 (Stats. 2014, ch. 78, § 2.) In doing so, the Legislature stated that its act "is declaratory of existing law." (Stats. 2014, ch. 78, § 1(c).) With Senate Bill 231 (2017), effective January 1, 2018, the Legislature "reaffirm[ed] and reiterate[d]" that the definition of "sewer" for purposes of article XIII D includes:

[499] Such authority is also undiminished by Proposition 26, which specifically excludes assessments and property-related fees imposed in accordance with Proposition 218 from the definition of taxes. (Cal. Const., art. XIII C, § 1, subd. (e)(7).).

> *systems, all real estate, fixtures, and personal property owned, controlled, operated, or managed in connection with or to facilitate sewage collection, treatment, or disposition for sanitary or drainage purposes, including lateral and connecting sewers, interceptors, trunk and outfall lines, sanitary sewage treatment or disposal plants or works, drains, conduits, outlets for surface or storm waters, and any and all other works, property, or structures necessary or convenient for the collection or disposal of sewage, industrial waste, or surface or storm waters.*

(Gov. Code, § 53750, subd. (f), and § 53751, subd. (i), added by Senate Bill 231, Stats. 2017, ch. 536, § 2 (emphases added).) These legislative actions confirm that the Permittees have authority to raise fees or charges, without voter approval, for costs related to their MS4s.

In addition, Health and Safety Code section 5471, subdivision (a), gives dischargers fee authority for "services and facilities furnished…in connection with its water, sanitation, *storm drainage*, or sewerage system." (Health & Safety Code, § 5471, subd. (a) (emphasis added).) Similarly, Public Resources Code section 40059, subdivision (a)(1), also confers fee authority on counties, cities, districts, or other local governmental agencies for "[a]spects of solid waste handling which are of local concern, including, but not limited to, frequency of collection, means of collection and transportation, level of services, charges and fees, and nature, location, and extent of providing solid waste handling services."

The ability of the Permittees to levy fees, assessments, or service charges to pay for compliance with the requirements of the Order cannot be disputed. In addition to the general authority above, some of the Permittees have specific authority to levy funds to pay for permit compliance. By way of example, the Ventura County Board of Supervisors approved the concept of a countywide NPDES permit program and the use of the Flood Management District (presently the Watershed Protection District) benefit assessment authority to finance it in April 1992. On June 30, 1992, the Ventura County Board of Supervisors adopted a benefit assessment fee for stormwater and flood management in the unincorporated areas of Ventura County and the cities within the County, to be used in part to finance the implementation of a countywide NPDES municipal stormwater permit program. The Ventura County MS4 Permittees entered into agreement with the Watershed Protection District to finance the activities related to the Ventura County MS4 Permit for shared and district-wide expenses. The Permittees are also given the option to use the Benefit Assessment Program to finance their respective activities related to reducing the discharge of pollutants from their MS4s under the MS4 Permit. Therefore, the Ventura County Watershed Protection District (VCWPD), through the Benefit Assessment Program, has the authority to impose a fee or charge for implementation of this permit. Furthermore, in 2005, the Legislature authorized the VCWPD to increase property related fees to fund storm drainage service and facilities within its jurisdiction.[500] The VCWPD has statutory authorization to levy an ad valorem tax upon all taxable property, an assessment upon all taxable real property in the district, or a fee imposed pursuant to Article XIII D of the California Constitution, to pay the costs and expenses of the district.[501]

[500] Ventura County Watershed Protection Act, California Water Code Appendix, Chapter 46, § 46-12.
[501] Ibid.

The LACFCD also has specific statutory authority to levy a tax, fee, or charge to comply with the requirements of the Order, including implementation of approved WMPs. The LACFCD is authorized:

> To levy a tax, in compliance with the applicable provisions of Article XIII C of the California Constitution, or impose a fee or charge, in compliance with the applicable provisions of Article XIII D of the California Constitution, to pay the costs and expenses of carrying out projects and programs to increase stormwater capture and reduce stormwater and urban runoff pollution in the district in accordance with criteria established by the ordinance adopted pursuant to subsection 8c. Projects and programs funded by the revenues from the tax, fee, or charge may include projects providing multiple benefits that increase water supply, improve water quality, and, where appropriate, provide community enhancements such as the greening of schools, parks, and wetlands, and increased public access to rivers, lakes, and streams.[502]

Revenues derived from any tax, fee, or charge imposed would be subject to specific allocations. Forty percent of any revenues derived from any LACFCD tax, fee, or charge is to be allocated to cities within the boundaries of the district and to the County of Los Angeles for implementation, operation and maintenance, and administration of project and programs within their respective jurisdictions. Fifty percent shall also be allocated to pay for the implementation, operation and maintenance, and administration of watershed-based projects and programs, including WMPs.[503]

Finally, even if voter approval may be required prior to levying fees, that does not mean that a local agency lacks the authority to levy fees. In *Paradise Irrigation Dist. v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 182, the Court considered whether the majority protest procedure added by Proposition 218 deprived local agencies of authority to impose fees for water service. Article XIII D, section 6(a) requires a local agency to identify parcels subject to a new fee, calculate the fee amount, and provide notice to affected property owners. (Cal. Const., art. XIII D, § 6, subd. (a)(1).) If a majority of the property owners submit written protests against the fee, the fee may not be imposed. (*Id.*, subd. (a)(2).) The Court held that the "majority protest procedures are properly construed as a power-sharing arrangement between the districts and their customers, rather than a deprivation of fee authority." (33 Cal.App.5th at p. 182.) It explained that, when considering how voter powers affect the ability of local governments to impose fees, courts "presume local voters will give appropriate consideration and deference to state mandated requirements . . . ." (*Id*. at p. 194, citing *Bighorn-Desert View Water Agency v. Verjil* (2006) 39 Cal.4th 205, 220.) "Although this power-sharing arrangement has the potential for conflict, we must presume that both sides will act reasonably and in good faith." (*Id.*, at p. 192.) Further, the fact that, "as a matter of practical reality, the majority protest procedure allows water customers to defeat the District's authority to levy fees" was not dispositive; "the inquiry into fee authority constitutes an issue of law rather than a question of fact." (*Id*. at p. 195, citing *Connell*, *supra*, 59 Cal.App.4th at p. 401.) "Fee authority is a matter governed by statute rather than by factual considerations of practicality;" it

[502] Cal. Wat. Code, § App. § 28-2, subd. 8a.
[503] Id., subd. 8b.

is not controlled by whether municipalities have tried and failed to levy fees. (*Id.*) If there is statutory authority to levy fees, then there is no right to subvention. (*Id.)*

XV. PUBLIC PARTICIPATION

The Los Angeles Water Board has considered the issuance of WDRs that will serve as an NPDES permit for MS4 discharges within the Los Angeles Region. The Los Angeles Water Board staff has encouraged public participation in the permit development process. Over a period of three years from May 2018 to May 2021, the Los Angeles Water Board has held multiple listening sessions, workshops, and Board meeting agenda items focusing on issues pertinent to Permittees in both counties. Additionally, Board staff have met with Permittees and interested stakeholders upon request. The following information is provided pursuant to 40 CFR § 124.8(b)(6) and (7).

A. Permittee and Stakeholder Participation in Permit Issuance Process

1. Notification: Intent to Issue a Region-Wide Phase I MS4 Permit

On September 5, 2017, the Los Angeles Water Board sent a letter to all Permittees in the Los Angeles Region to announce the Board's intent to issue a region-wide Phase I MS4 Permit.

2. Working Proposal

On December 10, 2019, the Los Angeles Water Board released a staff Working Proposal to Permittees in the Los Angeles Region and key stakeholders for discussion purposes. This staff working proposal did not constitute either a "draft permit" or a "proposed permit" as defined in Title 40 Code of Federal Regulations (40 CFR) sections 122.2 or 124.6. The Working Proposal allowed Permittees and stakeholders to provide oral and written input that would facilitate future discussion at board meetings/workshops and aid Board staff in developing the tentative draft permit.

3. Board Meetings and Workshops

The Los Angeles Water Board on many occasions starting in May 2018 had an item on its Meeting agenda to solicit comments and feedback from the Board, Permittees, and stakeholders on the issuance of the Regional MS4 Permit. Board staff has also presented on specific topics during public workshops, some of which were held at a regularly scheduled Board Meeting or special Board meeting (Board Workshop). Most of the meeting and workshop dates are summarized as follows:

a. Board Workshop: May 10, 2018

Board staff presented their monitoring data analysis for the Los Angeles River, San Gabriel River, and Los Cerritos Channel/Alamitos Bay Watersheds and discussed solutions to improve data reporting in the Regional MS4 Permit.

b. Board Meeting: June 14, 2018

The Los Angeles Water Board had an agenda item to facilitate continued discussion of the Regional MS4 Permit ("MS4 standing item"). The purpose of the "MS4 standing item" was to provide a forum for Board members to discuss, and for Permittees and stakeholders to provide comments on, any aspect of the Regional MS4 Permit. This noticed item provided Permittees and other stakeholders with the opportunity to communicate directly with the Board regarding their interests and concerns about the current permits or pending issuance of the Regional MS4 Permit. The MS4 standing item also provided

an opportunity for the Board to provide input to staff on permit implementation or development. No action or voting took place during these items.

c. Board Workshop: July 12, 2018

Board staff presented their monitoring data analysis for the Upper Santa Clara River, Santa Monica Bay, and Dominguez Channel and Harbors Watersheds and the permit issuance timelines. Additionally, Board staff introduced the specific concepts to include in the Regional MS4 Permit such as new/revised TMDLs, Statewide Trash Amendments, and providing Ventura County Permittees the option to participate in a WMP.

d. Board Workshop: September 13, 2018

Board staff presented their monitoring data analysis for all the watersheds within Ventura County, Permittee-reported costs of implementing the 2010 Ventura County MS4 Permit, and the permit issuance timelines. The Board discussed the regional permit approach as it related to Ventura County Permittees.

e. Board Meeting: October 11, 2018

The Los Angeles Water Board had a standing MS4 item.

f. Board Meeting: November 8, 2018

The Los Angeles Water Board had a standing MS4 item.

g. Board Meeting: March 14, 2019

The Los Angeles Water Board had a standing MS4 item.

h. Board Workshop: April 11, 2019

Board staff addressed economic considerations with regard to issuance of a Regional MS4 Permit based on specific Permittee-reported costs of compliance with the previous permits and summarized some state funding sources. Permittees and stakeholders also provided information on the cost of compliance and funding related topics, such as cost reporting guidance, stormwater utility program management, and available funds from the Los Angeles County Safe Clean Water Program and Ventura County Watershed Protection District Benefit Assessment Program.

i. Board Meeting: June 13, 2019

The Los Angeles Water Board had a standing MS4 item.

j. Board Meeting: July 11, 2019

The Los Angeles Water Board had a standing MS4 item.

k. Board Meeting: September 12, 2019

The Los Angeles Water Board had a standing MS4 item.

l. Board Meeting: October 10, 2019

The Los Angeles Water Board had a standing MS4 item.

m. Board Meeting: November 14, 2019

Board staff presented a summary of stakeholder engagement, including the employment of a professional facilitator to better understand the interests, needs and perspectives of stakeholders and to explore areas of mutual agreement that could be reflected in the Regional MS4 Permit.

n. Board Meeting: December 12, 2019

The Los Angeles Water Board had a standing MS4 item.

o. Public Workshop: January 7, 2020

Los Angeles Water Board hosted a facilitated stakeholder workshop to discuss the Working Proposal and issues such as what constitutes permit success, addressing cost/timeline challenges, and measuring progress under the new permit.

p. Board Meeting: February 13, 2020

The Los Angeles Water Board had a standing MS4 item and presented on the types of comments received on the Working Proposal. Comments discussed included changes proposed to the Minimum Control Measures, monitoring and reporting requirements, watershed management programs, and TMDLs.

q. Board Meeting: May 14, 2020

The Los Angeles Water Board had a standing MS4 item and presented on the options to consider an extension for the near-term TMDL final compliance deadlines.

r. Board Meeting: July 2, 2020

The Los Angeles Water Board had a special board meeting to discuss the schedule for adopting the Regional MS4 Permit with consideration of key issues such as the economic impacts of the COVID-19 pandemic, TMDL final compliance deadlines, and inclusion of narrative/BMP-based effluent limitations versus numeric effluent limitations in the permit.

s. Board Meeting: July 9, 2020

The Los Angeles Water Board had a standing MS4 item.

t. Board Meeting: September 10, 2020

The Los Angeles Water Board had an MS4 standing item. Board staff presented information on: changes that were made in the tentative draft in response to comments received on the Working Proposal; the manner of TMDL incorporation; the status of the TMDL final deadlines extension project; economic considerations; and the proposed State Water Board Order on the WMPs and EWMP petitions.

u. Board Meeting: October 8, 2020

The Los Angeles Water Board had an MS4 standing item. Permittees and other stakeholders presented and provided oral comments on the Tentative Regional MS4 Permit.

v. Public Workshop: October 15, 2020

The Los Angeles Water Board held a public workshop to discuss the manner of TMDL incorporation in the Regional MS4 Permit. All Board Members attended. Board staff presented the basis for the proposed manner of TMDL incorporation in the Regional MS4 Permit. Permittees and other stakeholders presented and provided comments on the proposed manner of TMDL incorporation and alternatives.

w. Public Workshop: November 19, 2020

The Los Angeles Water Board held a public workshop to discuss monitoring and reporting requirements in the Regional MS4 Permit. Several Board Members attended. Board staff presented on monitoring and reporting requirements and then held a question-and-answer session.

x. Board Workshop: December 10, 2020

The Los Angeles Water Board held a Board workshop to follow-up on the October 15 and November 19, 2020 workshops. Board staff discussed the proposed manner of TMDL incorporation in comparison with that of other MS4 permits issued state-wide and by U.S. EPA. Permittees and other stakeholders also provided comments on the proposed manner of TMDL incorporation and alternatives.

y. Board Meeting: March 11, 2021

The Los Angeles Water Board had an MS4 standing item. Permittees and other stakeholders presented and provided comments on the Tentative Regional MS4 Permit.

z. Board Meeting: May 13, 2021

The Los Angeles Water Board had an MS4 standing item. Permittees and other stakeholders presented and provided comments on the Tentative Regional MS4 Permit.

aa. Public Workshop: June 22, 2021

The Los Angeles Water Board held a public workshop to discuss Permittee and stakeholder comments on the Revised Tentative Regional MS4 Permit for Permittees in Los Angeles and Ventura Counties. The first part of the workshop was dedicated to Ventura County Permittees' and stakeholders' comments on particular issues of concern and the Regional Board staff's responses thereto. The second part of the workshop was dedicated to Los Angeles County Permittees' and stakeholders' comments and the Regional Board staff's responses thereto.

4. Meetings with Permittees and Interested Persons

The Los Angeles Water Board staff met with various Permittees and stakeholders upon request. Most of these meetings are summarized below.

a. Meeting: January 25, 2016

The Los Angeles Water Board had a teleconference with the San Gabriel Valley Council of Governments to discuss submission of the ROWD, general questions about the permit issuance process, and general questions about what changes or continuation of permit provisions to expect.

b. Meeting: May 2, 2016

The Los Angeles Water Board held a kick-off meeting with Ventura County Permittees to discuss the preliminary schedule for permit development; identify potential alternative permit structures; and outline some of the major technical and policy aspects of permit development. Twenty-three individuals attended the meeting out of which eight represented the Los Angeles Water Board and the other fifteen represented Ventura County Permittees. After a presentation by Permittees on accomplishments, lessons learned, and permit renewal goals, Permittees had an opportunity to ask questions of staff, raise concerns, and explain their expectations for the new permit.

c. Meeting: May 16, 2016

The Los Angeles Water Board held a meeting with Ventura County Permittees on TMDLs and the Watershed Management Program. Twenty-three individuals attended the meeting out of which ten represented the Los Angeles Water Board, one represented the State Water Board, and the other twelve represented Ventura County Permittees. Permittees proposed a list of TMDLs to incorporate into the permit. Meeting attendees also discussed the structure of the Watershed Management Program and provisions such as the pollutant prioritization process and the use of existing TMDL implementation plans.

d. Meeting: June 8, 2016

The Los Angeles Water Board held a meeting with Ventura County Permittees on time schedule orders (TSOs) and the TSO issuance process in consideration of permit issuance timelines. Eleven individuals attended the meeting out of which three represented the Los Angeles Water Board and the other eight represented Ventura County Permittees.

e. Meeting: July 15, 2016

Ventura County Permittees held a meeting with the Los Angeles Water Board to discuss the monitoring and reporting program and follow-up on items from the previous meeting. Twenty-one individuals attended out of which five represented the Los Angeles Water Board and the other sixteen represented Ventura County Permittees. Meeting attendees discussed pre-meeting materials that were provided by the Permittees giving their recommendations on provisions of the Watershed Management Program and TMDLs. Additionally, meeting attendees discussed the following items in the monitoring and reporting program: receiving water monitoring sites, constituents to be monitored, and stormwater monitoring program constituents table and requested Permittees' feedback.

f. Meeting: August 1, 2016

The Los Angeles Water Board had a teleconference with Ventura County Permittees to discuss minimum control measures (MCMs). Seventeen individuals participated in the teleconference where five represented the Los Angeles Water Board, one represented the State Water Board, and the other eleven represented Ventura County Permittees. Meeting attendees discussed pre-meeting materials where Permittees proposed changes to the MCMs in their previous permit.

g. Meeting: October 20, 2016

The Los Angeles Water Board had a teleconference with Ventura County Permittees to provide a status update on the permit issuance process.

h. Meeting: August 29, 2017

The Los Angeles Water Board held a meeting with City of Los Angeles to introduce the concept of issuing a Regional MS4 Permit. Thirteen individuals attended out of which eight represented the Los Angeles Water Board and five represented City of Los Angeles.

i. Meeting: August 31, 2017

The Los Angeles Water Board held a meeting with Ventura County Permittees to introduce the concept of issuing a Regional MS4 Permit. Six individuals attended out of which four represented the Los Angeles Water Board and two represented Ventura County Permittees.

j. Meeting: September 5, 2017

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to introduce the concept of issuing a Regional MS4 Permit. Five individuals attended out of which four represented the Los Angeles Water Board and one represented Los Angeles County and LACFCD.

k. Meeting: September 21, 2017

Ventura County Permittees held a meeting with the Los Angeles Water Board to present to Ventura County Public Works Directors information about the permit renewal process, the Regional MS4 Permit concept, costs, funding, and the Statewide Trash Amendments. Twenty-eight individuals attended out of which three represented the Los Angeles Water Board and twenty-five represented Ventura County Permittees.

l. Meeting: December 19, 2017

The Los Angeles Water Board had a teleconference with the City of Long Beach to introduce the concept of issuing a Regional MS4 Permit. Eight individuals attended out of which four represented the Los Angeles Water Board and four represented the City of Long Beach.

m. Meeting: April 10, 2018

The City of Long Beach held a meeting with the Los Angeles Water Board to discuss the issuance of a Regional MS4 Permit and the City of Long Beach's ROWD. Eleven individuals attended out of which four represented the Los Angeles Water Board and seven represented the City of Long Beach.

n. Meeting: August 7, 2018

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD. Los Angeles County and LACFCD proposed TSO-related fact sheet language for the Regional MS4 Permit. Six individuals attended out of which three represented the Los Angeles Water Board and three represented Los Angeles County and LACFCD.

o. Meeting: August 10, 2018

The Los Angeles Water Board held a meeting with Ventura County Permittees to discuss the addition of receiving water and outfall stations in the Malibu Creek subwatershed and the non-stormwater screening and outfall monitoring program proposals for the Regional MS4 Permit. Six individuals attended out of which three represented the Los Angeles Water Board and three represented Ventura County Permittees.

p. Meeting: August 15, 2018

The Los Water Board staff held a meeting with Los Angeles County and LACFCD. Los Angeles County and LACFCD proposed regional project downstream solutions and also proposed adding language for the Regional MS4 Permit fact sheet discussing the Biotic Ligand Model (BLM). Seven individuals attended out of which three represented the Los Angeles Water Board and four represented Los Angeles County and LACFCD.

q. Meeting: September 10, 2018

The Los Angeles Water Board held public Listening Session with San Gabriel Valley Council of Governments Water Policy Committee (SGVCOG). The Los Angeles Water Board listened to and discussed cost concerns for current WMP/EWMP implementation and timeline for the Regional MS4 Permit issuance. Eighteen individuals were present out of which two were Los Angeles Water Board Members, four were Board staff, and four represented the SGVCOG. Additionally, eight public observers attended representing various Permittees, non-governmental organizations (NGOs), and other stakeholders.

r. Meeting: September 19, 2018

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to discuss future workshops of the Regional MS4 Permit and the state-wide bacteria provisions. Four individuals attended out of which two represented the Los Angeles Water Board and two represented Los Angeles County and LACFCD.

s. Meeting: October 26, 2018

The Los Angeles Water Board held a meeting with NGOs to discuss the Regional MS4 Permit, specifically on incorporation of robust development/redevelopment standards such as capturing the 90^{th} or 95^{th} percentile rainfall, potential incorporation of BLM, and provide a public platform for Permittee monitoring data. Eight individuals attended out of which four represented the Los Angeles Water Board and the other four represented Heal the Bay, Los Angeles Waterkeeper (LA Waterkeeper), and Natural Resources Defense Council (NRDC).

t. Meeting: December 19, 2018

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to discuss the Regional MS4 Permit issuance process and the Safe, Clean Water Program. Four individuals attended out of which two represented the Los Angeles Water Board and two represented Los Angeles County and LACFCD.

u. Meeting: January 18, 2019

The Los Angeles Water Board held a meeting with the NGOs to discuss Los Angeles County monitoring data. Seven individuals attended out of which four represented the Los Angeles Water Board and the other three represented Heal the Bay, LA Waterkeeper, and NRDC.

v. The Las Virgenes – Malibu Council of Governments Governing Board Meeting: February 19, 2019

The Las Virgenes – Malibu Council of Governments Governing Board held a public Listening Session with the Los Angeles Water Board. The Los Angeles Water Board listened to and answered queries about the Regional MS4 Permit issuance timelines, concerns about funds from the Safe, Clean Water Program in relation to EWMP compliance schedules, and future special studies on natural sources. More than 22 individuals attended out of which two were Board Members, four were Board staff, and sixteen represented the Las Virgenes – Malibu Council of Governments Governing Board and the Malibu Creek EWMP group members. Public observers included NGOs and other stakeholders.

w. Meeting: February 20, 2019

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to discuss the Safe, Clean Water Program. Eight individuals attended out of which four represented the Los Angeles Water Board and four represented Los Angeles County and LACFCD.

x. Meeting: February 26, 2019

The Los Angeles Water Board held a meeting with several Los Angeles County Permittees. Fifteen individuals attended out of which three represented the Los Angeles Water Board, and twelve represented Larry Walker Associates (LWA), Richard Watson & Associates (RWA), City of Los Angeles, and Los Angeles County. LWA proposed compliance mechanisms and Regional MS4 Permit language for addressing bacteria.

y. Meeting: March 8, 2019

The Los Angeles Water Board held a meeting with the NGOs to discuss the Regional MS4 Permit to discuss these organizations' request for a shorter permit. Eleven individuals attended out of which three represented Los Angeles Water Board, two represented State Water Board, and the other six were from Heal the Bay, LA Waterkeeper, and NRDC.

z. Meeting: March 20, 2019

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD. Los Angeles County and LACFCD proposed Regional MS4 Permit language for the Safe, Clean Water Program, discussed the upcoming April 2019 Board workshop, and proposed reconsidering TMDLs rather than requesting TSOs to extend TMDL compliance schedules. Seven individuals attended out of which two represented the Los Angeles Water Board and five represented Los Angeles County and LACFCD.

aa. Meeting: June 19, 2019

The Los Angeles Water Board held a meeting with the NGOs to discuss the Regional MS4 Permit timelines, removal of the WMP/EWMP distinction in the Regional MS4 Permit, and annual report proposals for reporting on compliance with regional projects in the WMP/EWMP. Nine individuals were in attendance out of which four represented the Los Angeles Water Board and the other five represented Heal the Bay, LA Waterkeeper, and NRDC.

bb. Meeting: June 25, 2019

Ventura County Permittees held a public Listening Session with the Los Angeles Water Board. The Los Angeles Water Board listened to and discussed WMP development and implementation concerns, cost concerns, compliance with wet weather bacteria TMDLs, and permit issuance timelines. Thirty individuals attended out of which three were Los Angeles Water Board Members, four were Board staff, twenty-one represented Ventura County Permittees, and two were public observers representing CASQ Engineering and the Las Virgenes Municipal Water District.

cc. Meeting: July 8, 2019

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to discuss cost analysis of some EWMPs with consideration of funds from the Safe, Clean Water Program. Los Angeles County and LACFCD also proposed specific TMDLs for the Board to reconsider. Eight individuals attended out of which four represented the Los Angeles Water Board and four represented Los Angeles County and LACFCD.

dd. Meeting: July 17, 2019

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to present information about planning versus actual costs on specific regional projects and continue the discussion on TMDL reconsiderations and cost analysis of some EWMPs with consideration of funds from the Safe, Clean Water Program. Four individuals attended out of which two represented the Los Angeles Water Board and two represented Los Angeles County and LACFCD.

ee. Meeting: August 22, 2019

The Los Angeles Water Board held a meeting with City of Los Angeles to discuss the Regional MS4 Permit issuance timeline, Safe, Clean Water Program, and TMDL final compliance deadlines. Five individuals attended out of which three represented the Los Angeles Water Board and two represented City of Los Angeles.

ff. Meeting: August 26, 2019

The Los Angeles Water Board held a meeting with Ventura County Permittees to discuss the Los Angeles County Permit markup provided to us in 2016 proposing permit language, permit issuance process, and follow-up on the previous meeting with the Ventura County public works directors. Fourteen individuals attended out of which four represented the Los Angeles Water Board and ten represented Ventura County Permittees.

gg. Meeting: August 28, 2019

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to discuss priority TMDLs for Board's reconsideration, upcoming presentations at Board meetings on regional projects, and permit issuance schedule. Nine individuals attended out of which four represented the Los Angeles Water Board and five represented Los Angeles County and LACFCD.

hh. Meeting: September 9, 2019

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to discuss economic considerations, including the cost of compliance, for the Regional MS4 Permit, LACFCD's dashboard for regional projects, and suggestions for the regional permit requirements. Three individuals attended out of which one represented the Los Angeles Water Board and two represented Los Angeles County and LACFCD.

ii. Meeting: September 10, 2019

The Los Angeles Water Board held a meeting with the NGOs to discuss Permittees' progress implementing their EWMPs and propose annual report language for reporting on compliance with multi-year efforts in EWMPs. Five individuals were in attendance out of which two represented the Los Angeles Water Board and the other three represented Heal the Bay, LA Waterkeeper, and NRDC.

jj. Meeting: September 18, 2019

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to discuss the alignment of Marina del Rey TMDLs with Measure W funding, the regional permit reissuance process, and the upcoming NGO EWMP Report. Six individuals attended out of which two represented the Los Angeles Water Board and four represented Los Angeles County and LACFCD.

kk. Meeting: September 18, 2019

The Los Angeles Water Board had a teleconference with Ventura County, VCWPD, and the City of Agoura Hills to discuss the compliance with Malibu Creek TMDL requirements and the Medea/Palo Comado Stormwater Treatment System in the City of Agoura Hills. Seven individuals were in attendance out of which two represented the Los Angeles Water Board, two represented the City of Agoura Hills, two represented VCWPD, and one represented Ventura County.

ll. Meeting: October 1, 2019

The Los Angeles Water Board held a meeting with Ventura County Permittees to discuss the Reasonable Assurance Analysis (RAA), source identification component of a WMP, timelines to develop a WMP, upcoming Malibu Creek Bacteria TMDL TSO request, usage of existing TMDL implementation plans for WMP proposals, and regional permit issuance schedule. Fourteen individuals attended out of which three represented the Los Angeles Water Board and eleven represented Ventura County Permittees.

mm. Meeting: October 16, 2019

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to discuss possible extension of TMDL compliance deadlines, regional permit reissuance process, and Los Angeles County's dashboard of completed regional stormwater projects and green infrastructure projects. Ten individuals were in attendance out of which five represented the Los Angeles Water Board and five represented Los Angeles County and LACFCD.

nn. Meeting: November 20, 2019

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to discuss the regional permit reissuance process and possible extension of TMDL compliance dates. Ten individuals were in attendance out of which five represented the Los Angeles Water Board and five represented Los Angeles County and LACFCD.

oo. Meeting: December 16, 2019

The Los Angeles Water Board held a meeting with City of Los Angeles to discuss the Ballona Creek TSO extension request and the Working Proposal of the Regional MS4 Permit. Eleven individuals were in attendance out of which five represented the Los Angeles Water Board and six represented City of Los Angeles.

pp. Meeting: December 17, 2019

The Los Angeles Water Board held a facilitated meeting with the NGOs to discuss the Regional MS4 Permit. Ten individuals were in attendance out of which four represented the Los Angeles Water Board, two represented Heal the Bay, one represented NRDC, and three represented LA Waterkeeper.

qq. Meeting: December 17, 2019

The Los Angeles Water Board held a facilitated meeting with NRDC, City of Los Angeles, San Gabriel Valley Council of Governments (SGVCOG), Los Angeles County/LACFCD, and Ventura County to discuss the Regional MS4 Permit. Fourteen individuals were in attendance out of which four represented the Los Angeles Water Board, one represented NRDC, three represented City of Los Angeles, two represented City of Monrovia/SGVCOG, two represented Los Angeles County/LACFCD, and two represented Ventura County.

rr. Meeting: January 21, 2020

The Los Angeles Water Board held a meeting with Los Angeles County and LACFCD to discuss permit reissuance schedules, TMDL reconsiderations for time extensions, and updates on Measure W. Nine individuals attended out of which five represented the Los Angeles Water Board and four represented Los Angeles County and LACFCD.

ss. Meeting: January 22, 2020

The Los Angeles Water Board held a meeting with NGOs to discuss the Regional MS4 Permit Staff Working Proposal and solicit feedback. Eight individuals attended out of which four represented the Los Angeles Water Board, and the other four represented Heal the Bay, LA Waterkeeper, and NRDC.

tt. Meeting: January 23, 2020

The Los Angeles Water Board held a meeting with City of Los Angeles to discuss the Regional MS4 Permit Staff Working Proposal and solicit feedback. The City of Los Angeles specifically discussed suggestions for the Watershed Management NOI submittal schedule and content, monitoring and reporting requirements, Planning and Land Development MCM, trash reporting requirements, Industrial/Commercial Facilities Program MCM, Illicit Discharge Detection and Elimination Program MCM, and filming BMPs under the non-stormwater discharge prohibitions. Fourteen individuals attended out of which seven represented the Los Angeles Water Board and the other seven represented the City of Los Angeles.

uu. Meeting: January 27, 2020

The Los Angeles Water Board held a meeting with The Nature Conservancy to discuss the Regional MS4 Permit Staff Working Proposal and solicit feedback. The Nature Conservancy discussed suggestions on how to incorporate and encourage nature-based solutions into the Regional MS4 Permit. Six individuals attended out of which three represented the Los Angeles Water Board and the other three were from The Nature Conservancy.

vv. Meeting: January 28, 2020

The Los Angeles Water Board held a meeting with Ventura County Permittees to discuss the Regional MS4 Permit Staff Working Proposal and solicit feedback. Ventura County Permittees specifically discussed suggestions to edit timelines for WMP submittals, Statewide Trash Amendment provisions, TMDLs, MCMs, and monitoring. Twenty individuals attended out of which eight represented the Los Angeles Water Board and the other twelve represented Ventura County Permittees.

ww. Meeting: February 19, 2020

The Los Angeles Water Board held a meeting with Los Angeles County and the LACFCD to discuss permit reissuance timelines, TMDL extension requests, and Measure W fund distribution status. Eight individuals attended out of which five represented the Los Angeles Water Board and the other three represented Los Angeles County and LACFCD.

xx. Meeting: February 21, 2020

The Los Angeles Water Board held a meeting with NGOs to discuss permit reissuance timelines and general comments on the Working Proposal of the Regional MS4 Permit. Eight individuals attended out of which five represented the Los Angeles Water Board and the other three represented Heal the Bay, LA Waterkeeper, and NRDC.

yy. Meeting: March 2, 2020

The Los Angeles Water Board held a meeting with the City of Los Angeles to discuss TSO implementation progress and the challenges of implementing the MS4 permit. Six individuals attended out of which four represented the Los Angeles Water Board and the other two represented City of Los Angeles.

zz. Meeting: March 18, 2020

The Los Angeles Water Board held a teleconference with Los Angeles County and the LACFCD to discuss the status of the Regional MS4 Permit considering the COVID-19 pandemic. Six individuals attended out of which two represented the Los Angeles Water Board and the other four represented Los Angeles County and LACFCD.

aaa. Meeting: April 15, 2020

The Los Angeles Water Board held a teleconference with Los Angeles County and the LACFCD to discuss the status of the Regional MS4 Permit, share updates on monitoring and project implementation considering the COVID-19 pandemic, and discuss the status of Measure W. Nine individuals attended out of which five represented the Los Angeles Water Board and the other four represented Los Angeles County and LACFCD.

bbb. Meeting: April 21, 2020

The Los Angeles Water Board held a teleconference with the City of La Habra Heights to discuss the Regional Permit and concerns from the City, which included TMDL compliance and comingling discharges. Ten individuals attended out of which five represented the Los Angeles Water Board and the other five represented the City of La Habra Heights.

ccc. Meeting: April 23, 2020

The Los Angeles Water Board held a teleconference with the City of Los Angeles to discuss the issuance schedule of the Regional MS4 Permit, TMDL compliance date related comments on the Regional MS4 Permit working proposal, the Inner Cabrillo Beach Bacteria TSO, and the Ballona Creek Bacteria TSO. Ten individuals attended out of which five represented the Los Angeles Water Board and the other five represented City of Los Angeles.

ddd. Meeting: May 28, 2020

The Los Angeles Water Board held a teleconference with the City of Los Angeles to discuss the extension of TMDL compliance schedules alongside Regional MS4 Permit issuance, the Inner Cabrillo Beach Bacteria TSO, and questions on shoreline monitoring considering the pandemic. Eight individuals attended out of which three represented the Los Angeles Water Board and the other five represented City of Los Angeles.

eee. Meeting: June 2, 2020

The Los Angeles Water Board held a videoconference with Los Angeles County and the LACFCD to discuss the status of the Regional MS4 Permit including a tentative issuance timeline and workshop opportunities, share updates on project implementation considering the COVID-19 pandemic, and discuss the status of Measure W. Eight individuals attended of which three represented the Los Angeles Water Board and the other five represented Los Angeles County and LACFCD.

fff. Meeting: June 8, 2020

The Los Angeles Water Board held a Listening Session with the Los Angeles River Upper Reach 2 Group to discuss their comment letter of February 5, 2020 on the Working Proposal and some of the responses to those comments.

Fourteen individuals attended out of which two represented the Los Angeles Water Board and the other twelve represented the Los Angeles River Upper Reach 2 Group.

ggg. Meeting: June 25, 2020

The Los Angeles Water Board held a videoconference with the City of Los Angeles to discuss the Regional MS4 Permit schedule and Measure W projects. Eight individuals attended out of which four represented the Los Angeles Water Board and the other four represented the City of Los Angeles.

hhh. Meeting: July 23, 2020

The Los Angeles Water Board held a videoconference with the City of Los Angeles to discuss EWMP implementation target load reduction/volume capture goals and the associated costs and schedules. Nine individuals attended out of which four represented the Los Angeles Water Board and the other five represented the City of Los Angeles.

iii. Meeting: August 27, 2020

The Los Angeles Water Board held a videoconference with the City of Los Angeles to discuss the Tentative Regional MS4 Permit, the TMDL deadline extension project, the upcoming Board meeting, and potential customization of the Industrial/Commercial Facilities MCM in the revised WMP. Nine individuals attended out of which four represented the Los Angeles Water Board and the other five represented the City of Los Angeles.

jjj. Meeting: August 27, 2020

The Los Angeles Water Board held a videoconference with Los Angeles County and the LACFCD to discuss TMDL deadline extensions and updates on the Safe Clean Water Program. Eight individuals attended out of which four represented the Los Angeles Water Board and the other four represented Los Angeles County and LACFCD.

kkk. Meeting: September 8, 2020

The Los Angeles Water Board held a videoconference with Ventura County Permittees to discuss changes between the Working Proposal and tentative draft, the manner of TMDL incorporation in the permit, and future workshops. Seventeen individuals attended out of which five represented the Los Angeles Water Board and the other twelve represented Ventura County Permittees.

lll. Meeting: September 9, 2020

The Los Angeles Water Board held a videoconference with Los Angeles County and the LACFCD to discuss the Tentative Draft permit and TMDL deadline extensions. Nine individuals attended out of which four represented the Los Angeles Water Board and the other five represented Los Angeles County and LACFCD.

mmm. Meeting: September 22, 2020

The Los Angeles Water Board held a videoconference with Heal the Bay, LA Waterkeeper, and NRDC to discuss the Regional MS4 Permit Annual Report requirements and the future Manner of TMDL incorporation workshop. Nine individuals attended out of which four represented the Los Angeles Water

Board and the other five represented Heal the Bay, LA Waterkeeper, and NRDC.

nnn. Meeting: September 23, 2020

The Los Angeles Water Board held a videoconference with the City of Los Angeles to discuss the Industrial/Commercial MCM and permit language about Measure W. Ten individuals attended out of which four represented the Los Angeles Water Board and the other six represented the City of Los Angeles.

ooo. Meeting: October 21, 2020

The Los Angeles Water Board held a videoconference with Los Angeles County and the LACFCD to discuss TMDL deadline extensions, the Safe Clean Water Program, and share updates on WMMS and WRAMPS. Ten individuals attended out of which four represented the Los Angeles Water Board and the other six represented Los Angeles County and LACFCD.

ppp. Meeting: November 18, 2020

The Los Angeles Water Board held a videoconference with Los Angeles County and the LACFCD to discuss TMDL deadline extensions and the upcoming MS4 workshop on monitoring and reporting. Nine individuals attended out of which four represented the Los Angeles Water Board and the other five represented Los Angeles County and LACFCD.

qqq. Meeting: November 30, 2020

The Los Angeles Water Board held a videoconference with The Nature Conservancy to discuss comments on the Planning and Land Development MCM. Six individuals attended out of which four represented the Los Angeles Water Board and the other two represented The Nature Conservancy.

rrr. Meeting: December 16, 2020

The Los Angeles Water Board held a videoconference with Los Angeles County and LACFCD to discuss TMDL manner of incorporation into the Regional MS4 Permit and reopener language in the TMDL Basin Plan Amendments for the TMDLs being considered under the TMDL deadline extension project. Nine individuals attended out of which five represented the Los Angeles Water Board and the other four represented Los Angeles County and LACFCD.

sss. Meeting: December 17, 2020

The Los Angeles Water Board held a videoconference with City of Los Angeles to discuss potential impacts on the State Board Water Quality Order addressing the WMP/EWMP petitions, potential revisions to the RAA limiting pollutant approach, and timeline for aquatic toxicity test species sensitivity screening. Eight individuals attended out of which four represented the Los Angeles Water Board and the other four represented City of Los Angeles.

ttt. Meeting: January 20, 2021

The Los Angeles Water Board held a videoconference with Los Angeles County and LACFCD to follow-up on the schedule for the TMDL BPA extension project and any outstanding issues with regards to the Regional

MS4 Permit. Ten individuals attended out of which four represented the Los Angeles Water Board and the other six represented Los Angeles County and LACFCD.

uuu. Meeting: January 28, 2021

The Los Angeles Water Board held a videoconference with the City of Los Angeles to discuss the TMDL Basin Plan Amendment extension project, the Regional MS4 Permit adoption schedule, trash reporting forms, and future revisions to the City's WMP. Nine individuals attended out of which three represented the Los Angeles Water Board and the other six represented the City of Los Angeles.

vvv. Meeting: February 3, 2021

The Los Angeles Water Board held a videoconference with VCWPD, Los Angeles County/LACFCD, City of Los Angeles, City of Monrovia, a consultant representing the Los Cerritos Channel Watershed Management Group, and consultants from Larry Walker Associates representing Ventura County Permittees. Participants discussed the manner of TMDL incorporation in the permit (BMP versus numeric effluent limits approach), TMDL time extensions, and the schedule for permit adoption. Fifteen individuals attended out of which five represented the Los Angeles Water Board, one represented VCWPD, two represented the City of Monrovia, one represented the Los Cerritos Channel Watershed Management Group, two represented the City of Los Angeles, two represented Ventura County Permittees, and two represented Los Angeles County/LACFCD.

www. Meeting: February 17, 2021

The Los Angeles Water Board held a videoconference with Los Angeles County and LACFCD to follow-up with the TMDL Final Compliance Deadline Extension Project and the schedule for the Regional MS4 Permit. Nine individuals attended out of which five represented the Los Angeles Water Board and the other four represented Los Angeles County and LACFCD.

xxx. Meeting: February 25, 2021

The Los Angeles Water Board held a videoconference with the City of Los Angeles to discuss the Regional MS4 Permit adoption schedule, the Ballona Creek TSO, and requested continued support from the Board for City of Los Angeles's regional projects under the Safe, Clean Water Program. Nine individuals attended out of which three represented the Los Angeles Water Board and the other six represented the City of Los Angeles.

yyy. Meeting: February 25, 2021

The Los Angeles Water Board held a videoconference with the Upper Los Angeles River EWMP Group to discuss updates to the EWMP RAA and the impact of the State Board Order WQ 2020-0038 on the Regional MS4 Permit. Ten individuals attended out of which three represented Los Angeles Water Board and the other seven represented the Upper Los Angeles River Group.

zzz. Meeting: March 17, 2021

The Los Angeles Water Board held a videoconference with Los Angeles County and LACFCD to discuss the schedule for the Regional MS4 Permit

adoption and the next steps for the TMDL Final Compliance Deadline Extension Project. Eight individuals attended out of which four represented the Los Angeles Water Board and the other four represented Los Angeles County and LACFCD.

aaaa. Meeting: March 24, 2021

The Los Angeles Water Board held a videoconference with Los Angeles County, LACFCD, and various consultants representing different WMPs to discuss proposed updates to the WMP RAA in consideration of the State Board Order WQ 2020-0038. Thirteen individuals attended out of which four represented the Los Angeles Water Board, three represented Los Angeles County and LACFCD, and the other six represented various consultants representing different WMPs.

bbbb. Meeting: March 30, 2021

The Los Angeles Water Board held a videoconference with the City of Los Angeles to discuss the schedule for the Regional MS4 Permit adoption and the next steps for the TMDL Final Compliance Deadline Extension Project. Eight individuals attended out of which four represented the Los Angeles Water Board and the other four represented the City of Los Angeles.

cccc. Meeting: March 30, 2021

The Los Angeles Water Board held a videoconference with Ventura County/VCWPD, Los Angeles County/LACFCD, City of Los Angeles, City of Monrovia, a consultant representing the Los Cerritos Channel Watershed Management Group, and consultants from Larry Walker Associates representing Ventura County Permittees. This was a follow-up meeting to discuss concerns about the manner of TMDL incorporation in the Regional MS4 Permit. Twelve individuals attended out of which four represented the Los Angeles Water Board, two represented the City of Monrovia, one represented the City of Los Angeles, one represented Los Angeles County/LACFCD, one represented Ventura County/VCWPD, one represented the Los Cerritos Channel Watershed Management Group, and two represented Ventura County Permittees.

dddd. Meeting: April 19, 2021

The Los Angeles Water Board held a videoconference with the Upper Los Angeles River EWMP Group to discuss updates to the EWMP RAA in consideration of the State Board Order WQ 2020-0038 on the Regional MS4 Permit. Eleven individuals attended out of which four represented the Los Angeles Water Board and seven represented the Upper Los Angeles River EWMP Group.

eeee. Meeting: April 21, 2021

The Los Angeles Water Board held a videoconference with Ventura County Permittees to discuss past TMDL final compliance deadlines for the Ventura River Algae TMDL and Kidde and Hobie Beach Bacteria TMDL, benefits of participating in a WMP, and questions about how water quality exceedances trigger enforcement action. Seventeen individuals attended out of which four represented the Los Angeles Water Board and thirteen represented Ventura County Permittees.

ffff. Meeting: April 27, 2021

The Los Angeles Water Board held a videoconference with The Nature Conservancy to discuss the Planning and Land Development MCM in the Tentative Regional MS4 Permit. Six individuals attended out of which four represented the Los Angeles Water Board and two represented The Nature Conservancy.

gggg. Meeting: April 27, 2021

The Los Angeles Water Board held a videoconference with the City of Los Angeles to discuss the schedule for the Regional MS4 Permit issuance, TMDL extensions (e.g., TMDL revision, TSOs), and coordination with Caltrans MS4 on upcoming WMP projects. Nine individuals attended out of which three represented the Los Angeles Water Board and six represented the City of Los Angeles.

hhhh. Meeting: April 29, 2021

The Los Angeles Water Board held a videoconference with the East San Gabriel Valley Group (ESGV Group) to discuss the implications of the 2020 State Board Order, options for participating in the Watershed Management Program, and Trash Discharge Prohibitions requirements and reporting. Five individuals attended out of which two represented the Los Angeles Water Board, one was a consultant Colbert Environmental Group representing the ESGV Group, and two represented the City of Claremont.

iiii. Meeting: May 6, 2021

The Los Angeles Water Board held a videoconference with Los Angeles County/LACFCD and various consultants represented different WMP Groups to discuss the updated RAA approach to address concerns resulting from the State Board Order WQ 2020-0038 and the WMP project implementation schedule. Fifteen individuals attended out of which four represented the Los Angeles Water Board, three represented Los Angeles County/LACFCD, and eight consultants represented various Permittees.

B. Notification to Permittees and Interested Parties

The Los Angeles Water Board notified the Dischargers and interested agencies and persons of its intent to prescribe WDRs for the discharges and provided an opportunity to submit written comments, evidence, and recommendations on the draft permit, including the monitoring and reporting program and fact sheet. Notification was provided through the following: Email to the Los Angeles Water Board's MS4 Lyris lists and email to the Permittee and stakeholder mailing list on August 24, 2020.

The public had access to the agenda and any changes in dates and locations through the Los Angeles Water Board's website at https://www.waterboards.ca.gov/losangeles/board_info/agenda/

C. Written Comments

Parties and interested persons were invited to submit written comments and evidence concerning the tentative WDR as provided through the notification process. Comments and evidence were due by mail or email to the Executive Officer at the Los Angeles Water Board at:

Los Angeles Regional Water Quality Control Board
320 W. 4th Street, Suite 200
Los Angeles, CA 90013-2343

MS4stormwaterRB4@waterboards.ca.gov

To be fully responded to by staff and considered by the Los Angeles Water Board, the written comments and evidence were due by 5:00 p.m. on December 7, 2020.

D. Public Hearing

The Los Angeles Water Board held a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: July 8, 9, 16, and 23, 2021
Time: 9:00 a.m. each day
Location: Video and Teleconference Meeting Only

Parties and interested persons were invited to attend. At the public hearing, the Los Angeles Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

E. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the Los Angeles Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of the Order at the following address, except that if the thirtieth day following the adoption date of the Order 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:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

Or by email at waterqualitypetitions@waterboards.ca.gov

For instructions on how to file a petition for review, see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

F. Information and Copying

The Reports of Waste Discharge, other supporting documents, and comments received are on file and may be inspected and copied at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday, by appointment. Appointments may be made by following the instructions on the Los Angeles Water Board's website under "Contact Us," "Public Records Center" at:

https://www.waterboards.ca.gov/losangeles/resources/public_records_center.html

G. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should subscribe to the Los Angeles Water Board's "Region

4 SW Regional Phase I MS4 Permit" Email List at: https://www.waterboards.ca.gov/losangeles/resources/email_subscriptions/.

H. Additional Information

Requests for additional information or questions regarding the Order should be directed to the Unit Chief of the Municipal Storm Water Permitting Unit. The contact name, phone number, and email address are available on the Los Angeles Water Board website:

https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/