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ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

I. CO-PERMITTEE INFORMATION

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

Table F-1: Co-Permittee Information

Permittee (WDID)	Contact Information
City of Cloverdale (X)	Craig Scott, City Engineer 124 North Cloverdale Blvd., Cloverdale, CA 95425
City of Cotati (1B03048SSON)	Damian O’Bid, City Engineer 201 West Sierra Avenue, Cotati, CA 94931 707-665-3637
City of Healdsburg (1B03046SSON)	Brent Salmi, City Engineer, 401 Grove Street, Healdsburg, CA 95448, 707-431-3346
City of Rohnert Park (1B03049SSON)	John McArthur, Director of Public Works 130 Avram Avenue, Rohnert Park, CA 94928 707-588-3301
City of Santa Rosa (1B96074SSON)	Scott P. Bartley, Mayor 100 Santa Rosa Avenue, Santa Rosa, CA 95401 707-543-4530
City of Sebastopol (1B03045SSON)	Larry McLaughlin, City Manager/Attorney 7210 Bodega Avenue, Sebastopol, CA 95472 707-823-1153
City of Ukiah (1B03187SMEN)	Tim Ericksen, Director of Public Works 300 Seminary Avenue, Ukiah, CA 95482 707-463-6280
City of Windsor(1B03047SSON)	Toni Bertolero, Town Engineer 8400 Windsor Road, Bldg. 100, Windsor, CA 95492 707-838-5978
County of Sonoma (1B0215SSON)	DeWayne Starnes, Chief Building Official 2550 Ventura Avenue, Santa Rosa, CA 95403 707-565-2502
Sonoma County Water Agency (1B02149SSON)	James Jasperse, Chief Engineer 404 Aviation Blvd., Santa Rosa, CA 95403 707-521-1835

The ten municipalities in Table F-1 are the owners/operators of Municipal Separate Storm Sewer Systems (MS4s) within the North Coast Regional Water Board boundary. The contacts listed in the right hand column represent the municipality, as documented on the Form 200 application for this Order.

II. CO-PERMITTEE DESCRIPTION

A. Background Information

In 1990, the U.S. Environmental Protection Agency (U.S. EPA) promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) storm water program. The Phase I program for MS4s required operators of medium and large MS4s to implement a storm water management program to control polluted discharges from these MS4s.

Title 40 of the Code of Federal Regulations (CFR) section 122.26(b)(4) defines a large MS4 as those municipalities with a population of 250,000 or more. There are no large MS4s within the North Coast Region.

Title 40 CFR 122.26(b)(7) defines a medium MS4 as (i) an incorporated place with a population of 100,000 or more but less than 250,000, or (ii) counties with unincorporated urbanized areas with a population greater than 100,000, but less than 250,000, or (iii) a municipality that is designated by the Director as part of the medium MS4 due to interrelationship between the discharges of the designated storm water and the discharges from a MS4 meeting the definition of medium MS4, based on numerous factors including interconnections between MS4s, the quantity and nature of pollutants discharged, or the nature of the receiving waters. Title 40 CFR 122.26(a)(iv) requires those meeting the definition of medium MS4 to obtain an NPDES permit for discharges of storm water to waters of the United States. Further, 40 CFR 122.26(a)(v) provides that an NPDES permit is required when the Director determines storm water discharges “contribute to a violation of water quality standards or is a significant contributor of pollutants to waters of the United States.” Such sources are then designated into the program. In the North Coast Region the City of Santa Rosa, the County of Sonoma, and the Sonoma County Water Agency (SCWA) are designated collectively as a medium MS4 and are regulated as Co-Permittees under a single NPDES Order.

Prior to issuance of this Order, Regional Water Board Order No. R1-2009-0050 (Order No. R1-2009-0050) served as the NPDES MS4 permit for storm water and non-storm water discharges within the jurisdictional boundaries of the City of Santa Rosa, the County of Sonoma and the SCWA. Order No. R1-2009-0050 was adopted by the Regional Water Board on October 1, 2009, and became effective on January 1, 2010.

Title 40 CFR section 122.26(b)(14) defines a small MS4 as those not defined as medium or large MS4s. On December 8, 1999, U.S. EPA promulgated Phase II storm water regulations under authority of the Clean Water Act section 402 (p)(6) to address discharges from these small MS4s. An NPDES permit is required if the small MS4 is located in an urbanized area as determined by the latest Decennial Census by the Bureau of the Census or, designated by the NPDES permitting authority. The State Water Resources Control Board has issued a general NPDES permit to these small MS4 operators under the Phase II storm water program.

Within the Russian River Watershed, the City of Cotati, the City of Rohnert Park, the City of Healdsburg, the City of Sebastopol, the City of Ukiah, the Town of Windsor and portions of unincorporated County of Mendocino were previously designated as Small Phase II MS4 in 2003. State Water Board Order No. 2003-0005-DWQ (2003 Order) served as the NPDES MS4 permit for storm water and non-storm water discharges within the jurisdictional boundaries of each municipality. The 2003 Order was adopted on April 30, 2003. The Order required each Permittee to develop and implement a storm water management plan (SWMP) in which Best Management Practices (BMPs) are selected to reduce or eliminate pollutants in storm water to the maximum extent practicable.

On February 5, 2013, the State Water Board adopted Order No. 2013-0001-DWQ (2013 Order), replacing the 2003 Order. Within the Russian River Watershed, the City of Cotati, the City of Rohnert Park, the City of Healdsburg, the City of Sebastopol, the City of Ukiah, the Town of Windsor, and portions of the County of Mendocino were designated as renewal Phase II MS4 Permittees. The City of Cloverdale, additional portions of unincorporated County of Sonoma and Sonoma State University were designated as new Phase II MS4 Permittees. The 2013 Order went into effect on July 1, 2013. Phase II MS4 Permittees were required to submit a Notice of Intent (NOI) to the State Water Board by July 1, 2013, for coverage under the 2013 Order.

In accordance with 40 CFR section 122.34(b)(3), a regulated Small MS4 in the same urbanized area as a medium or large MS4 may join with the medium or large MS4 to be added as a limited Co-Permittee. Additionally, Title 40 CFR section 122.26(b)(7)(iii) states that the Regional Water Board Executive Officer can designate municipalities as a medium MS4 based on factors other than population. Other factor include physical interconnection between MS4s [122.26(b)(7)(iii)(A)], the location of discharges [122.26(b)(7)(iii)(B)], the quantity and nature of pollutants discharged [122.26(b)(7)(iii)(C)], the nature of receiving water [122.26(b)(7)(iii)(D)], or other relevant factors [122.26(b)(7)(iii)(E)].

As such, the Phase II MS4 Permittees within the Russian River Watershed were provided the options of either filing an NOI with the State Water Board to enroll in the 2013 Phase II Order for Regulated Small MS4s or provide a letter to the Executive Officer of the Regional Water Board requesting participation in the Phase I Order with the existing Co-Permittees. Table 5: Small Phase II MS4 Compliance Action summarizes the option selected by each designated Phase II MS4.

Table F-2: Small Phase II MS4 Compliance Action

Municipality	Action	Date of Action
City of Cloverdale	Requested to participate in Phase I Program	June 24, 2013
City of Cotati	Requested to participate in Phase I Program	June 26, 2013
City of Healdsburg	Requested to participate in Phase I Program	July 9, 2013
City of Rohnert Park	Requested to participate in Phase I Program	July 1, 2013
City of Sebastopol	Requested to participate in Phase I Program	June 24, 2013

Municipality	Action	Date of Action
Town of Windsor	Requested to participate in Phase I Program	June 27, 2013
City of Ukiah	Requested to participate in Phase I Program	July 1, 2013
County of Mendocino	Submitted NOI for Coverage Under the 2013 Order	July 1, 2013
County of Sonoma	Requested to participate in Phase I Program	January 2, 2014
Sonoma State University	Submitted NOI for Coverage Under the 2013 Order	June 28, 2013

Effective July 1, 2013, those Phase II MS4s electing to participate in the Phase I MS4 program were automatically terminated from coverage under the 2013 Order and were required to begin implementing the terms and conditions of Order No. R1-2009-0050. Each Phase II MS4 electing to participate in the Phase I MS4 program was required to develop and submit an implementation plan for Regional Water Board approval. The implementation plan outlined all of the requirements in Order No. R1-2009-0050 with a proposed time frame for compliance. Additionally, each Phase II MS4 was required to continue implementing the individual SWMP approved under the 2003 Order. The SWMP and implementation plan served as NPDES Permit coverage for those Phase II MS4s electing to participate in the Phase I MS4 program.

Discharges from the Co-Permittees meet the definition of a medium MS4, contribute to violations of water quality standards, and are a contributor of pollutants to receiving water. With the adoption of this Order, the City of Cotati, the City of Cloverdale, the City of Healdsburg, the City of Rohnert Park, the City of Sebastopol, the Town of Windsor, and the City of Ukiah are now designated as Phase I MS4 Permittees. These Phase I Permittees, along with the City of Santa Rosa, the County of Sonoma, and the Sonoma County Water Agency, are collectively referred to as Co-Permittees.

B. Pollutants of Concern

In general, the pollutants that are found in municipal storm water runoff are a threat to human health and/or the environment. The National Urban Runoff Program (NURP) study reported that heavy metals, organics, bacteria, nutrients, oxygen demanding substances (e.g. decaying vegetation), and total suspended solids are found at relatively high levels in storm water runoff. In addition, the State Water Board Urban Runoff Technical Advisory Committee finds that storm water runoff pollutants include sediment, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogenic bacteria, viruses, and pesticides.

In 1992, 1994, and 1996, National Water Quality Inventory Reports to Congress prepared by U.S. EPA showed a trend of impairment in the nation's waters from contaminated runoff. The 1998 National Water Quality Inventory Report states that ocean shoreline impairment due to storm water runoff increased from 55 percent in 1996 to 63 percent in 1998. The report notes that storm water runoff discharges are the leading source of pollution and the

main factor in the degradation of surface water quality in California’s coastal waters, rivers, and streams.

The quality and quantity of the MS4 discharges vary considerably because of the effects of hydrology, geology, land use, seasonality, and sequence and duration of precipitation events. Storm water runoff discharges typically contain pollutants that lower the quality of receiving waters and impact beneficial uses of receiving waters. Nationwide and local studies have shown exceedances of water quality standards and instances of aquatic toxicity in receiving waters associated with storm water discharges.

1. Transport

Watershed development and urbanization result in increased pollutants loading, runoff volume and discharge velocity to receiving waters. In many cases, development results in naturally vegetated, pervious areas being converted to impervious surfaces such as paved highways, streets, rooftops, and parking lots. Pollutants will then accumulate on impervious surfaces until they are mobilized during rain events. Storm water runoff that flows over impervious surfaces carries untreated pollutants through the MS4, which ultimately discharge to receiving waters of the North Coast Region.

2. Heavy Metals

Storm water runoff can contain heavy metals such as arsenic, cadmium, chromium, copper, lead, mercury, and zinc at concentrations that may exceed water quality standards. Lead, copper, and zinc tend to be the most common metals in storm water runoff. Sources of heavy metals in storm water runoff often are associated with vehicle use including, exhaust, brake linings and pads, and tire and engine wear. Zinc can be found in galvanized metal rooftops, gutters, and downspouts. Copper can come from architectural uses and treated wood. Lead can be commonly found in fuels and paints. Additionally, sources of heavy metals in storm water runoff can be from atmospheric deposition and sediment.

The City of Santa Rosa’s outfall chemical monitoring program included analysis of thirteen inorganic pollutants including antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc. Samples were collected during both wet and dry weather sampling events. Sample results reported copper, lead and zinc above water quality standards in multiple wet weather samples. Mercury was the only pollutant reported above water quality standards in dry weather.

3. Pathogens

Storm water runoff is a common contributor of pathogens and bacteria to watersheds. Wastes from warm-blooded animals are a source for many types of pathogenic (disease-causing) bacteria found in surface waters, including the coliform group. Total coliform, fecal coliform, E. coil, Enterococcus, and Bacteroides bacteria are used to indicate the possible of sewage and pathogenic bacteria that also live in human and animal digestive systems. Sources of these pathogenic bacteria include domestic pet waste, wildlife,

livestock, and human contributions from leaking sewage collection systems and homeless encampments.

The most common fecal bacteria indicators used to assess the human health risk from recreation beneficial uses are total coliform, fecal coliform, *E. coli*, and *Enterococcus* bacteria. *E. coli* and *Bacteroides* bacteria are appropriate indicators of fecal contamination in fresh water and human health risk from water contact recreation.

Elevated pathogen levels impair the water contact recreation (REC-1) beneficial use at beaches, rivers, creeks, estuaries, lagoons, and marinas. Swimming in waters with elevated pathogens has been associated with adverse health effects.

The Co-Permittee's outfall chemical water monitoring program included analysis of fecal coliform, *E. coli*, and *Enterococcus* bacteria in both wet weather and dry weather flows. Levels reported in outfall samples confirm the presence of bacteria at elevated concentrations. Additionally the Sonoma County Water Agency's receiving water chemical monitoring program includes the same parameters. Levels reported in receiving water samples also confirmed the presence of bacteria at elevated levels in both the upstream and downstream sample locations.

4. Nutrients

Storm water is a documented source of nutrients to receiving waters. The Total Maximum Daily Load (TMDL) and Waste Reduction Strategy for the Laguna de Santa Rosa, Sonoma County developed by Regional Water Board staff and approved by U.S. EPA in 1995, identifies storm water runoff as a significant source of nutrient loading in the Laguna watershed.

Sources of nutrients include fertilizers which are transported in storm water runoff from agricultural lands, orchards, nurseries, parks, golf courses, and residential and commercial landscaping; detergents which enter storm water through wash water waste from car washes and mop water being improperly disposed; sewage including pet waste, septic systems and livestock; and natural sources such as the decomposition of plants, rocks and soil, and air deposition.

Eutrophication is the process by which a body of water acquires a high concentration of nutrients which promote excessive growth of algae. The decomposition of algae results in oxygen depletion and a drop in dissolved oxygen. Excess nutrients in the form of nitrogen and phosphorus can stimulate the growth of algae, thus accelerating the eutrophication process. Low dissolved oxygen can result in an impact to beneficial uses, primarily the impairment of warm freshwater habitat, cold freshwater habitat, and wildlife habitat.

Co-Permittee outfall monitoring included the analysis of parameters to characterize nutrient concentrations in storm water runoff. Additional data collection is necessary to continue to evaluate the concentration of nutrients entering surface water from storm water runoff. Additionally, sampling efforts will include calculating estimated nutrient loads contributing to surface water through storm water runoff.

5. Pesticides

Pesticides are chemicals used to prevent, destroy, repel or mitigate pests such as insects, weeds, and microorganisms. Pesticides can cause adverse health effects on fish and wildlife causing aquatic toxicity and can be impacted through both direct and indirect exposure. Pesticides enter storm water runoff from overuse and application on landscaping and agricultural lands.

6. Pollutants Associated with Vehicles

Vehicle use and maintenance activities contribute a variety of pollutants into the environment including: coolants, antifreeze, oil, grease, dioxins, polycyclic aromatic hydrocarbons and petroleum hydrocarbons like gasoline and diesel. Sources of these pollutants in storm water include spills, leaks, exhaust, wash water, and improper chemical disposal from maintenance activities.

7. Trash

Trash discarded on land frequently makes its way into surface water as storm water runoff transports trash through MS4 systems. Common types of trash generated by human activity found in surface water often include cigarette butts, paper, fast food containers, plastic grocery bags, cans, bottles, used diapers, plastic pellets, old tires, appliances and more. Trash is a significant pollutant that can impact beneficial uses that support aquatic life, terrestrial wildlife, and public health.

8. Sediment

Storm water can be a significant source of sediment in waterways through two primary mechanisms: transport of large volumes of sediment from impervious surfaces and developed landscapes into stream channels; or through destabilization of the stream channel and stream bed from excess hydraulic energy leading to erosion within the stream channel.

Some types of sediment (sands and gravels) are natural components of stream systems and often provide benefits for aquatic habitat. However, excessive fine sediments may impact freshwater habitat leading to damage to fish gills, reduced feeding efficiency and ability to avoid predation due to impaired visibility, impact to plant growth from reduced light penetration, filling of fish spawning areas, and reduced survival rates of fish eggs.

In addition to the direct impact excessive sediment has on the beneficial uses of receiving water, sediment itself can be contaminated with other forms of pollutants including pesticides, polychlorinated biphenyls, nutrients, petroleum hydrocarbons, PAHs, and inorganic elements.

9. Temperature

Storm water flows may alter the natural temperature regime of waters through direct differences in runoff temperature versus natural flows. Direct flows can be warmer than the receiving water, which can lead to temperature stress in many cold water aquatic species. For example, increased runoff from impervious surfaces may increase the temperature of receiving waters. The impact of warmer flows can also be less direct. It can cause the stream to have lower oxygen because warmer water has a lower oxygen saturation potential, and therefore lower dissolved oxygen.

C. Best Management Practices

The State Water Board finds in Order No. WQ 98-01 that BMPs are effective in reducing pollutants in storm water runoff, stating that “implementation of BMPs [is] generally the most appropriate form of effluent limitations when designed to satisfy technology requirements, including reduction of pollutants to the maximum extent practicable.” A State Board Technical Advisory Committee Report further supports this finding by recommending “that nonpoint source pollution control can be accomplished most effectively by giving priority to [BMPs] in the following order:

1. Pollution Prevention-implementation of practices that use or promote pollution free alternatives;
2. Source Control-implementation of control measures that focus on preventing or minimizing storm water runoff from contacting pollution sources; and
3. Treatment Control-implementation of practices that require treatment of polluted runoff either onsite or offsite.

Pollution prevention, the reduction or elimination of pollutant generation at its source is an essential aspect of effective BMP implementation. Fewer pollutants are available to be washed from urban areas when the generation of pollutants by urban activities is limited. Thus, pollutants loads in storm water discharges are reduced from these areas. Pollution prevention BMPs are generally more cost effective than removal of pollutants by treatment facilities or cleanup of contaminated media.

This Order requires the use of BMPs shown to be effective for activities covered under this Order. The BMPs identified in this Order are technically feasible, practicable, and cost-effective. Consistent with California Water Code section 13360, where an identified BMP may be impracticable on a particular site or for a specific activity, this Order includes a provision to select and implement alternative BMPs.

This Order is consistent with 40 CFR 122.26 (d)(2)(iv)(A) which states that the storm water management program shall include “structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the [MS4] that are to be implemented during the life of the permit.”

D. Municipal Storm Water Compliance Inspections

On April 4, 2014, Regional Water Board staff conducted an inspection of the City of Santa Rosa’s Development Construction Program. No violations were identified as a result of the inspection. However, inspection staff identified areas of the program needing improvement

or further development. The area most notable for needing improvement was record keeping of construction site inspections. While it is evident the City of Santa Rosa has developed and implemented procedures consistent with the Development Construction Program requirements in Order No. R1-2009-0050, City staff could not provide evidence of inspections based on the frequency required.

Regional Water Board staff also conducted an inspection of the County of Sonoma's Development Construction Program, with a specific focus on private development. The inspection took place on May 13, 2014. Similar to the City of Santa Rosa, no violations were identified, but the record keeping of inspection was inconsistent and in need of improvement in order to demonstrate compliance.

As a result of these two inspections, this Order incorporates more details on requirements to record and document inspections required at construction projects.

E. Order is Not An Unfunded Mandate

This Order does not constitute an unfunded local government mandate subject to subvention under Article XIII B, section (6) of the California Constitution for several reasons, including, but not limited to, the following.

First, this Order implements federally mandated requirements under federal Clean Water Act section 402, subdivision (p)(3)(B). (33 U.S.C. § 1342(p)(3)(B).) This includes federal requirements to effectively prohibit non-storm water discharges, to reduce the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Federal cases have held these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (*Natural Resources Defense Council, Inc. v. U.S. E.P.A.* (9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.) The authority exercised under this Order is not reserved state authority under the Clean Water Act savings clause (*cf. Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. section 1370, which allows a state to develop requirements which are not "less stringent" than federal requirements]), but instead, is part of a federal mandate to develop pollutant reduction requirements for municipal separate storm sewer systems. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, *City of Rancho Cucamonga v. Regional Water Quality Control Bd.- Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389; *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866, 882-883.)

Second, the Co-Permittees' obligations under this Order are similar to, and in many respects less stringent than, the obligations of non-governmental dischargers who are issued NPDES permits for storm water discharges. With a few inapplicable exceptions, the Clean Water Act regulates the discharge of pollutants from point sources (33 U.S.C. section 1342) and the Porter-Cologne regulates the discharge of waste (California Water Code section 13263), both without regard to the source of the pollutant or waste. As a result, the "costs incurred by local agencies" to protect water quality reflect an overarching regulatory scheme that places similar requirements on governmental and nongovernmental dischargers. (See *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 57-58.)

The Clean Water Act and the Porter-Cologne Water Quality Control Act largely regulate storm water with an even hand, but to the extent there is any relaxation of this even-handed regulation, it is in favor of the local agencies. Except for MS4s, the Clean Water Act requires point source dischargers, including discharges of storm water associated with industrial or construction activity, to comply strictly with water quality standards. (33 U.S.C. section 1311(b)(1)(C), *Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1164-1165.) As discussed in prior State Water Board decisions, this Order does not require strict compliance with water quality standards. (SWRCB Order No. WQ 2001-15, p. 7.) The Order, therefore, regulates the discharge of waste in municipal storm water more leniently than the discharge of waste from non-governmental sources.

Third, the Co-Permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order. The Factsheet demonstrates that numerous activities contribute to the pollutant loading in the MS4. Local agencies can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., *Apartment Ass'n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842.) The ability of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

Fourth, the Co-Permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in federal Clean Water Act section 301, subdivision (a) (33 U.S.C. section 1311(a)) and in lieu of numeric restrictions on their discharges. To the extent the local agencies have voluntarily availed themselves of the permit, the program is not a state mandate. (*Accord County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.) Likewise, the Co-Permittees have voluntarily sought a program-based municipal storm water permit in lieu of a numeric limits approach. (See *City of Abilene v. U.S. E.P.A.* (5th Cir. 2003) 325 F.3d 657, 662-663.) The local agencies' voluntary decision to file a report of waste discharge proposing a program-based permit is a voluntary decision not subject to subvention. (See *Environmental Defense Center v. U.S.EPA* (9th Cir. 2003) 344 F.3d 832, 845-848.)

Fifth, the local agencies' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under state law predates the enactment of Article XIII B, section (6) of the California Constitution.

III. APPLICABLE STATUTES, REGULATIONS, PLANS, AND POLICIES

The provisions contained in this Order are based on the requirements and authorities described below.

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

This Order is issued pursuant to section 402 of the federal Clean Water Act and implementing regulations adopted by the US EPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It serves as an NPDES permit for

point source discharges from these facilities to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260).

B. Federal and California Endangered Species Acts

This Order does not authorize any act that results in the taking of a threatened or endangered species or an act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Wildlife Code section 2050 to 21155.5) or the Federal Endangered Species Act (16 U.S.C.A., section 1531 to 1544). This Order requires compliance with requirements to protect the beneficial uses of waters of the United States. Co-Permittees are responsible for meeting all requirements of the applicable Endangered Species Act.

C. California Environmental Quality Act (CEQA)

This action to adopt an NPDES Permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code, section 21100, et seq.) pursuant to California Water Code section 13389. The renewal of the NPDES permit is also exempt from CEQA pursuant to Title 14, California Code of Regulations, section 15301, as an existing facility.

D. Water Quality Control Plans

The Clean Water Act requires the Regional Water Board to establish water quality standards for each water body in its region. Water quality standards include beneficial uses, water quality objectives, and criteria that are established at levels sufficient to protect those beneficial uses, and an Antidegradation policy to prevent degrading waters. For the North Coast Region these standards are established in the Water Quality Control Plan for the North Coast Region (Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the North Coast Region. The Regional Water Board has amended the Basin Plan on multiple occasions since the initial adoption. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Russian River are provided in Attachment B of this Order.

E. Ocean Plan

In 1972, the State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (hereinafter Ocean Plan). The State Water Board adopted the most recent amended Ocean Plan on October 12, 2012, with a August 19, 2013 effective date. The Ocean Plan is applicable, in its entirety, to ocean waters of the State. In order to protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation.

F. The Coastal Zone Act Reauthorization Amendments of 1990

The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), Section 6217(g), requires coastal states with approved coastal zone management programs to address non-point source pollution impacting or threatening coastal water quality. CZARA addresses five sources of non-point pollution: agriculture, silviculture, urban, marinas, and hydromodification. In September 1995, the State Water Board and the California Coastal Commission submitted the state's response to the CZARA requirements. In lieu of a separate state program for the coastal zone, the state decided to apply the CZARA requirements on a statewide basis. This Order does address some CZARA requirements (urban and hydromodification) within the permit area. However, this Order does not address the CZARA management measures required for the coastal areas that are not included within the permit boundary. Compliance with requirements specified in this Order does not relieve the Co-Permittees from developing a non-point source plan for other programs identified under CZARA.

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

U.S. EPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995, and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

H. State Implementation Policy

On March 2, 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

I. Trash Provisions of the State Water Board's Water Quality Control Plan

On April 7, 2015, the State Water Board adopted the 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 (Trash Amendment). The Trash Amendment includes six elements: (1) a water quality objective, (2) applicability, (3) prohibition of discharge, (4) implementation of provisions, (5) time schedule, and (6) monitoring and reporting requirements. The discharges from MS4s covered in this Order are subject to the requirements set forth in the

Trash Amendment. Upon the Trash Amendments taking effect, the Co-Permittees will receive notification of the timing and schedule to incorporate requirements into this Order.

J. Alaska Rule

On March 30, 2000, U.S. EPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for Clean Water Act purposes. (40 C.F.R. § 131.21; 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to U.S. EPA after May 30, 2000, must be approved by U.S. EPA before being used for Clean Water Act purposes. The final rule also provides that standards already in effect and submitted to U.S. EPA by May 30, 2000, may be used for Clean Water Act purposes, whether or not approved by U.S. EPA.

K. Antidegradation Policy

State Water Board Resolution No. 68-16 contains the State Antidegradation Policy, titled “Statement of Policy with Respect to Maintaining High Quality Waters in California” (Resolution 68-16); this policy applies to all waters of the State, including ground waters of the State, whose quality meets or exceeds (is better than) water quality objectives. Resolution No. 68-16 incorporates the federal Antidegradation Policy (40 CFR section 131.12) where the federal policy applies, (State Water Board Order WQO 86-17). Both state and federal antidegradation policies acknowledge that an activity that results in a minor water quality lowering, even if incrementally small, can result in violation of Antidegradation Policies through cumulative effects, for example, when the waste is a cumulative, persistent, or bioaccumulative pollutant.

Federal Antidegradation Policy (40 CFR section 131.12) states that the State shall develop and adopt a statewide antidegradation policy and identify the methods for implementing such policy pursuant to this subpart. The antidegradation policy and implementation methods shall, at a minimum, be consistent with the following:

1. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
2. Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State’s continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved 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.
3. Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

State Water Board Resolution No. 68-16 establishes essentially a 2-step process for compliance with the state anti-degradation policy.

1. Step 1: if a discharge will degrade high quality water, the discharge may be allowed if any change in water quality:
 - a. Will be consistent with maximum benefit to the people of the State;
 - b. Will not unreasonably affect present and anticipated beneficial use of such water; and
 - c. Will not result in water quality less than that prescribed in state policies (e.g., water quality objectives in Water Quality Control Plans).
2. Step 2: any activities that result in discharges to high quality waters are required to:
 - a. Meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to avoid a pollution or nuisance.
 - b. Maintain the highest water quality consistent with the maximum benefit to the people of the State.
 - c. If such treatment or control results in a discharge that maintains the existing water quality, then a lowering of water quality would not be consistent with State Antidegradation Policy.
 - d. Likewise, the discharge could not be allowed under State Antidegradation Policy if:
 - i. The discharge, even after treatment, would unreasonably affect beneficial uses; or
 - ii. The discharge, would not comply with applicable provisions of Water Quality Control Plans.

L. Anti-Backsliding Requirements

Sections 402(o)(2) and 303(d)(4) of the Clean Water Act and federal regulation at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. This Order is consistent with anti-backsliding requirements.

M. Impaired Water Bodies and Total Maximum Daily Loads

Section 303(d) of the Clean Water Act and 40 CFR section 130.7 require states to identify water bodies that do not meet water quality standards and are not supporting their beneficial uses. These waters are placed on the Section 303(d) List of Water Quality Limited Segments, also known as the 303(d) List of Impaired Water Bodies. The 303(d) List identifies the pollutant or stressor causing impairment and establishes a schedule for developing a control plan to address the impairment. Placement on the 303(d) List generally triggers development of a pollution control plan called a Total Maximum Daily Load (TMDL) for each listed water body and associated pollutant/stressor.

A TMDL is a process that leads to a “pollutant budget” designed to restore the health of a polluted or impaired water body. The TMDL process provides a quantitative assessment of water quality problems, contributing sources of pollution and the pollutant load reductions

or control actions needed to restore and protect the beneficial uses of an individual water body impaired from loading of a particular pollutant. More specifically, a TMDL is defined as the sum of the individual waste load allocations for point sources, load allocations for non-point sources, and natural background such that the capacity of the water body to assimilate pollutant loading (the loading capacity) is not exceeded. In other words, a TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. In addition, the TMDL contains the reductions needed to meet water quality standards and allocates those reductions among the pollutants sources in the watershed.

MS4 discharges regulated in this Order discharge to 303(d)-listed receiving water bodies. A list of impaired water bodies within the Russian River Watershed are provided in Table F-2. The list includes an identification of Co-Permittees who discharge to a given impaired segment of the Russian River.

Table F-3: Russian River Watershed Impairments

Hydrologic Unit/Area/Subunit	Impairments	Co-Permittees
Russian River HU: Lower Russian River HA, Guerneville HSA	Dissolved Oxygen Indicator Bacteria Sedimentation/Siltation Temperature	County of Sonoma-Occidental, Forestville, Guerneville, Monte Rio, portions of unincorporated Graton, portions of unincorporated Healdsburg City of Sebastopol City of Healdsburg
Russian River HU: Lower Russian River HA, Austin Creek HAS	Temperature	None
Russian River HU: Middle Russian River HA, Laguna de Santa Rosa HSA	Dissolved Oxygen Mercury Indicator Bacteria Nitrogen Phosphorus Sediment/Siltation Temperature	County of Sonoma City of Cotati City of Santa Rosa City of Rohnert Park City of Sebastopol Town of Windsor
Russian River HU: Middle Russian River HA, Santa Rosa CreekHSA	Indicator Bacteria Sediment/Siltation Temperature	County of Sonoma City of Santa Rosa
Russian River HU: Middle Russian River HA, Mark West Creek HSA	Sedimentation/Siltation Temperature	County of Sonoma Town of Windsor
Russian River HU: Middle Russian River HA, Warm Springs HSA	Sedimentation/Siltation Temperature	None
Russian River HU: Middle Russian River HA, Geyserville HSA	Indicator Bacteria Sedimentation/Siltation Temperature	County of Sonoma-portions of unincorporated Healdsburg City of Healdsburg City of Cloverdale

Hydrologic Unit/Area/Subunit	Impairments	Co-Permittees
Russian River HU: Middle Russian River HA, Big Sulphur Creek HSA	Specific Conductivity Sedimentation/Siltation Temperature	None
Russian River HU: Upper Russian River HA, Ukiah HAS	Sedimentation/Siltation Temperature	City of Ukiah

1. Laguna de Santa Rosa TMDL

On March 1, 1995, the Regional Water Board approved TMDLs for the Laguna de Santa Rosa (Laguna) watershed, which consists of the Laguna de Santa Rosa, Mark West Creek, and Santa Rosa Creek HSAs. These TMDLs assigned numeric, seasonal targeted reductions and net load goals for total nitrogen and total ammonia in urban storm water in four areas of the Laguna watershed. On May 4, 1995, the U.S. EPA approved the TMDLs and the Waste Reduction Strategy for the Laguna de Santa Rosa (Strategy). The Strategy anticipated the TMDL implementation would reduce total nitrogen, ammonia, total phosphate, and organic matter discharges to the Laguna. This would lead to a reduction of algal productivity and reduce the daily dissolved oxygen and pH excursions in the Laguna. The Strategy anticipated attaining the targeted reductions and net load goals by July 2000.

The Strategy found that storm water and non-storm water runoff from MS4 systems contributed to the impairment of the Laguna. The City of Santa Rosa, the City of Rohnert Park, the City of Cotati, the City of Sebastopol, and the Town of Windsor were identified as urban areas contributing to the impairment of the Laguna from the MS4 discharges. Additionally, the Strategy identified the County of Sonoma urban areas within the Laguna also contributing to the impairments and recommended that the County of Sonoma develop a storm water management program as a Co-Permittee with the City of Santa Rosa.

The Strategy was based on a watershed approach and proposed targeting specific pollutant sources found within different areas of the watershed. The Laguna watershed was divided into four attainment areas, the lowermost point in the stream for each area being the point of attainment. The points of attainment and net load goals for total nitrogen in urban runoff are listed in Table F-3 and net load goals for total ammonia in urban runoff in Table F-4.

Table F-4: Laguna TMDL Net Load Goals for Total Nitrogen (pounds/season) in Urban Runoff

Attainment Point	Winter Net	Spring Net	Summer Net	Fall Net
Trenton-Healdsburg Road	182,353	11,789	0	7,718
Guerneville Road	129,960	5,321	0	2,543
Occidental Road	42,025	1,161	0	514
Stony Point Road	17,054	1,161	0	514

Table F-5: Laguna TMDL Net Load Goals for Total Ammonia (pounds/season) in Urban Runoff

Attainment Point	Winter Net	Spring Net	Summer Net	Fall Net
Trenton-Healdsburg Road	16,174	942	0	539
Guerneville Road	11,593	376	0	140
Occidental Road	3,589	50	0	10
Stony Point Road	1,318	50	0	10

The net loads for total nitrogen and total ammonia were developed in the TMDLs as goals and did not establish firm compliance dates. These are not enforceable net loads and are included here for reference only.

This Order requires implementation of BMPs to address, control, and minimize the discharge of nutrients in storm water and non-storm water runoff to receiving water. Required BMPs that are intended to address nutrients include public education and outreach on proper handling and disposal of fertilizers; lawn watering conservation and minimizing over-irrigation; residential car wash education; inspections of local nurseries and landscape material retailers; low impact development and storm water treatment post-construction BMPs; control of sediment (to which nutrients may be attached); and a multitude of BMPs at municipal facilities involving proper handling, use, and disposal of fertilizers and soap products.

Regional Water Board staff is currently in the process of developing updated TMDLs for the Laguna watershed for nitrogen, phosphorus, sediment, temperature, and dissolved oxygen. Co-Permittees with an MS4 discharge located within the Laguna watershed will be subject to waste load allocations and implementation plans to meet those allocations. Waste load allocations in the updated TMDLs will replace the net load goals of the current Strategy. It is anticipated that the requirements related to MS4 discharges for each Co-Permittee's implementation plan, which may include options for compliance through the use of offsets, pollutant trading, or other market-based regulatory programs, will be incorporated into future MS4 permits and will be used as the primary regulatory tool for TMDL compliance.

2. Russian River Pathogen TMDL

Regional Water Board staff is currently in the process of developing a TMDL to address the impairment of indicator bacteria in the Russian River. Storm water runoff is a source of bacteria to receiving water. Co-Permittees with an MS4 discharge located within the Russian River watershed are subject to waste load allocation and implementation plan to meet those allocations. It is anticipated that the requirements related to MS4 discharges for each Co-Permittee's implementation plan will be incorporated into future MS4 permits, or possibly in a renewal of this Order.

N. North Coast Regional Water Board's Temperature Policy

The Regional Water Board has approved a *Policy for the Implementation of the Water Quality Objectives for Temperature* (Temperature Policy) in the North Coast Region. The

Temperature Policy describes the approach to implementing the water quality objectives for temperature in one cohesive policy. It identifies activities and factors that have potential to cause temperature alterations, primarily those associated with riparian shade, instream flow, and increased sediment loads. The Temperature Policy identifies the regulatory mechanisms staff will employ to ensure achievement of the water quality objectives for temperature, such as permits. The Temperature Policy also describes the significance of stream shade as a factor determining stream temperatures and identifies shade as a controllable water quality factor. Finally, the Temperature Policy directs staff to address temperature concerns through existing authorities and processes. This Order implements

O. Legal Authority

The legal authority citations below generally apply to requirements in Order No. R1-2015-0030 (Order), and provide the North Coast Regional Water Board (Regional Water Board) with the underlying authority to require each of the requirements within the Order.

P. Federal Clean Water Act

Section 402 of the Clean Water Act prohibits the discharge of any pollutant to water of the United States from a point source, unless that discharge is authorized by an NPDES permit. The Clean Water Act defines point source as “discernible, confined and discrete conveyances, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft from which pollutants are or may be discharged, 33 U.S. Code section 1362. Though storm water runoff comes from a diffuse source, it is discharged to receiving waters through an MS4, it is considered a point source under the Clean Water Act.

In 1987, the United States Congress amended the Clean Water Act section 402 to specifically require storm water discharges, including those from municipalities with populations over 100,000 or greater, conveyed by a separate storm sewer system, to be addressed as point sources of pollution under the NPDES permit program. 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. MS4 permits (1) “shall include a requirement to effectively prohibit non-storm water discharges into storm sewers” and (2) “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, “the Clean Water Act 402(p)(3)(B)(ii-iii).

On November 16, 1990, pursuant to the Clean Water Act section 402(p), the USEPA promulgated regulations at section 122.26 of title 40 of the Code of Federal Regulations which established requirements for storm water discharges under the NPDES program. The regulations establish minimum requirements for MS4 permits addressing both storm water and non-storm water discharges from MS4s.

The Clean Water Act authorizes U.S. EPA to permit a state to serve as the NPDES permitting authority in lieu of U.S. EPA. The State of California has in lieu authority for the NPDES program. The Porter-Cologne Water Quality Control Act authorizes the State Water Board, through Regional Water Boards, to regulate and control the discharge of pollutants into waters of the State. On September 22, 1989, the State Water Board entered into a Memorandum of Agreement (MOA) with U.S. EPA to administer the NPDES Program governing discharges to waters of the United States.

IV. RATIONALE FOR DISCHARGE PROHIBITIONS

A. Discharge Prohibition III.A. The discharges of storm water and non-storm water from the MS4 in a manner causing or contributing to a condition of pollution, contamination or nuisance is water of the State are prohibited. This prohibition is based on section 13050 of the Californian Water Code and has been retained from Order No. R1-2009-0050.

1. Section 13050(l) of the California Water Code defines “pollution” as (1) “alternative of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following: (A) The waters for beneficial uses. (B) Facilities which serve these beneficial uses. (2) Pollution may include contamination.”
2. Section 13050(k) defines “contamination” as “an impairment of the quality of the waters of the state be waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. Contamination includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.”
3. Section 13050(m) defines “nuisance” as “anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. (3) Occurs during, or as a result of, the treatment or disposal of wastes.”

B. Discharge Prohibition III.B. The discharges from the MS4 shall be in compliance with the applicable discharge prohibitions contained in the Basin Plan, unless the Action Plan for Storm Water Discharges is implemented. (Basin Plan, Chapter 4, Implementation Plan).

Section 13243 of the California Water Code authorizes the Regional Water Board, within the Basin Plan, to specify certain conditions or areas where the discharge of waste, or certain types of waters, will not be permitted. Such prohibitions for the North Coast Basin are prescribed within the Basin Plan. For the Russian River and its tributaries this includes a prohibition of all point sources during the period of May 15 through September 30 and during all other periods when the waste discharge flow is greater than one percent of the receiving water’s flow.

Permitted storm water and low threat non-storm water flows are not subject to the Basin Plan’s point source discharge waste discharge prohibition provided that the following conditions are met:

1. The discharge and the activities which affect the discharge are managed in conformance with the provisions of the applicable NPDES permit.
2. The discharge does not cause adverse effects on the beneficial uses of the receiving water.
3. The Permittee shall implement a general management program to eliminate or minimize non-storm water discharges into surface waters. The program shall be submitted to the Regional Water Board for approval and include implementation of BMPs, outreach and education, inspections, monitoring, reporting and enforcement provisions.

Thus, by implementing the Action Plan for Storm Water, a Co-Permittee is “exempt” from the discharge prohibition set forth in the Basin Plan. The intent of this Prohibition is that absent of implementing the Action Plan for Storm Water, the Co-Permittee will need to comply with the discharge prohibition.

- C. Discharge Prohibition III.C** prohibits non-storm water discharges from entering into the MS4 unless such discharges are either authorized by an NPDES permit or not prohibited in accordance with a non-storm water BMP plan. The Clean Water Act section 402(p)(3)(B)(ii) requires operators of an MS4 to prohibit non-storm water discharges into their MS4.

Chapter 40 of the Federal Code of Regulations, section 122.26(d)(2)(iv)(B)(1) requires the operator of a large or medium MS4 to implement and enforce in an ordinance a means to prevent illicit discharges to the MS4. The program is to include all types of illicit discharges except for a category of non-storm water flows that are often considered “low threat” or not a significant source of pollution. This section of 122.26 includes a list of non-storm water flows that need to be a prohibited discharge if they are deemed to be a source of pollution by the municipality. This list has been incorporated into the Order for each municipality to determine (1) if the discharge is a source of pollution and must therefore be a prohibited non-storm water discharge to the MS4 or (2) conclude the discharge is not a source of pollution and allow the discharge to occur in accordance with BMPs to conduct the discharge in a manner which is not a significant source of pollution and is consistent with water quality standards.

1. Low Threat Non-Storm Water Discharges

Implementation plans for low threat non-storm water discharges are addressed in the Basin Plan under two actions plans: The Action Plan for Low Threat Discharges and the Action Plan for Storm Water Discharges. These two plans were adopted by the Regional Water Board on July 23, 2009, in Resolution No. R1-2009-0004, adopted by the State Water Board on March 15, 2011, in Resolution No. 2011-0012, and approved by the State Office of Administrative Law on May 12, 2011. These actions were approved after the adoption of Order No. R1-2009-0050. This Order fully implements the two Action

Plans as they apply to low threat discharges from the Co-Permittees' MS4s. Details of these plans are provided below.

a. The Action Plan for Low Threat Discharges

Under The Action Plan for Low Threat Discharges, the Basin Plan defines a low threat discharge as one that is generally planned, short-term, and/or of minimized volume from a definable project that results in a point source discharge to surface waters and is managed in a manner that does not threaten the quality or beneficial uses of water without additional dilution. Absent of these discharges being properly managed, however, they can cause or threaten to cause minor impairment of existing or potential beneficial uses.

The Action Plan for Low Threat Discharges is in place to identify procedures for regulating low threat point source discharges that can be demonstrated to not have an adverse impact on beneficial uses or water quality and for which there are no reasonable discharge alternatives, and thus can be allowed under conditions which would otherwise be unallowable. Low threat discharges are allowable provided they meet the following conditions:

- i. The discharge shall not adversely affect the beneficial uses of the receiving water or cause a condition of nuisance.
- ii. The discharge shall comply with all applicable water quality objectives.
- iii. Best practicable treatment or control of the discharge shall be implemented to assure that pollution and nuisance will not occur, and the highest level of water quality consistent with maximum benefit to the people of the State will be maintained.
- iv. The discharge is necessary because no feasible alternative to the discharge (reclamation, evaporation, infiltration, discharge to the sanitary sewer, etc.) is available.
- v. The discharge is limited to that increment of wastewater that remains after implementation of all reasonable alternatives for reclamation or disposal.
- vi. The discharge is regulated by NPDES permit/waste discharge requirements.

b. The Action Plan for Storm Water Discharges

The Basin Plan's Action Plan for Storm Water Discharges acknowledges that MS4 systems may convey certain types of non-storm water flows that were considered a low threat source of pollutants. Although these discharges pose little threat to water quality, the Action Plan for Storm Water Discharges requires permits to contain requirements to implement certain control measures to ensure that these discharges individually and cumulatively do not adversely impact water quality. These discharges are allowable under the same conditions described above to comply with the discharge prohibition.

2. Non-Storm Water BMP Plans

In order to meet the requirements of the Clean Water Act, the Federal Code of Regulations and the North Coast Basin Plan, Co-Permittees are required to develop and implement a non-storm water BMP plan for all low threat non-storm water discharges, which will be allowable under the terms and conditions of the permit. These conditions are consistent with and implement the Action Plans in the Basin Plan. The Co-Permittees, with the exception of the City of Cloverdale, developed these plans prior to the adoption of this Order. Their plans were available for public comment prior to approval by the Executive Officer. Co-Permittees with approved plans in place by the adoption of this Order do not have to re-submit plans for approval.

The City of Cloverdale, as new municipality designated in the MS4 program in 2013, had requested additional time to submit a non-storm water BMP plan. This was to allow the City of Cloverdale to prioritize their newly developing program and focus on specific priorities needed to effectively manage storm water run-off. Regional Water Board staff was agreeable to their proposed submittal date of December 31, 2015.

There are several permitting options available for a low threat discharge under the requirement for an NPDES permit/waste discharge requirements. This includes the Statewide general municipal, industrial, or construction storm water permits, Statewide general permit for utility vaults and underground structures, the North Coast's general low threat permit, and individual permits, including this Order.

For Co-Permittees with an approved non-storm water management plan, low threat discharges are allowed in the Co-Permittee's jurisdictional boundary by the municipality itself and third party dischargers not named as a Co-Permittee in this Order. For most covered discharges, the third party discharge does not need to apply for a separate NPDES permit, as long as the discharge is conducted in a manner that meets the terms and conditions of this Order and the approved the applicable Co-Permittee's non-storm water BMP plan. It is the Co-Permittee's responsibility to work with third party dischargers to ensure compliance with the non-storm water BMP plan.

The Co-Permittees may also make the determination that a discharge should not be covered under the non-storm water BMP plan, and a separate NPDES permit is needed. This determination may be made for a specific category of discharge or on a case-by-case basis, depending on the nature of a specific discharge. Common types of discharges that may need a separate NPDES permit include natural springs and rising groundwater that are intentionally diverted into the MS4, and utility vault dewatering.

Also, certain types of discharges may need additional permits, besides coverage under the MS4 permit for non-storm water discharges. This could include permits

and authorization to intentionally divert overflows from riparian habitats or wetlands and appropriate permits for the use of reclaimed water.

The Order also allows for the Co-Permittees to propose additional types of non-storm water flows to be included in a non-storm water BMP plan, if it can be demonstrated that the discharge meets the terms and conditions of the Order and is conducted with BMPs to reduce or eliminate the discharge. It is the Co-Permittees' responsibility to obtain prior approval for a new type of discharge, this includes a discharge proposed by a third party.

Chapter 40 of the Federal Code of Regulations section 122.26(d)(2)(iv)(B)(1) states that a Co-Permittee's illicit discharge program only needs to address firefighting activity when such discharges or flows are identified as significant sources of pollutants to receiving waters. Unless such a determination is made, firefighting flows are exempt from the discharge prohibition. This Order, however, requires the use of BMPs during firefighting activities when possible. Additionally, BMPs are required for all training exercises and equipment maintenance.

Order No. R1-2009-0050 included a Discharge Prohibition which stated that "discharges from the MS4 which cause or contribute to exceedances of receiving water quality objectives for surface water are prohibited." Order No. R1-2009-0050 also had a Receiving Water Limitation which stated "Discharges of storm water and non-storm water from the MS4 that cause or contribute to a violation of water quality standards are prohibited." This Discharge Prohibition and Receiving Water Limitation are redundant. To address this redundancy, the Discharge Prohibition has been removed from this Order. This is consistent with other NPDES permits, which address this requirement as a Receiving Water Limitation. The Receiving Water Limitation alone provides protection to water quality and meets the intention of 40 CFR and the California Water Code.

V. Receiving Water Limitations and Water Quality Standards

- A. Receiving Water Limitation IV.A** The discharges of storm water and non-storm water from an MS4 shall not cause or contribute to a violation of water quality standards. This receiving water limitation has been retained from Order NO. R1-2009-0050.

Water quality standards are defined in 40 CFR section 131.3(i) as provisions of State or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act.

Under title 40 CFR section 131.4(a), asserts that States are responsible for reviewing, establishing, and revising water quality standards and 40 CFR section 131 subpart B sets out the criteria in which States must establish water quality standards. This is defined by:

1. Section 131.10, *designation of uses*, states each State must specify appropriate water uses to be achieved and protected;

2. Section 131.11, *criteria*, states that each State must adopt those water quality criteria that protect the designated use; and
3. Section 131.12, *Antidegradation policy*, states that States shall develop and adopt a statewide antidegradation policy and identify methods for implementing such policy.

This Order requires that the discharges of storm water and non-storm water from a MS4 shall not cause or contribute to a violation of water quality standards. The determination of applicable water quality standards is based on the beneficial use of the water and the most stringent water quality criteria needed to protect those uses. Water quality standards generally consist of narrative and numeric water quality criteria contained in the Basin Plan, the California Ocean Plan, the National Toxics Rule, the California Toxics Rule, the State Implementation Policy for the California Toxics Rule, and other state or federally approved surface water quality plans.

The Clean Water Act section 402(p) does not explicitly state that municipal dischargers must meet water quality standards, but rather “such other provisions that the Administrator or the State determines appropriate for the control of such pollutants.” The U.S. EPA, the State Water Board, and Regional Water Boards have consistently maintained that MS4s must meet water quality standards.

In 1999 case law involving MS4 permits issued by the U.S.EPA to several Arizona cities (*Defenders of Wildlife v. Browner*, 1999, 197 F.3d 1035), the United States Court of Appeals for the Ninth Circuit upheld U.S.EPA’s requirement for MS4 discharges to meet water quality standards, but it did so on the basis of U.S. EPA’s discretion rather than on the basis of strict compliance with the Clean Water Act. In other words, while holding that the Clean Water Act does not require all MS4 discharges to comply strictly with water quality standards, the U.S. EPA had the authority to determine that ensuring strict compliance with state water quality standards is necessary to control pollutants.

This receiving water limitation is consistent with 40 CFR 122.44(d)(1)(i), which requires NPDES permit to include limitations to “control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic) which the Director determines are or may be discharged at a level which cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

- B. Receiving Water Limitation IV.B** The discharges of storm water and non-storm water from an MS4 shall not cause an alteration of natural temperature of receiving waters unless it can be demonstrated to the satisfaction of the Executive Officer that such alteration in temperature does not adversely affect beneficial uses. At no time or place shall discharges cause temperature to increase more than 5⁰ Fahrenheit above natural receiving water temperature. This receiving water limitation is based on the narrative temperature water quality objective contained in the Basin Plan.

The Basin Plan contains numerous narrative and numeric water quality objectives in which the Co-Permittees cannot cause or contribute to a violation of (as required in IV.1.). This includes a narrative objective for temperature. The Basin Plan water quality objectives are not explicitly listed in the body of this Order, but rather referenced holistically within the

definition of water quality standards. However, due to the recently adopted “Policy for the Implementation of the Water Quality Objective for Temperature,” this Order now states the narrative water quality objective for temperature. This water quality objective has been retained from Order No. R1-2009-0050.

VI. Effluent Limitations and Iterative Process

This Order does not contain effluent limitations, consistent with the State Water Board findings in Order No. WQ 91-03 and WQ 91-04 that permits can contain narrative requirements for implementation of BMPs in place of numeric effluent limits. The U.S. EPA, the State Water Board, and Regional Water Boards have previously determined that limitations necessary to meet water quality standards can be appropriate for the control of pollutants discharged by the MS4s and must be included in MS4 permits. Consistent with federal law, the State Water Board has also found it appropriate to require implementation of BMPs in lieu of numeric water quality-based effluent limitations.

State Water Board Order No. 99-05 requires Permittees to comply with discharge prohibitions and receiving water limitations through timely implementation of control measures and other actions to reduced pollution in discharges. Also consistent with Order 99-05, compliance with water quality standards in this Order is to be achieved through an iterative approach requiring the implementation of improved BMPs over time. The iterative process of BMP development, implementation, and assessment is needed to promote consistent compliance with water quality standards. If a determination is made that a Co-Permittee is causing or contributing to an exceedance of applicable water quality standards, the Co-Permittee must engage in the iterative process of proposing and implementing additional BMPs to prevent or reduce the pollutants causing or contributing to the exceedance. This iterative process is modeled on receiving water limitations set out in State Water Board precedential Order WQ 99-05 and required by that Order to be included in all MS4 permits.

Title 40 CFR section 122.44(d)(1) requires MS4 permits to include any requirements necessary to achieve water quality standards established under the Clean Water Act section 303, including State narrative criteria for water quality.

California Water Code section 13240 requires each regional water board to formulate and adopt water quality control plans for all areas within the region. California Water Code section 13050(j) defines water quality control plan consisting of a designation or establishment for the waters within a specified area of all of the following:

- A.** Beneficial uses to be protected.
- B.** Water quality objectives
- C.** A program of implementation needed for achieving water quality objectives.

The water quality control plan for the North Coast Region is entitled “Water Quality Control Plan for the North Coast Region” and is often referred to as the “Basin Plan.”

California Water Code section 10305(h) defines water quality objectives as the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.

Compliance with receiving water limits based on applicable water quality standards is necessary to ensure that MS4 discharges will not cause or contribute to violations of water quality standards.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions

Federal 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 40 CFR section 122.42. These provisions are retained from Order No. R1-2009-0050.

B. General Provisions

Title 40 CFR 122.26(d)(2)(iv) requires that each Co-Permittee shall develop and implement a proposed management program which “shall include 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. The program shall also include a description of staff and equipment available to implement the program. Proposed program may impose controls on a system wide basis, a watershed basis, a jurisdictional basis, or on individual outfalls. Proposed management programs shall describe priorities for implementing controls. “

1. Maximum Extent Practicable

The Clean Water Action section 402(p)(3)(B)(iii) requires municipalities to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and systems, design, and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

The maximum extent practicable standard requires Co-Permittees to apply BMPs that are effective in reducing or eliminating the discharge of pollutants to the waters of the United States. The maximum extent practicable standard emphasizes pollutant reduction and source control BMPs to prevent pollutants from entering storm water runoff.

The maximum extent practicable standard is ever-evolving, flexible, and advancing concept, which considers technical and economically feasibility. As knowledge about controlling urban runoff continues to evolve, so does that which the standard for meeting maximum extent practicable. BMP development is a dynamic process and may

require changes over time as the Co-Permittees gain experience and/or the state of the science and art of storm water treatment and control progresses. Co-Permittees must choose effective BMPs, and reject 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. This is consistent with the State Water Board’s Office of Chief Counsel February 11, 1993 memorandum regarding the “Definition of Maximum Extent Practicable.”

Further, because local communities vary, some BMPs may be more effective in one community than in another. The Maximum Extent Practicable standard is the cumulative result of implementing, evaluating, and creating corresponding changes to a variety of technically appropriate and economically feasible BMPs, ensuring that the most appropriate BMPs are implemented in the most effective manner. Consistent with federal regulations and State Water Board this Order allows the Co-Permittees to implement BMPs to comply with the requirements of this Order.

2. Legal Authority

This Order requires each Co-Permittee to establish and maintain adequate legal authority through ordinance or other such similar means to control discharges to the MS4. This requirement is consistent with 40 CFR 122.26(d)(1)(ii) which states requires the Co-Permittees to describe legal authority to control discharges to the MS4 and 122.26(d)(2)(i) which states each Co-Permittee can operate pursuant to legal authority established by statute, ordinance, or series of contract which authorizes or enables the applicant at a minimum to:

- a.** 122.26(d)(2)(i)(A): control through ordinance, permit contract, order or similar means, the contribution of pollutants to the [MS4] by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity;
- b.** 122.26(d)(2)(i)(B): prohibit through ordinance, order or similar means the discharge to a municipal separate storm sewer;
- c.** 122.26(d)(2)(i)(C): control through ordinance, order or similar means the discharge to a [MS4] of spills, dumping or disposal of materials other than storm water;
- d.** 122.26(d)(2)(i)(D): control through interagency agreements among (Co-Permittees) the contribution of pollutants from one portion of the municipal system to another portion of the municipal system;
- e.** 122.26(d)(2)(i)(E): require compliance with conditions in ordinances, permits, contracts or orders; and
- f.** 122.26(d)(2)(i)(F): 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 [MS4].

As operators of the MS4, each Co-Permittee cannot passively receive and discharge pollutants from third parties. By providing free and open access to an MS4 that conveys discharges to waters of the United States, each Co-Permittee essentially accepts responsibility for discharges into the MS4 that it does not prohibit or control. These discharges may cause or contribute to a exceedance of water quality standards.

Clean Water Act section 402(p) requires operators of MS4s to prohibit non-storm water discharges into their MS4s. This is necessary because pollutants which enter the MS4 generally are conveyed through the MS4 to be eventually discharged into receiving waters without any sort of treatment. If a municipality does not effectively prohibit unauthorized non-storm water discharges, it is providing the pathway through the MS4, which enables pollutants to reach receiving waters. Since the municipality's storm water management service can result in pollutant discharges to receiving waters, the municipality must accept responsibility for the water quality consequences resulting from this service.

Furthermore, third party discharges may cause a Co-Permittee to be out of compliance with its permit. Since pollutants from third parties which enter the MS4 will eventually be discharged from the MS4 to receiving waters, the third party discharges can result in a situation of Co-Permittee non-compliance if the discharges lead to an exceedance of water quality standards. For these reasons, each Co-Permittee must prohibit and/or control discharges from third parties to its MS4. U.S.EPA supports this concept when it states “the operators of regulated small MS4s cannot passively receive and discharge pollutants from third parties” and “the operator of a small MS4 that does not prohibit and/or control discharges into its system essentially accepts ‘title’ for those discharges. At a minimum, by providing free and open access to the MS4s that convey discharges to waters of the United States, the municipal storm sewer system enables water quality impairment by third parties.”¹

Waste and pollutants which are deposited and accumulate in MS4 drainage structures will be discharged from these structures to waters of the United States unless they are removed. These discharges may cause or contribute to, or threaten to cause or contribute to, a condition of pollution in receiving waters. For this reason, pollutant discharges into MS4s must be reduced to the maximum extent practicable using a combination of management measures, including source control, and an effective MS4 maintenance program implemented by each Co-Permittee.

Enforcement of local storm water runoff related ordinances, permits, and plans is an essential component of every storm water runoff management program and is specifically required in the federal storm water regulations and this Order. Each Co-Permittee is individually responsible for adoption and enforcement of ordinances and or policies, implementation of identified control measures/BMPs needed to prevent or reduce pollutants in storm water runoff, and for the allocation of funds for the capital, operation and maintenance, administrative, and enforcement expenditures necessary to implement and enforce such control measures/BMPs under its jurisdiction.

The Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A – D) are clear in placing responsibility on municipalities for control of storm water runoff from third party

¹ Federal Register/Vol. 64, No. 235/Wednesday, December 8, 1999/Rules and Regulations. p. 68765-68766.

activities and land uses to their MS4.² In order for municipalities to assume this responsibility, they must implement ordinances, permits, and plans addressing storm water runoff from third parties. Assessments for compliance with their ordinances, permits, and plans are essential for a municipality to ensure that third parties are not causing the municipality to be in violation of its municipal storm water permit. When conditions of non-compliance are determined, enforcement is necessary to ensure that violations of municipality ordinances and permits are corrected. When a Co-Permittee determines a violation of its storm water ordinance, it must pursue correction of the violation.

Without enforcement, third parties do not have incentive to correct violations. U.S.EPA supports enforcement by municipalities when it states “Effective inspection and enforcement requires [...] penalties to deter infractions and intervention by the municipal authority to correct violations. Enforcement mechanisms [...] also must be described.”³

Adequate legal authority is required for each Co-Permittee to implement and enforce their storm water programs. Without adequate legal authority, Co-Permittees would be unable to perform many vital program elements such as performing inspections and requiring installation of control measures. In addition, Co-Permittees would not be able to conduct enforcement activities, assess penalties, and/or recover costs of remediation. Enforcement of local storm water runoff related ordinances, permits, and plans are an essential component of every storm water runoff management program and is specifically required by federal regulations and this Order.

Each Co-Permittee is required to have adequate legal authority no later than one year after the effective date of this Order. Most Co-Permittees already have adequate legal authority. The Co-Permittees have been given the first year of this Order to review their legal authority and determine if it is consistent with this Order.

3. Fiscal Resources

This Order requires each Co-Permittee to provide an annual fiscal analysis of the capital necessary to comply with the Order, including the source of funds used in the past year and proposed for the upcoming year. This is a requirement consistent with 40 CFR 122.26(d)(2)(vi) which states “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 programs. Such analysis shall include a description of the source of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.”

This requirement is necessary to show that the Co-Permittee has adequate resource to meet all of the requirements of this Order. The analysis can also show year-to-year

² U.S.EPA, 2000. EPA Administered Permit Programs: The National Pollutant Discharge Elimination System. Code of Federal Regulations, Vol. 40, Part 122.

³ U.S.EPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. EPA/833-B-92-002.

changes in funding the storm water program. A summary of the annual analysis must be reported in the annual report. This report will help the Regional Water Board understand the resources that are dedicated to compliance with this Order, to implement and enforce on the storm water program, and track how this changes over time. This requirement has been retained from Order No. R1-2009-0050.

4. Storm Water Management Plan

The requirement to maintain a Storm Water Management Plan (SWMP) has been removed from this Order. Historically, Permittees have developed and submitted a Storm Water Management Plan (SWMP) as part of the permit application. The intent of the SWMP was to identify specific tasks and programs the Permittee would develop and implement to reduce the discharge of pollutants in storm water to the maximum extent practicable in a manner designed to achieve compliance with water quality standards. The SWMP would define the actions and sets measureable goals that will meet the maximum extent practicable standard. The Permittee would then be required as part of the NPDES permit, to implement the BMPs identified in the SWMP.

However, beginning with Order No. R1-2009-0050, the development of the storm water NPDES permits evolved. These permits used to provide general requirements, allowing the Permittee to develop a customized storm water program, documented in a SWMP. Now, requirements are more prescriptive and imbed specific BMPs directly into the permit. Essentially, permits now provide the framework for Permittees to reduce pollution in storm water runoff to the maximum extent practicable, the same standard used to develop a SWMP. This level of prescriptiveness within the permit is equivalent to the details provided in the SWMP. The Permittee can now use the permit itself as the SWMP. The elimination of the SWMP cuts out redundant requirements and allows the Permittees to better utilize resources in other areas the program.

C. Special Provisions

1. Public Information and Participation Program (PIPP)

a. General

This Order requires each Co-Permittee to develop and implement a Public Information and Participation Program (PIPP). The objectives of the program are to educate the general public on storm water runoff, the adverse impact of storm water pollution on receiving waters and potential solutions to mitigate the impacts. The program also sets out to educate the public on proper disposal of various types of waste with the intention of eliminating the use of the MS4 system as a disposal method. Additionally, the program is used to facilitate public engagement on participating in achieving a healthy watershed. This requirement is consistent with 40 CFR section 122.26(d)(2).

Implementation of a PIPP is a critical part of an effective storm water management program. The State Water Board Technical Advisory Committee “recognized that education with an emphasis on pollution prevention is the fundamental basis for

solving nonpoint source pollution problem.” The US EPA’s Phase I Fact Sheet 2.3 (Fact Sheet 2.3) finds that “an informed and knowledgeable community is critical to the success of a storm water management program since it helps insure the following: (1) Greater support for the program as the public gains a greater understanding of the reasons why it is necessary and important, and (2) Greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and other in the community, including the individual actions they can take to protect or improve the quality of area waters.”

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

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

b. Residential Outreach Program

This Order requires the Co-Permittees to develop and implement several different types of educational materials, conduct public service announcements, and develop an advertising campaign to inform the general public on topics related to storm water pollution prevention, appropriate disposal methods of different forms of waste, proper lawn care, water conservation practices, appropriate fertilizer and pesticide application and proper car wash methods.

This Order requires that each Co-Permittee develop and distribute an “only rain down the drain” themed campaign targeted at residents with the goal of providing general storm water pollution prevention education. The general population is often not aware that the storm water drain is not the same as the sanitary sewer. Therefore, there is a false understanding that storm water is somehow treated. Additionally, there is a lack of knowledge that the storm drain system leads directly to creeks and rivers. A general storm water campaign is important to provide the general education to the public that disposing of pollutants down the storm drain is not only illegal, but is also impacts creeks, rivers, aquatic life, wildlife and the ability of those waters to support human uses, like drinking water and recreation. By providing this form of general education, it will help inform people to think twice

about their actions when disposing of pollutants and hopefully protecting the storm drain system from unwanted pollutants.

This Order requires each Co-Permittee to develop and distribute educational material on the proper handling and disposal on the following types of wastes:

- i.** Vehicle fluids;
- ii.** Household waste;
- iii.** Construction waste;
- iv.** Unused pesticides and fertilizers;
- v.** Green waste;
- vi.** Trash; and
- vii.** Animal waste.

The purpose of this outreach requirement is to not only promote proper disposal of these common residential types of wastes, but also serves to reduce and/or eliminate the use of the MS4 system as a place to dispose of waste. These listed wastes are the most common among residents to use and therefore dispose.

This Order requires each Co-Permittee to develop and implement an outreach program to residents on proper lawn care and water conservation practices. Over-irrigation is a common problem in urbanized areas. The general public may not be knowledgeable that potable water from an irrigation system is considered a source of pollutants in surface water. Potable water in most urbanized areas is treated to be suitable as drinking water. But chlorine, a by-product of chlorination, is a pollutant to aquatic life. Additionally, irrigation runoff can also convey pollutants such as fertilizers, pesticides, and herbicides. By educating the general public on lawn care techniques, the potential to discharge pollutants from over-irrigation can be dramatically reduced. Also, by promoting water conservation through limiting over-irrigation can result in reducing or even eliminating potable water to the MS4.

This Order requires that each Co-Permittee develop and distribute educational materials on proper methods of residential car washing. Most people are not aware that washing their car can result in a discharge of a variety of pollutants to receiving waters. Wash water contains pollutants such as chlorine, oils, fine sediments, and soaps. Soaps are a particular concern due to the potential of containing phosphate, a pollutant found above water quality standards in the Laguna watershed. Even “environmental friendly” soaps are still not allowed down the storm drain. Education and outreach on this particular activity is critical for an effective storm water program.

This Order requires each Co-Permittee to participate in local watershed groups or committees to educate the public about storm water pollution prevention and to organize events targeted to residents to participate in community pollution prevention and clean-up events. The intent of this requirement is to solicit public input for messages and information that will persuade the public to modify their common activities to reduce or prevent pollutants from impacting storm water. A paper presented by David Galvin during the 4th National Conference Nonpoint

Source and Storm Water Pollution Education Programs October 17-20, 2005, “Measuring Results from Outreach and Education Program: Can We See Improvements Downstream?” stated: “Experiential programs appear to be more powerful than information campaigns, more likely to connect people with their watershed. Activities such as citizen volunteer monitoring, hands-on restoration, storm-drain stenciling projects, and other ways to get an experiential element incorporated into the program have a greater likelihood of success. Get people’s feet wet and hands dirty. Once they have invested in the watershed, even in a tiny part of it, they will have more ownership.” Direct feedback from the public on storm water pollution prevention messages can be an inexpensive alternative to traditional surveys and studies as well as promoting increased public support for storm water pollution prevention campaigns.

This Order requires each Co-Permittee to use effective outreach strategies to educate and involve ethnic communities in storm water pollution prevention. If outreach materials are only developed for the English speaking audience, the PIPP campaign will not be effective at reaching a portion of non-English speaking communities. The intent of this requirement is an attempt to deliver storm water pollution prevention measures to as many members of the community as possible.

Each Co-Permittee has one year to plan out their Residential Outreach Program. Implementation is required at the start of the second year. Most Co-Permittees have a Residential Outreach Program or have been working on an enhancement of the existing program. One year provides adequate time to plan out the implementation for the term of this Order.

c. Education to School Children

This Order requires each Co-Permittee to develop and implement an outreach strategy to target school aged children with education on storm water pollution. The term “school aged children” is defined in this Order as kindergarten to seniors in high school. The plan must include four basic components including educational materials, locations and special events, interactive opportunities, and partnerships.

Educating school aged children is an essential component of an effective storm water program. If storm water pollution prevention education is delivered to children at an early age, pollution prevention techniques will likely become a routine practice. Additionally, children often relay new information to their parents, further supporting the messages throughout the community.

The plan to educate students is required to include educational materials and an outline for locations and special events to deliver the materials. The Order requires materials to be developed for five topics. The rationale for each topic is provided as follows:

- i. General watershed education:** in order to understand the significance of storm water pollution and the transport of pollutants from land to surface water, it is important to understand the general concept of a watershed.

- ii. **Local aquatic species:** storm water pollution has a direct impact on aquatic life. In order for children to make the connection to the effects of storm water pollution on aquatic life, they need education on the types of species that live in the local streams and how they are impacted by pollution.
- iii. **Anti-littering campaign:** trash continues to be an issue on and near elementary and high school campuses. Students may not be aware of the consequences that littering can have on water quality, the aquatic ecosystem, and wildlife. This requirement is intended to not only educate youth on the fate and transport of trash to nearby creeks and streams, but to demonstrate the harmful consequences trash has on the environment.
- iv. **Pet waste management:** cleaning up pet waste is a BMP that children can implement in their own life and to ownership and pride in contributing to protecting water quality. Again, this message can also be delivered to the adults in the child’s life to further educate the community on this water quality concern.

The plan must include the locations and special events that Co-Permittees can distribute educational materials. The development of educational materials is futile if not distributed at locations and events in which children will be in attendance and will capture their attention. It is important that the Co-Permittees plan upfront on the distribution strategy and have a plan in place for the duration of the Order.

Providing education to children needs to be done in a fun and interesting way in order to be effective. Co-Permittees will need to identify interactive opportunities for delivering education methods. Interactive opportunities can be delivered in a variety of ways including games, displays, contests, puzzles, and workbooks.

Finally, the education of children will further be strengthened through the development of partnerships in the community. Developing partnerships will help the Co-Permittees identify opportunities to further enhance efforts to educate children on storm water pollution. Co-Permittees may be able to provide additional support to existing efforts, incorporate storm water education into existing youth programs, or support efforts of local watershed groups to include children in activities, like beach or creek clean-ups.

The Co-Permittees must develop the outreach plan by the end of the second year of the Order. Co-Permittee have the option to develop a single, watershed-wide plan or an individual plan. The watershed-wide plan can identify areas of outreach that can be implemented watershed wide by all Co-Permittees, but will need to include a specific element for each municipality with regards to targeting outreach in each Co-Permittee’s jurisdictional boundary. For example, the Co-Permittees may develop educational materials on a watershed wide basis, but then have individual plans for the distribution of those materials.

The requirements for this Order have been retained from Order No. 2009-0050, with the following changes:

Order No. R1-2009-0050 PIPP included a storm drain stenciling requirement and a method for the community to report MS4 related problems to each Co-Permittee. These requirements are now addressed in the Illicit Discharge and Detection Elimination section of this Order.

Order No. R1-2009-0050 required each Co-Permittee to distribute storm water pollution prevention public educational materials to automotive part stores, home improvement centers, lumber yards, hardware stores, landscape supply stores, nurseries, stores where fertilizers and pesticides are sold, pet shops, feed stores and local fairs and events. This requirement was been removed from this Order. Alternatively, this Order now requires each Co-Permittee to determine the most effective way to distribute storm water educational materials to residents. This level of flexibility provides each Co-Permittee to determine the best way to reach residents, rather than having a set of specific requirements.

Order No-R1-2009-0050 required each Co-Permittee to make impressions on at least 25% of the permanent population via newspaper, local TV access, billboard, local radio, internet access, and/or other advertising techniques or media. This requirement has been removed from this Order. While there are still requirements to conduct outreach to the public, this Order does allow the Co-Permittee to determine how to distribute storm water messages to the general public. Additionally, the requirement to make impressions on at least 25% of the permanent population proved to be a difficult goal to measure.

This Order requires each Co-Permittee to develop and distribute educational material on proper methods of washing cars, specific towards residential use. This is a new requirement. The September 2012, Russian River Watershed Associations' Storm Water & Watershed Awareness Baseline & Tracking Survey identified car washing activities of the greatest concern with regards to residential pollutants sources discharging to the MS4. The report identified that a large portion of the population engage in this activity and with many doing so on a paved surface. This requirement was added to this Order to mitigate this finding.

This Order requires each Co-Permittee to keep a website (or a link to a website) with outreach and educational materials, including advertising of public participation opportunities. This is a new requirement. Websites are a fundamental way of reaching a majority of residents. This is a quick, inexpensive, and effective way of disseminating information to the general public. Most Co-Permittees are already maintaining a storm water website. By having a requirement within the permit to have the website, each Co-Permittee can best utilize their PIPP. Additionally, as many of the Co-Permittees share resources with one another, this will provide an easy mechanism to access a variety of resources.

Order No. R1-2009-0050 required each Co-Permittee to develop and implement a corporate outreach program. This consisted of providing outreach and educational

materials on storm water pollution prevention to four retail gasoline outlet franchisers, four automotive parts franchisers, two home improvement center franchisers, and six restaurant franchisers. This requirement is not included in this Order. These types of facilities are included in the Industrial/Commercial Facilities Program, which includes the distribution of outreach materials to all identified facilities within each Co-Permittee’s jurisdictional boundary. The corporate outreach program in the PIIP section of this Order is duplicative and is better addressed in the Industrial/Commercial Facilities Program. Additionally, the Business Assistance Program has moved to the Industrial/Commercial Facilities Program.

2. Industrial/Commercial Facilities Program

a. Business Assistance Program

This Order requires each Co-Permittee to implement a Business Assistance Program to provide technical resources to specific types of facilities to facilitate their efforts to reduce pollution in storm water runoff. Each Co-Permittee is required to provide outreach and educate to all of the following facilities within their jurisdictional boundary:

- i.** Automotive parts retail facilities;
- ii.** Commercial car washing operations;
- iii.** Mobile carpet cleaning services;
- iv.** Power washers;
- v.** Portable sanitary service providers; and
- vi.** Commercial pesticide applicator services.

The Business Assistance Program is intended to target pollutant generating activities with educational materials on controlling pollutants in storm water runoff and eliminating non-storm water discharges, except where authorized under a Co-Permittee’s Non-Storm Water BMP Plan. Each Co-Permittee is required to distribute educational materials to these businesses once during the permit term.

b. Critical Source Program

This Order requires each Co-Permittee to develop and implement an industrial/commercial facilities program consistent with 40 CFR section 122.26(d)(2)(iv)(C). Regulations under this section require that municipalities identify priorities and procedures for inspections and establish and implement control measures for facilities determined to be contributing a substantial pollutant loading to the MS4.

This Order includes requirements to identify, inventory, educate, inspect and enforce at four type of facilities considered to have high pollutant generating activities. These types of facilities are referred to as “critical sources.” The four facility types are restaurants, automotive service facilities, retail gasoline outlets, and nurseries/landscape centers. Other facilities may be identified as critical

sources if they are found to be identified as a high potential to discharge sediment or nutrients to the MS4 that may result in an exceedance of water quality standards.

These four categories of facilities have been identified as critical sources based on the pollutants of concern handled at each facility and the potential to discharge pollutants to the MS4 in storm water and non-storm water discharges. Pollutants of concern include those identified as causing impairment to surface water such as bacteria, sediment and nutrients. Table F-5 provides typical pollutants found at each critical facility and the sources most likely to contribute pollutants to storm water and the pollutants.

Table F-6: Critical Source Facilities

Critical Source	Source Areas	Pollutants of Concern
Restaurants	Food Waste Handling Grease Handling Dumpsters Equipment Cleaning Power Washing Wash Water	Bacteria Cooking Grease Food Waste Nutrients (in soaps) Trash
Automotive Service Repair	Wet and Dry Sanding Equipment Cleaning Dumpsters Waste Oil Handling Vehicle Cleaning Power Washing Wash Water	Heavy Metals, Hydrocarbons Trash and Debris Solvents Nutrients (in Soaps)
Retail Gasoline Outlets	Fueling Dumpsters Power Washing	Heavy Metals Hydrocarbons Trash and Debris Oil and Grease
Nurseries and Nursery Centers	Irrigation Chemical Storage Chemical Usage Green Waste Disposal	Nutrients Pesticides Sediments

This Order requires Co-Permittees to require source control BMPs at critical source facilities with the objective of pollutant reduction in storm water runoff and to control non-storm water discharges. It is the responsibility of the Co-Permittee to educate each facility within their jurisdictional boundary on proper BMPs required to comply with local ordinances. Minimum BMPs are identified in this Order and are referenced from the 2003 CASQA Storm Water Best Management Practice Handbook Commercial/Industrial Activity, which serves as the industry standard for California. These BMPs include the implementation of good housekeeping practices designed to control pollutants at the source, promote the use of proper waste management practices, and implement control practices to keep pollutants away from any entrance to the MS4 system. The BMPs are technically feasible, practicable, and cost-effective. Consistent with the California Water Code section

13360, where an identified BMP may be impracticable at a particular facility, the Order includes a provision to select and implement an alternative BMP. Additionally, not all BMPs listed in the table will be applicable at all critical source facilities. In absence of such activity at a given facility, the applicable BMPs are not required.

This Order requires each Co-Permittee to conduct inspections at all critical source facilities twice during the permit term. Inspections are necessary to ensure that BMPs are being implemented and that the facility operator(s) are aware of storm water management requirements. Inspections are the most effective way to determine compliance with the critical source requirements within the Order.

This Order requires each Co-Permittee to document the inspection including the inspection findings and the necessary follow up associated with the inspection. Documentation of the inspection is an important element of regulatory effectiveness. It provides evidence of the inspection taking place. This not only supports compliance with the inspection requirements of this Order, but creates a record of potential non-compliance at any given critical source facility. This is necessary in any follow up inspection, and with enforcement procedures.

Each Co-Permittee is required to have an inventory of critical source facilities no later than one year after the effective date of this Order, provide outreach material once during the Order term, and inspect twice during the Order term. In Order to maximize resources, the Co-Permittees are encouraged to coordinate with other agencies and departments to comply with these requirements. For example, the local Certified Unified Program Agency (CUPA) is already charged with inspecting facilities with a Hazardous Materials Business Plan. It is logical to have the CUPA include storm water as part of their inspections, as they are already going to the facility, rather than have an additional staff person conduct an additional inspection. This requires coordination and training, but is a more efficient way of complying.

The requirements for the Industrial/Commercial Facilities Program in this Order have been retained from Order No. R1-2009-0050 with the following changes:

The Business Assistance Program was found in the PIPP section of Order No. R1-2009-0050. While the program in this Order is consistent with Order No. R1-2009-0050, Regional Water Board staff moved the requirements within the Industrial/Commercial Facilities Program in effort to put all the requirements for industrial and commercial facilities in one section of the Order. This section of the Order now includes all the education and outreach requirements for the Business Assistance Program and Critical Sources in one place.

The Business Assistance Program in Order No. R1-2009-0050 included requirements for each Co-Permittee to distribute storm water educational materials to auto repair shops, car wash facilities, mobile carpet cleaning services, commercial pesticide applicator services, and restaurants. This Order removed restaurants and auto repair shops from the Business Assistance Program. These two facilities are included as a facility type in the Critical Source section of the Industrial/Commercial

Facilities Program. The Critical Source section of the permit includes a requirement to distribute educational materials to all critical sources, including restaurants and auto repair shops. Including these facilities in the Business Assistance Program is redundant and therefore, not necessary.

The Business Assistance Program in this Order now includes requirements to distribute educational materials to power washers and portable sanitary service providers. Order No. R1-2009-0050 did not include outreach to these two groups. These two types of groups have a high potential to discharge unauthorized non-storm water discharges. Pollutants of concern with these types of businesses include bacteria, nutrients and other pollutants from cleaning products, and sediment. Education is a proactive and effective approach to reduce and/or eliminate non-storm water discharges and achieve pollutant reduction.

Order No. R1-2009-0050 identified commercial car washing facilities and plastic pellet facilities be included as critical source facilities. Regulation of these facilities in the Critical Source Program has been removed. During the term of Order No. R1-2009-0050, no plastic pellet facilities were identified in the jurisdictional boundary of the Co-Permittees and there were no reports of receiving water impact with plastic pellets. This type of facility does not meet the definition of a critical source and should not be regulated as such.

Commercial car washing is conducted in a manner in which waste water is either reused or is directed to the sanitary sewer. While these facilities still need to operate with BMPs to protect water quality, they are not found to meet the definition of “critical sources.” Therefore the requirement to inspect these facilities as critical sources have been removed from this Order.

Each Co-Permittee is now required to provide educational and outreach material to all critical source facilities. Order No. R1-2009-0050 did not include an outreach component. Education and outreach is one of the most effective ways to facilitate compliance with storm water management requirements. Most unauthorized dischargers occur out of ignorance and not negligence. By educating critical source businesses and providing reminders of storm water management practices, facilities are more likely to be in compliance with requirements.

3. Industrial and Construction Site Regulation

U.S.EPA finds the control of pollutant discharges from industrial and construction sites so important to receiving water quality that it has established a dual (state and local) storm water regulation system. Under this dual system, each Co-Permittee is responsible for enforcing its local permits, plans, and ordinances, and the Regional Water Board is responsible for enforcing the General Construction Activities Storm Water Permit, State Water Board Order No. 2009-0009-DWQ, NPDES No. CAS000002 (General Construction Permit) and the General Industrial Activities Storm Water Permit, State Water Board Order No. 2014-0057-DWQ, NPDES No. CAS000001 (General Industrial Permit).

These two regulatory systems are designed to complement and support each other. Municipalities are not required to enforce Regional Water Board and State Water Board permits; however, they are required to enforce their ordinances and permits. The Federal regulations are clear that municipalities have responsibility to address runoff from industrial and construction sites which enters their MS4. Municipalities have this responsibility because they have the authority to issue land use and development permits. Since municipalities are the lead permitting authority for industrial land use and construction activities, they are also the lead for enforcement regarding runoff discharges from these sites. For sites where the municipality is the lead permitting authority, the Regional Water Board will work with the municipality and provide support where needed. The Regional Water Board will assist municipalities in enforcement against non-compliant sites after the municipality has exhibited a good faith effort to bring the site into compliance.

U.S.EPA discusses the “dual regulation” of construction sites in its Storm Water Phase II Compliance Assistance Guide, which states “Even though all construction sites that disturb more than one acre are covered nationally by an NPDES storm water permit, the construction site runoff control minimum measure [...] is needed to induce more localized site regulation and enforcement efforts, and to enable operators [...] to more effectively control construction site discharges into their MS4s.”

NPDES municipal regulations require that municipalities develop and implement measures to address runoff from industrial and construction activities. Those measures may require the implementation of additional BMPs than are required under the statewide general permits for activities subject to both state and local regulation.

Inspections provide a necessary means for the Co-Permittees to evaluate compliance of pollutant sources with their municipal ordinances and minimum BMP requirements. U.S.EPA recommends inspections of construction, municipal, and industrial sources. Inspection of high risk sources are especially important because of the ability of frequent inspections to help ensure compliance, thereby reducing the risk associated with such sources. U.S.EPA suggests that inspections can improve compliance when it states “Effective inspection and enforcement requires [...] penalties to deter infractions and intervention by the municipal authority to correct violations.”

4. Planning and Land Development Program

a. General

This Order requires each Co-Permittee to develop and implement a Planning and Land Development Program with the goals of:

- i.** Minimize the adverse impacts from storm water runoff on water quality, the biological integrity of receiving waters, and the beneficial uses of water bodies in accordance with requirements under CEQA (Cal. Pub. Resources Code § 21100), and local government ordinances.

- ii.** Minimize the percentage of impervious surfaces on land development projects and implement mitigation measures to mimic the pre-development water balance through infiltration, evapotranspiration, and capture and reuse of storm water. Pre-development water balance determinations shall include assessments of runoff stored on the surface in natural depressions, runoff captured by topsoil and debris layers and runoff evapotranspiration by vegetation.
- iii.** Minimize pollutant loadings from impervious surfaces such as roof-tops, parking lots, and roadways through the use of properly designed, technically appropriate BMPs (including source control BMPs such as trash enclosures, good housekeeping practices), Low Impact Development (LID) strategies, and treatment control BMPs.
- iv.** Properly select, design and maintain treatment control BMPs and hydromodification control BMPs to address pollutants that are likely to be generated by land development, minimize post-development surface flows and velocities, assure long-term functionality of the BMPs, and avoid the breeding of vectors.
- v.** Prioritize the selection of post-development BMPs to remove storm water pollutants specific to the proposed development, control storm water runoff volume and velocity, and beneficially reuse storm water to support an integrated approach to protecting water quality and managing water resources.

The Planning and Land Development program is consistent with 40 CFR 122.26(d)(2)(iv)(A)(2) which states that the storm water management plan shall include: “a description of planning procedures including a comprehensive water plan to develop, implement and enforce control to reduce the discharge of pollutants from [MS4s] which receive discharges from areas of new development and significant redevelopment. Such plan shall address pollutants in discharges from [MS4s] after construction is completed.”

Land development and urbanization have been linked to the impairment of receiving water and impact to beneficial uses. Development projects have the potential to impact the hydrology of the watershed and the water quality of the surface waters. Development without proper controls, often result in increased soil compaction, changes in vegetation and increased impervious surfaces. These conditions may lead to a reduction in groundwater recharge, increase pollutants loads and changes in the flow regime of the surface water drainages. Urban development can result in increased peak stream flows and flow duration, reduced base flows, and increased water temperatures. Increased peak flows and flow duration can cause stream bank erosion, benthic habitat degradation, decreased diversity in macroinvertebrates, changes in channel geomorphology and bed sediment composition and stability.

As development and redevelopment continues within the jurisdictional boundaries of each Co-Permittee, there is a potential for an increase in discharges of storm water and pollutants discharge through the MS4 and thus, further degradation of receiving water. The Land Development and Planning requirements in this Order are intended to reduce the impacts of storm water runoff from future development and redevelopment projects.

This Order requires applicable development and redevelopment projects to select, install, and maintain permanent post-construction storm water BMPs to treat and/or capture post-development storm water runoff. Applicable projects are defined as:

- i.** All development and redevelopment projects creating or replacing 10,000 square feet or more of impervious surface;
- ii.** Streets, roads, highways, and freeway construction or reconstruction creating or replacing a combined total of 10,000 square feet or more of impervious surface;
- iii.** Parking lots (if not included as part of a project type listed above) with 25 or more parking spaces.

Impervious surface is defined as an area that has been modified in such a way as to reduce storm water runoff capture, treatment, and infiltration into underlying soils. Examples of impervious surface include rooftops, walkways, plastic liners, ground surfaces compacted that reduce infiltration, and parking lots.

Each Co-Permittee shall incorporate the selection and sizing of post-construction BMPs during the entitlement process and as early in the process as possible. This Order recognizes that land use planning and development is controlled and authorized by local government. Thus, this Order requires the Co-Permittees to implement and require developers to implement, appropriate post-construction BMPs to reduce the discharge of pollutants and increase flow from new development and redevelopment projects. Including plans for BMP implementation during the design phase of new development and redevelopment projects offer the most cost effective strategy to reduce storm water runoff pollutant loads to surface water.

This Order requires post-construction BMPs to meet sizing criteria to treat and/or capture storm water runoff from new development and redevelopment projects. Post-construction BMPs must meet the following sizing criteria:

- i.** Post-construction BMPs shall be sized to treat all of the runoff generated at the project by the first inch of rain in a 24 hour storm event and capture (infiltration, evapotranspire and/or reuse) the increase in volume of the storm water due to the increase in impervious surface generated by the first inch of rain in a 24 hour storm event.
- ii.** For biofiltration BMPs with an underdrain, the BMPs shall be sized to treat the first 1.5 inches of rain in a 24-hour storm event.

The American Society of Civil Engineers and the Water Environmental Federation have recommend a numerical BMP design standard for storm water that is derived from a mathematical equation to maximize treatment of runoff volume for water quality based on rainfall/runoff statistics and which is economically sound. The maximized treatment volume is cut off at the point of diminishing returns for rainfall/runoff frequency.

b. Low Impact Development

This Order requires all applicable projects subject to post-construction BMPs to integrate LID principles into project design. LID is a site development site design strategy with a goal of maintaining or reproducing the pre-development hydrologic system through the use of design techniques to create a functionally equivalent hydrologic setting. Hydrologic functions of storage, infiltration, and groundwater recharge, as well as the volume and frequency of discharges, are maintained through the use of integrated and distributed small scale storm water retention and detention areas as, reduction of impervious surfaces, and the lengthening of flow paths and runoff time. Other LID strategies include the preservation and protection of environmentally sensitive site features such as riparian buffers, wetlands, steep slopes, valuable trees, flood plains, woodlands, native vegetation and permeable soils. Other benefits from LID BMPs include reducing global warming impacts from new development (preserving carbon sequestering in native soils and retaining native vegetation), increasing water supply through groundwater recharge, and reducing energy consumption.

The use of LID BMPs reduces the amount storm water runoff conveyed to receiving water and promotes storm water infiltration into the soil. Natural vegetation and soil filters storm water runoff and reduces the volume and pollutant loads of storm water. By preserving the pre-development runoff volume with LID BMPs this can result in controlling adverse effects from changes in receiving water hydraulic conditions.

Open space designs which maximize pervious surfaces and retention of “natural” drainages have been found to reduce both the costs of development and pollutant export. Moreover, U.S.EPA finds including plans for a “natural” site design and BMP implementation during the design phase of new development and redevelopment offers the most cost effective strategy to reduce pollutant loads to receiving waters. In addition, a U.S. Department of Housing and Urban Development guidance document on LID notes that the use of LID BMPs allows land to be developed, but in a cost-effective manner that helps mitigate potential environmental impacts.

LID BMPs are a critical component of storm water runoff management at new development projects and provide multiple benefits including preservation of hydrologic conditions, reduction of pollutant discharges, cost effectiveness, and green space.

LID options do not need to be costly. Some design options, such as concave vegetated surfaces or routing rooftop or walkway runoff to landscaped areas, are

cost neutral, or can be less expensive due to less piping and excavation costs. Other LID BMPs, such as minimizing parking stall widths or use of efficient irrigation devices, are often already required. In addition, use of LID BMPs reduces runoff quantity, allowing for treatment control BMPs and other storm water infrastructure on site to be smaller, therefore being cost effective for both developers and municipalities.

The requirement for LID BMPs at new development and redevelopment project is consistent with the following State Water Board Resolutions:

- i.** On May 6, 2008, the State Water Board adopted Resolution No. 2008-30 Requiring Sustainable Water Resources Management. It was resolved that the State Water Board:
 - a)** Continues to commit to sustainability as a core value for all Water Boards' activities and programs;
 - b)** Directs Water Boards' staff to require sustainable water resources management such as LID and climate change considerations, in all future policies, guidelines, and regulatory actions; and
 - c)** Directs Regional Water Boards to aggressively promote measures such as recycled water, conservation, and LID Best Management Practices where appropriate and work with Dischargers to ensure proposed compliance documents include appropriate, sustainable water management strategies.

- ii.** On May 15, 2008, the California Ocean Protection Council (OPC) adopted the Resolution Regarding Low Impact Development. In the Resolution, OPC:
 - a)** Resolves to promote the policy that new developments and redevelopments should be designed consistent with LID principles so that storm water pollution and the peaks and durations of runoff are significantly reduced and, in the case of a new development, are substantially the same as before development occurred on the site;
 - b)** Finds that LID is a practicable and superior approach that new and redevelopment projects can implement to minimize and mitigate increases in runoff and runoff pollutants and the resulting impacts on downstream uses, coastal resources and communities; and
 - c)** Resolves to advance LID implementation in California through NPDES Permit Requirements: When crafting storm water NPDES permit requirements, the State Water Board and Regional Water Boards should ensure that LID designs are utilized as the primary approach to satisfying post-construction runoff control requirements and that LID designs can be utilized to control pollutants and the rate and volume of runoff.

As required by Order No. R1-2009-0050, the City of Santa Rosa and the County of Sonoma developed the Storm Water Low Impact Development Technical Design Manual (LID Manual), approved by the Regional Water Board's Executive Officer. The LID Manual provides the technical design guidelines for development projects in the implementation of permanent post-construction BMPs. The LID Manual

incorporated post-construction BMP sizing and selection requirements contained in Order No. R1-2009-0050 as a tool for stakeholders to follow for project compliance.

This Order requires adoption and implementation of the LID Manual by each Co-Permittee by the effective date of this Order. Regional Water Board staff has been working with the Co-Permittees, by way of their implementation plans, on having the adoption of the LID Manual as a high priority. Each Co-Permittee has been focusing on this effort as part of the commitment in the implementation plan. Based on the dates provided in the implementation plans, each Co-Permittee has made a commitment to have the LID Manual adopted prior to the effective date of this Order. Therefore, the date of having the requirements of the LID Manual implemented by the effective date of this Order is feasible.

c. Hydromodification Control Plan

This Order requires each Co-Permittee to implement a Hydromodification Control Plan. Hydromodification is defined as an alteration of hydrologic characteristics of surface water, resulting from a change of the natural landscape such as alteration to natural land contours and increase in impervious surfaces. These alterations can result in the increase in velocity and volume (flow rate) and often the timing of runoff. These alterations of a natural watercourse can adversely impact aquatic ecosystems and stream habitat and cause stream bank erosion and other physical modification, including increased flooding.

Increased urbanization can lead to hydromodification impacts through the increase in impervious cover. As impervious surface increases, infiltration will decrease, forcing more water to run off the surface, picking up velocity, as well as altering the timing and magnitude of the flood hydrograph. As a result, runoff leaving urbanized areas is significantly greater in volume, velocity, and pollutant load than pre-development runoff from the same area. Urbanization has also altered the flow regime (rate, magnitude, frequency, timing, and flashiness of runoff) that supports aquatic and riparian habitats.

Studies have shown that the level of imperviousness in an area strongly correlates with the quality of nearby receiving waters. One comprehensive study, which looked at numerous areas, variables, and methods, revealed that stream degradation occurs at levels of imperviousness in the watershed as low as 10 to 20 percent. Stream degradation is a decline in the biological integrity and physical habitat conditions that are necessary to support natural biological integrity and physical habitat conditions that are necessary to support natural biological diversity. For example, few urban streams can support diverse benthic communities with imperviousness within the watershed greater than 25 percent.

Hydrologic changes from urban development also directly and indirectly impact wetlands. Natural wetlands support many beneficial uses and provide important water quality related ecological services, including pollutant removal, flood attenuation, and groundwater recharge. The Center for Watershed Protection provided the USEPA with a synthesis of more than 100 scientific studies on the

direct and indirect impacts of urbanization on wetlands and the role wetlands play in watershed quality. The report found that the three changes from land development with the most potential to impact wetlands include: increases storm water runoff, decreased groundwater recharge, and flow construction.

Non-urban land use changes such as agriculture, grazing, timber harvesting, and low density development may also have hydromodification impacts on receiving waters due to removal of natural vegetation, reduction of riparian vegetation and riparian buffers, and soil compaction. These non-urban land uses, cumulatively, may have similar hydromodification impacts to surface water as urban development.

According to the State Water Board Urban Runoff Technical Advisory Committee report, increases in population density and imperviousness result in the following changes to stream hydrology:

- i. Increased peak discharges compared to pre-development;
- ii. Increased volume of storm water runoff with each storm compared to pre-development levels;
- iii. Decreased travel time to reach receiving water; increased frequency and severity of floods;
- iv. Reduced stream flow during prolonged periods of dry weather due to reduced levels of infiltration;
- v. 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
- vi. Decreased infiltration and diminished groundwater recharge.

d. Offset Mitigation Program

This Order requires each Co-Permittee to develop and implement an offset mitigation program to allow mitigation for projects that are technically infeasible of being able to comply with the volume capture requirements contained in this Order. Projects eligible for the offset mitigation program must meet the criteria contained in this Order including one or more of the following:

- i. The project's proximity to geotechnical hazards;
- ii. The project's proximity to a contaminated groundwater site where infiltration poses a risk of causing pollutant mobilization;
- iii. Site constraints that prohibit the ability to infiltrate storm water due to shallow groundwater or depth to hardpan; or
- iv. Other criteria proposed by a Co-Permittee for Regional Water Board Executive Officer approval in which compliance with volume capture is not feasible, such as high density development.

The purpose of the offset mitigation program is to allow an alternative method of compliance with the implementation of post-construction BMP sizing criteria specific to volume capture. In some areas, infiltration of storm water runoff may pose a significant hazard if done so near a geotechnical hazard, such as fault line.

Or, it may be technically impossible due to the project soils slow infiltration rate. For these types of constraints, the offset mitigation program will allow a project applicant to fund a project offsite that will provide an equal (or greater) water quality benefit.

The offset mitigation program is not available to projects to mitigate storm water treatment requirements. Treatment of storm water is not limited by the above factors and therefore can still take place at these projects.

The Co-Permittees will develop a list of projects which will be funded by the offset mitigation program. The Co-Permittee must consider and select projects which provide a measureable water quality benefit. Consideration shall be given to projects that address receiving water impairments, LID retrofit opportunities, and stream restoration. The list must be approved the Regional Water Board.

e. Maintenance and Operations

This Order requires each Co-Permittee to require that all new development and redevelopment projects subject to post-construction BMPs provide verification of maintenance provisions for LID BMPs, treatment control BMPs and hydromodification controls by way of a legal binding maintenance declaration. Additionally, each Co-Permittee must track and inspect all projects with permanent post-construction BMPs to assess maintenance and operation compliance. This is a vital element to the success of permanent post-construction BMPs. These BMPs will only function properly if maintained accordingly. Each Co-Permittee shall assess BMPs on public right of way and at locations that would not require entering private property. Failure to comply with a maintenance declaration shall be subject to the Co-Permittee's Progressive Enforcement Policy.

The requirements in the Planning and Land Development have been retained from Order. No. 2009-0050, with the following changes:

Order No. R1-2009-0050 included requirements for BMPs to be sized to treat and capture runoff generated by the 85th percentile, 24-hour storm event. This Order no longer references the design storm as the 85th percentile, 24-hour storm event and has replaced the design storm criteria to be the first inch of rain in a 24-hour storm event. This change was made in consideration of the varying design storm through the jurisdictional boundaries of each Co-Permittee. Standardizing the design storm is intended to provide a regional consistency of post-construction requirements. The City of Santa Rosa has determined 0.92 inches is the 85th percentile, 24-hour storm event, so the one inch requirement is a more stringent design storm. For some of the new Co-Permittees, their design storm is slightly larger than an inch. A one inch design storm was been selected as a reasonable and effective design storm for the treatment of pollutants.

This Order now includes biofiltration BMPs with an underdrain to be sized to treat the first 1.5 inches of rain in a 24-hour storm event. This is an increase from the standard design storm by a factor of 1.5. This multiplier is based on the finding in

the Ventura County Technical Guidance Manual that biofiltration of 1.5 times the design capture volume not retained onsite will provide approximately the same pollutant removal as retention of the design capture volume on an annual basis.

Order No. R1-2009-0050 provided the option for the Co-Permittees to develop an offset mitigation program to allow for an alternative method of compliance for projects that could not meet post-construction BMP requirements. The Co-Permittees did not complete the development of their offset mitigation program. Absent of an offset mitigation program, projects not able to meet post-construction requirements would be referred to the Regional Water Board for approval. This Order now requires an offset mitigation program to be developed and implemented by all Co-Permittees. With the addition of seven Co-Permittees, it is not feasible for Regional Water Board staff to review all projects not meeting post-construction requirements, as this could pose a significant workload over time. It is important that each Co-Permittee has a process in place to address offset mitigation without Regional Water Board involvement. While the offset mitigation program itself is subject to Regional Water Board approval, the ability to determine which projects qualify for offset and the appropriate mitigation needs to reside with the Co-Permittee.

5. Development Construction Program

This Order requires each Co-Permittee to develop and implement a Development Construction Program to:

- a. Prevent illicit construction related discharges of pollutants into the MS4 and receiving waters;
- b. Implement and maintain structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites;
- c. Reduce construction site discharges of pollutants to the MS4 to the maximum extent practicable; and
- d. Prevent construction site discharges to the MS4 from causing or contributing to a violation of water quality standards.

This is consistent with 40 CFR 122.26(d)(2)(iv)(D) which states that storm water management program shall include “A description of a program to implement and maintain structural and non-structural [BMPs] to reduce pollutants in storm water runoff from construction sites to the [MS4].”

Soil disturbing activities during construction and demolition exacerbate sediment losses. Sediment is a primary pollutant impacting beneficial uses of receiving waters. According to the U.S. EPA “Stormwater Phase II Final Rule publication, “sediment runoff rates from construction site are typically 10 to 20 times greater than those of agricultural lands and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation can cause physical, chemical, and biological harm” to receiving waters. Sediment, and other

construction activity pollutants, must be properly controlled to reduce or eliminate adverse impacts.

This Order requires each Co-Permittee to restrict grading activities on hillside projects sloped 20% or steeper, unless the project is granted an extension. Grading activities at these projects cannot be conducted during November 1st through April 1st. A Co-Permittee may grant an extension to this requirement and the process to grant an exception is included in this Order. Hillside grading activities pose a larger threat of sediment discharges because of the geography and geology characteristics. Erosion and sediment control cannot be controlled through the use of conventional BMPs. This strict requirement is necessary in order to protect receiving waters impaired with sediment.

This Order requires each Co-Permittee to require basic erosion and sediment control BMPs at construction sites less than one acre. This Order references BMPs from the CASQA California BMP Handbook, Construction January 2003 and the Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices (BMPs) Manual, March 2003 (or subsequent updates). These handbooks are considered industry standards in California.

This Order requires each Co-Permittee to develop and implement a program to require both public and private construction sites one acre or more within their jurisdictional boundary to select, install, implement and maintain BMPs. For the purpose of this Order, construction projects subject to these requirements are projects that require a permit for grading activities. Most municipalities regulate grading by issuing a grading permit, but some issue a building permit. Not all projects with a building permit include soil distribution and therefore are not subject to this Order.

This Order requires each Co-Permittee to develop and implement procedures for construction plan review and approval. This is consistent with 40 CFR 122.26(d)(2)(iv)(D)(1) which states that the storm water management plan shall include “procedures for site planning which incorporate consideration of potential water quality impacts” at construction projects.

This Order requires each Co-Permittee to require the implementation of BMPs at construction projects. Referenced BMPs applicable to construction projects are listed in Table 8 and Table 9 and are referenced from the CASQA California BMP Handbook, Construction January 2003 and the Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices (BMPs) Manual, March 2003 (or subsequent updates). This is consistent with 40 CFR 122.26(d)(2)(iv)(D)(2) which states the storm water management program shall include “requirements for nonstructural and structural [BMPs]” at construction sites.

This Order requires each Co-Permittee to inspect construction site projects to ensure BMPs are properly installed, maintained, and effective. All projects are subject to two inspections per year. All projects must be inspected between September 1 and November 1 (prior to the start of the rainy season), and following within 48 hours of the first half inch rain event at the start of the rainy season. The timing of these inspections

is critical to the protection of water quality. It is imperative that sites are inspected prior to the start of the rainy season to ensure BMPs are in place. It is also imperative that BMP effectiveness is assessed at the onset of the first rain event. If a BMP is not effective, it is necessary to make this determination as early as possible to correct the problem prior to additional rain events.

Additionally, projects determined to be a high threat to water quality will need to be inspected at a monthly frequency during the period of September through May. To determine which projects are considered a high threat to water quality, each Co-Permittee will need to develop a prioritization system. This Order provides factors to consider when developing a prioritization system. These factors include soil erosion potential, site slope, project size and type, sensitivity to receiving water bodies, proximity to receiving water bodies, non-storm water discharges, past non-compliance, and other relevant water quality issues to a particular MS4. Each Co-Permittee should consider triggers for each of these factors that would put a project into a category of high threat to water quality. For example, a Co-Permittee may deem any project within a certain number of feet of surface water has a high threat to water quality.

Requirements for construction project inspections is consistent with 40 CFR 122.26(d)(2)(iv)(D)(3) which states the storm water management program shall include “procedures for identifying priorities for inspecting and enforcing control measures which consider the nature of construction activity.”

The requirements in the Development Construction Program have been retained from Order. No. 2009-0050, with the following changes:

Order No. R1-2009-0050 required preparation of an erosion control plan for all public and private construction sites five acres or more. This Order now requires the preparation of an erosion and sediment control plan (or equivalent) for projects one acre or more. This requirement is consistent with other MS4 permits in California and is necessary for achieving compliance with the maximum extent practicable standard.

The requirement to develop and implement a prioritization system to determine the construction projects that are a high threat to water quality is new to this Order. The intention of this requirement is to identify the sites that are necessary to inspect at a regular frequency. By identifying those projects which are the highest threat to water quality, the Co-Permittees can concentrate on inspecting those sites which need the most attention. Sites identified as having a high threat to water quality are required to be inspected once a month between the months of September and May. This is intended to capture high threat projects during the rainy season.

The requirement to inspect these sites at a monthly frequency is new to this Order. The increase in inspections is necessary to ensure compliance with sites identified to be a high threat to water quality. Inspections are the most efficient and effective way to determine compliance and BMP effectiveness. For projects with a high threat to water quality, inspections throughout the rainy season are essential.

This Order requires that all inspections be documented in a manner to verify that the projects are inspected according to the required frequencies and procedures. This requirement has been added in response to Regional Water Board’s inspection findings of the Co-Permittee’s Development Construction Program. While it was demonstrated inspectors were knowledgeable and qualified to conduct inspections, there was no evidence provided that inspections took place according to the specified frequencies. The method to document these inspections is subject to the Co-Permittee’s discretion, but must provide written evidence that the inspections took place at the specified frequencies, and inspection procedures are met as required in this Order.

6. Public Agency Activities Program

This Order requires each Co-Permittee to develop and implement a Public Agency Activities Program to minimize storm water impacts from Co-Permittee owned or operated facilities and activities.

Publicly owned or operated facilities serve as hubs of activity for a variety of municipal staff from many different departments. Some of these activities may be a source of pollution in storm water runoff, and thus need BMPs to ensure pollution is reduced to the maximum extent practicable.

This Order requires each Co-Permittee to develop an inventory of all owned or operated facilities within the jurisdictional boundary that are potential sources of storm water pollution. A variety of sample facilities are listed in this Order. It is the Co-Permittee’s responsibility to apply appropriate discretion to determine if a specific facility may or may not be a source of pollution. The purpose of this requirement is to assist the Co-Permittees in making the determination which facilities may contribute pollutants to storm water runoff. Consideration should be given to the types of activities conducted at the facility, and the types of material stored. Facilities that store hazardous materials, waste, pesticides, fertilizers, pool chemicals, etc. should be included as potential sources of storm water runoff pollution. Each Co-Permittee should also consider the potential for the transport of pollutants when considering a facility as a source of storm water runoff pollution. For example, parking lots have a high potential to transport pollutants, especially sediments and oil from vehicles. Facilities with parking lots will likely need BMPs to control pollution sources, and thus will need to be identified as an inventoried facility. The inventory must include all facilities that are potential sources of storm water pollution, even if BMPs are already employed. Each Co-Permittee must have a completed inventory no later than one year after the effective date of this Order.

All facilities identified in the inventory will be subject to BMPs for pollutant generating activities. Activity specific BMPs are required to be implemented at any Co-Permittee owned or operated facilities, or at a job site for which the pollutant generating activity is being conducted. This Order includes a list of specific activities for which BMPs are required, which includes the types of BMPs to implement for that activity and is referenced from the Caltrans Storm Water Quality Handbook Maintenance Staff Guide (May 2003), considered an industry standard in the State of California. Additional BMPs may be needed to be protective of water quality and to meet the terms and conditions of

this Order. Each Co-Permittee is required to have necessary BMPs implemented at all applicable facilities no later than three years after the effective date of this Order.

This Order requires each Co-Permittee to develop a storm water facility pollution prevention plan(s) for each facility or groups of facilities identified in the Public Facility Inventory. To comply with this requirement, the Co-Permittee does not need to develop an individual plan for each facility in the inventory. The Co-Permittee can develop a plan that groups similar types of facilities and describes pollution prevention activities that are applicable at each facility and include individual requirements, as necessary. A copy of the facility pollution prevention plan must be easily accessible at the personnel should be familiar with the contents and how to find the document.

This requirement has been added to this Order in an effort to better define pollutant sources and BMPs necessary at each facility that is considered a potential source of storm water pollution. A written plan will enable the Co-Permittees to keep track of requirements at each facility and allow for a clear expectation for staff required to implement and maintain BMPs.

This Order requires that the Co-Permittees inspect all facilities listed in the Public Facilities Inventory be inspected once during the term of the Order. The purpose of the inspection is to determine the effectiveness of BMPs and evaluate any changes needed to in the facility pollution prevention plan. Inspections are required to be documented in order to demonstrate compliance with this requirement.

This Order includes a specific section on requirements for facilities in which vehicle and equipment washing is taking place. While the Caltrans Storm Water Quality Handbook Maintenance Staff Guide, May 2003 (or subsequent revisions) includes BMPs for vehicle and equipment washing activities, the measures listed in the Order are in addition to those listed in the Handbook. All Co-Permittees are required to implement the vehicle and equipment washing program by the effective date of the Order, except the City of Cloverdale. The City of Cloverdale is required to implement the requirements by December 31, 2017. These compliance dates are based on the information in the implementation plans.

This Order includes requirements to develop and implement a Landscape, Park, and Recreational Facilities Management plan. This requirement is consistent with 40 CFR 122.26(d)(2)(iv)(A)(6) which states that Co-Permittees must have a program “to reduce to the maximum extent practicable, pollutants in discharges from [MS4s] associated with the application of pesticides, herbicides, and fertilizers.”

This Order includes requirements for each Co-Permittee to implement a Storm Drain Operation and Maintenance program. This program includes two parts: storm drain maintenance and storm drain inlet labels. Implementation the Storm Drain Operation and Maintenance program is required by the effective date of this Order. This is consistent with 40 CFR 122.26(d)(2)(iv)(A)(1) which states the storm water program management shall include “a description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from [MS4s].

This Order includes requirements for each Co-Permittee to implement a Street and Road Maintenance program. This program includes requirements for street sweeping and road reconstruction. This requirements is consistent with 40 CFR 122.26(d)(2)(iv)(A)(3) which states that the Co-Permittee must include “practices for operating and maintaining public streets, roads highways and procedures for reducing the impact on receiving water of discharges form [MS4s].”

Streets and roads are a significant source of pollutants in storm water discharges. Trash, organic debris, and sediments accumulate on streets, usually within one foot of the curb. If not properly maintained, these pollutants will be conveyed via the MS4 to receiving water. Additionally, these bulky items can accumulate within the MS4 system and cause the improper operation of the system, possibly creating flood conditions. Sediments can often be impacted with pollutants, such as heavy metals, and may contribute an increase of pollutants in receiving water. Physical removal of these pollutants is key in reducing pollution from entering receiving water.

There are two preferred methods at addressing removal of pollutants that accumulate on streets: street sweeping or catch basin cleaning. Of the two, street sweeping is usually the more economically feasible method for reducing pollution that has accumulated on streets. Catch basin cleaning, while an effective BMP at removing pollutants that have entered the MS4 from streets, may be technically infeasible and cost prohibitive. Street sweeping can be conducted in a relatively short time frame, with minimal staff needed. Catch basin cleaning is more time intensive and thus creates additional staff resources needed to complete the BMP. The City of Santa Rosa is able to conduct street sweeping within the entire city limits in one month. To clean out all catch basins within the jurisdictional boundary takes multiple years to complete. Therefore, this Order is focusing on each municipality developing a robust street sweeping program as a method for removing accumulated pollutants from curbed streets.

Each Co-Permittee is required to develop and implement a street sweeping program. The program will need to be proposed for Executive Officer approval. The program will need to include routine street sweeping at all streets with a curb and gutter within the Co-Permittees jurisdictional boundary and will need to include protocols to maximize street sweeping effectiveness.

There are many factors to consider in developing an effective street sweeping program. Each Co-Permittee will need to consider protocols necessary to achieve an effective street sweeping program. The following protocols will need to be evaluated, proposed, and implemented as appropriate:

- a.** Frequency: Co-Permittees will need to evaluate the optimal frequency in which to conduct street sweeping activities to prevent pollutants from entering the MS4 system to meet the maximum extent practicable standard. High priority areas, like high traffic areas and high litter areas will likely need more frequent sweeping to effectively prevent pollutants from entering the MS4, then in lower priority areas.

- b.** Additional sweeping efforts will be needed after special community events that are likely to increase trash loads. The street sweeping plan will need to identify the events that will trigger additional sweeping. Special events to consider are events like farmers markets, parades, community gatherings like outdoor concerts or movie nights, or any other outdoor event which will result in people gathering in one area in a volume larger than typical.
- c.** Timing: Co-Permittees will need to develop a street sweeping schedule that includes the most optimal time of day to sweep. Consideration should be given to the likelihood of vehicles being parked on the street at different times during the day. For example, sweeping a commercial or industrial area in early morning hours may be more effective because there are likely to be less cars parked on the street before (or after) business hours. Vice-versa, sweeping residential neighborhoods in the afternoons may be more effective because there are likely to be fewer vehicles parked on the streets during the regular business/school hours.
- d.** Finally, the Co-Permittees will need to propose an education and outreach strategy to notify residents of the street sweeping schedule. The notification should also include recommendations to residents on how to help make street sweeping effective, like not parking on the street on the designated street sweeping day(s). Educating the residents on street sweeping days will hopefully engage the community into voluntarily participating to help make the most out of the program.

Each Co-Permittee will need to record the amount of debris collected with street sweeping activities. Having a record of the amount of debris collected will record the amount of pollutants prevented from entering the MS4 system. This is to establish a record of the amount of debris prevented from entering the MS4.

Each Co-Permittee will need to submit a proposed street sweeping program no later than the end of the second year of the effective date of this Order. The program will be required to be implemented within 60 days from the dated of the Regional Water Board's Executive Officers approval.

Each Co-Permittee shall maintain their existing routine street sweeping activities during the development of the new street sweeping plan. The intent of developing a plan is to improve the current approach to street sweeping. Street sweeping will still be required during the planning stage and will be updated upon implementation of the approved plan. The two year planning window is not intended to halt street sweeping activities until a new plan is in place.

The Road Reconstruction program includes BMPs for road reconstruction activities including roadbed or street paving, repaving, patching, digouts, or resurfacing roadbed surfaces. This section must be implemented by the effective date of the Order.

This Order addresses a self-waiver provision each Co-Permittee may invoke in the event of conducting essential repairs in the event of an emergency. In the event the self-waiver is invoked, the Co-Permittee must submit a notice to the Regional Water Board

with an explanation of the circumstances and measures taken to reduce the threat to water quality within 10 business days after the emergency has passed.

This Order includes requirements that each Co-Permittee provide training to employees and contractors that have job duties or participate in activities that have the potential to affect storm water quality. The training should promote a general understanding of the potential for activities to pollute storm water and include information on the identification of opportunities to require, implement and maintain BMPs associated with the activities they perform. Training topics should include instruction on the potential for pesticide related surface water toxicity, the proper use, handling and disposal of pesticides and proper application in regards to reducing or eliminating the potential for pesticides to runoff in storm water or non-storm water discharges.

The requirements in the Public Agency and Activities Program have been retained from Order. No. 2009-0050, with the following changes:

The requirement to develop a public facility inventory is new to this Order. However, the requirement to implement BMPs and control pollution from these facilities has been retained from the Order No. R1-2009-0050. Having the Co-Permittees develop an inventory of the facilities is a requirement to assist Co-Permittees with determining the facilities which will need BMPs and source control measures to comply with this Order. This requirement also assists Regional Water Board staff in determining compliance with the Public Agency Activities Program portion of this Order. The facility inventory will provide the Regional Water Board with an official list of facilities subject to this Order, thus allowing Regional Water Board staff to focus inspections at applicable facilities and leaving no ambiguity as to the facilities regulated under this Order.

The requirement to develop storm water facility pollution prevention plans and conduct facility inspections is new to this Order. As explained above, this requirement has been added to have a clear expectation of how storm water is managed at facilities considered to be potential sources of pollutants to storm water runoff. Inspections are needed to confirm the effectiveness of BMPs and update the facility pollution prevention plans on a regular basis.

Order No. R1-2009-0050 included requirements on public project to obtain coverage under the Construction General Permit for applicable projects. This requirement has been retained but has been moved to the Construction Development Program in an effort to keep all construction requirements of this Order in one section. The same is true for areas of Order No. R1-2009-0050 related to post-construction requirements at public projects.

The requirement for catch basin cleaning has been removed from this Order and has been placed with a more robust street sweeping program. Order No. 2009-0050 required catch basins to be prioritized and cleaned at a given frequency based on the priority. However, the Order defined catch basins needing cleaning as “storm drain inlets that include a sump to trap debris.” The City of Santa Rosa and County of Sonoma made the determination that there are no catch basins within their jurisdictional boundaries meet this definition. Additionally, the smaller municipalities confirmed

having very few catch basins meeting this definition. Therefore, the requirement is not relevant to the MS4s regulated by this Order and therefore, not an effective BMP. By focusing on street sweeping, Co-Permittees can focus resources on preventing debris from entering the MS4 system.

This Order removed the explicit requirement to “protect debris and material stockpiles from rain or wind erosion with a cover or sediment barrier.” The BMP to cover stockpiles is included in the BMP Table 10 in the “General BMPs” section of the Table.

The requirement to implement a spill response plan has been retained from Order 2009-0050, but moved to the Illicit Discharge/Illicit Connection section of the Order. This is to keep similar requirements together in one section of this Order.

7. Illicit Connections and Illicit Discharges Elimination Program

This Order requires Co-Permittees to develop and implement an Illicit Connection and Illicit Discharge (IC/ID) Elimination Program to detect, investigate, and eliminate IC/ID to the MS4. This requirement is consistent with 40 CFR section 122.26(d)(2)(iv)(B) which states that each Co-Permittee must implement a program to “detect and remove (or require the discharge to the [MS4] to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.” The IC/ID program includes the components identified below.

Each Co-Permittee is required to maintain an up to date map of all the outfalls within the MS4 which discharge to receiving water. As defined in 40 CFR section 122.26(b)(9) an outfall means a “point source...at the point where a [MS4] discharges to waters of the United States and does not include open conveyances connecting two [MS4s] or pipes, tunnels, or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States.” Outfalls meeting this definition must be included on the map, as well as all receiving water bodies receiving a direct discharge from outfalls. Co-Permittees are only required to map outfalls which fall into their jurisdictional boundary.

An accurate outfall map is an important component in an effective storm water management program. The outfall map is useful in investigating illicit discharges, especially in identifying the fate of an illicit discharge. Outfall maps are a quick and reliable resource to determine to flow path of a non-storm water discharge once it enters into the MS4. This information can be critical at addressing non-storm water flows and minimizing their impact to receiving water. Similarly, if an outfall is identified as discharging a non-storm water flow, the mapping system can be used to investigate possible source locations of the discharge and thereby eliminate any on-going discharge.

The City of Cotati, the City of Healdsburg, the City of Rohnert Park, the City of Sebastopol, the City of Windsor, and the City of Ukiah were required to complete an outfall map as required in the previous Phase II MS4 permit. Based on inspections of these municipalities during the 2012-2013 fiscal year, these municipalities have

completed this task. Therefore, the requirement in this Order would be for this group to maintain their maps, as needed.

The City of Santa Rosa and the County of Sonoma were not required to complete an outfall map under the R1-2009-0050 Order. However, the City of Santa Rosa has all of their outfalls mapped and would also only need to keep the map updated during this permit term. The status of the County of Sonoma’s outfall mapping is unknown. This requirement does not apply to the SCWA because they do not own outfalls.

The City of Cloverdale will need to complete this task by July 1, 2017. This date has been established based on their implementation plan.

This Order requires all Co-Permittee to conduct a field screening of all outfalls which are 36 inches or greater or are 50 years older in age. This requirement is consistent with 40 CFR 122.26(d)(2)(B)(2) which states that each Co-Permittee’s storm water management program must include procedures to conduct on-going field screening activities.

The intent of this requirement is to screen outfalls for non-storm water flows/illicit discharges, investigate sources, determine if the discharge is allowable under a non-storm water BMP plan and abate when appropriate. Field screening is the most effective way at identifying prohibited non-storm water flows and is therefore an important part of a storm water management program. Because the intent of this screening is to find non-storm water flows, screening inspections must take place at least 72 hours after a rain event. Follow up is required for any outfall that is found to be discharging a non-storm water flow/illicit discharge and is detailed in the Illicit Discharge Source Investigation and Elimination section of this Order.

The City of Santa Rosa and the County of Sonoma were required to complete this task under Order No. 2009-0050 by October 1, 2014. Outfalls screened during the previous Order do not need to be screened again during the terms of this Order, with one exception. Re-inspection is required under this Order for those outfalls that were screened in the previous permit and found to be discharging a non-storm water flow other than that of groundwater, surface water, a natural spring, wetland or other natural feature not prohibited to be discharged. For example, the City of Santa Rosa found 79 outfalls to be discharging irrigation water during the previous Order. Follow up is appropriate to ensure the dischargers are not on-going and have been appropriately abated.

The requirement to inspect all applicable outfalls must be completed by the fourth year of the permit. This will give Co-Permittees adequate time to investigate outfalls and report on findings prior to the renewal of this Order.

This Order includes requirements to address illicit discharges and illicit connections including investigation, source identification, abatement, and tracking. This requirement is consistent with 40 CFR 122.26(b)(2)(B)(3) which states that Co-Permittees must have a procedure to “investigate portions of the [MS4] that...indicate a

reasonable potential of containing illicit discharges or other sources of non-storm water.”

The terms illicit discharge and illicit connection are defined as followed:

An illicit discharge is defined by 40 CFR 122.26(b)(2) as “any discharge to an [MS4] that is not composed entirely of storm water except discharges pursuant to a NPDES permit and discharges resulting from firefighting.”

An illicit connection is any man-made conveyance that is connected to the storm drain system without a permit, excluding roof drains and other similar type connections. Examples include channels, pipelines, conduits, inlets or outlets that are connected directly to the storm drain system.

While an illicit connection can result in an illicit discharge, the requirements in this Order to address an illicit connection are different than that of an illicit discharge. Upon discovery of an illicit discharge, each Co-Permittee has one business day to respond, where discovery of a suspected illicit connection needs to be responded to within 21 days. Additionally, spills must be responded to in a shorter time frame (24 hours) if the incident is an immediate threat to public health or the environment. Spills requiring containment must be responded to within 2 hours of the incident being reported.

This Order requires each Co-Permittee to have a spill response plan. This is consistent with 40 CFR 122.26(d)(2)(iv)(B)(4), which states that Co-Permittees are required to have procedures “to prevent, contain, and respond to spills that may discharge into the [MS4].” This Order requires the Co-Permittee to coordinate with appropriate departments and agencies responsible for spill response and response time requirements as described above.

This Order also includes requirements for reporting spills to appropriate departments and agencies, like the County Health Department or the California Emergency Management Agency (CalEMA). Co-Permittees are required to report a spill or illicit discharges/non-storm water discharges which has an impact to surface water to the Regional Water Board. Notification to CalEMA is sufficient notification to the Regional Water Board.

This Order requires each Co-Permittee to establish and maintain a phone hotline to receive public reports of illicit discharges, non-storm water discharges, and spills that may be discharging into the MS4. This requirement is consistent with 40 CFR 122.26(b)(2)(B)(5), which states each Co-Permittee must “promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from [MS4].”

The requirements for the Illicit Connections and Illicit Discharges Elimination Program in this Order have been retained from Order No. R1-2009-0050 with the following changes:

Order No. R1-2009-0050 required the Co-Permittees to map or document all permitted connections to their MS4. This requirement has been removed from this Order. During the course of the R1-2009-0050, the mapping or documenting of permitted connections did not provide a direct benefit to the storm water program. However, this Order includes a requirement to map all outfalls. This effort will provide more benefit to the Co-Permittees. As explained above, an up to date and accurate outfall map is a valuable resource for the protection of water quality in spill response.

Order No. R1-2009-0050 included requirements for screening illicit connections and non-storm water flows. The general intent of this requirement was been retained in this Order, but the requirements have been expanded to clarify the field screening requirements. The includes requirements to screen for dry weather flows at least 72 hours after a rain event and requirements that must be followed when dry weather flows are identified during field screening.

This Order includes a new requirement to assess receiving water conditions during the investigation of an illicit discharge. Assessing receiving water conditions is a necessary function to understand the magnitude of a spill, non-storm water discharge, or illicit discharge. This also facilitates the Co-Permittee to initiate abatement measures needed at the receiving water, as well as make an assessment of any impacts to receiving water quality as a result of the discharge. Additionally, this Order provides clarification to notify the Regional Water Board directly in the event of an illicit discharge that causes an impact to receiving water.

The Illicit Connections and Illicit Discharge Elimination Detection Program now includes the requirement for public reporting of non-storm water discharges and spills. This requirement is retained from Order No. 2009-0050, but has been moved to this section of the Order from the PIPP section. The change was made in an effort to address all requirements associated with illicit discharges and spills in one section of the Order.

8. Special Projects

a. Inorganic Pollutants

The City of Santa Rosa and the County of Sonoma are responsible for developing and implementing a workplan to address copper, lead, and zinc in storm water runoff. The need for this requirement is based on the findings of these pollutants in storm water runoff. During fiscal year 2012-2013, the City of Santa Rosa collected outfall samples from outfall sampling locations in both wet and dry weather conditions for inorganic analysis. Results for copper, lead, and zinc were reported above water quality objectives in some wet weather samples. For dry weather, these constituents were reported below water quality objectives. Thus, demonstrating these pollutants are being mobilized during rain events above water quality objectives.

Order No. R1-2009-0050 and this Order prohibit the discharge from an MS4 which causes or contributes to an exceedance of water quality standards. When such an exceedance is reported, the Co-Permittee is required to initiate the iterative process

to select and deploy alternative BMPs to reduce or elimination the exceedance to the maximum extent practicable. The requested study is intended to initiate the iterative process and allow the Co-Permittees to propose and implement alternative BMPs to reduce and/or eliminate this exceedance.

b. Pathogens

Like inorganics, pathogens have been reported in outfall monitoring and receiving water monitoring samples at elevated levels and above water quality standards. The designated Co-Permittees are required to develop a workplan to address pathogens above water quality standards. Like inorganics, this requirement is initiating the iterative process to select and implement alternative BMPs to reduce and/or elimination pathogens in storm water runoff to the maximum extent practicable.

c. Sediment

Outfall monitoring requirements report elevated levels of sediment during wet weather sampling events. The designated Co-Permittees are required to address the increase in sediment during wet weather, similar to that of inorganics and pathogens.

d. Trash

This Order requires each Co-Permittee to conduct an assessment of trash in receiving water either by jurisdictional boundaries or on a watershed wide scale. The objectives of the assessment is to establish baseline conditions of trash in receiving water, evaluate the quantity and type of trash found in receiving water, and identify the source of trash entering receiving water.

VIII. Reporting Requirements

Annual reporting requirements included in this Order are necessary to meet federal requirements and to evaluate the effectiveness and compliance of the Co-Permittees' programs. The annual reporting requirements are consistent with 40 CFR 122.42(c). The report shall include:

- A.** The status of implementing the components of the storm water management program that are established as permit conditions;
- B.** Proposed changes to the storm water management program that are established as permit condition; such proposed changes shall be consistent with § 122.26(d)(2)(iii) of this part;
- C.** 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;
- D.** A summary of data, including monitoring data, that is accumulated throughout the reporting year;
- E.** Annual expenditures and budget for year following each annual report;
- F.** A summary describing the number and nature of enforcement actions, inspections, and public education programs; and

G. Identification of water quality improvements or degradation.”

Water Code section 13267 provides that “the regional board may require that any person who has discharged [...] shall furnish, under penalty of perjury, technical or monitoring reports which the regional board requires.”

The Regional Water Board must assess the reports to ensure that the Co-Permittees’ programs are adequate to assess and address water quality. The reporting requirements can also be useful tools for the Co-Permittees to review, update, or revise their programs. Areas or issues which have received insufficient efforts can also be identified and improved.

IX. Monitoring and Reporting Program

Section 308(a) of the federal Clean Water Act and sections 122.41(h), (j-l), 122.44(i), and 122.48 of Title 40 of the Code of Federal Regulations 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 pursuant to 40 CFR section 122.26(d)(2)(i)(F) & (d)(2)(iii)(D, 122.42(c).). California Water Code 13383 further authorizes the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This Monitoring and Reporting Program (MRP) establishes monitoring, reporting, and recordkeeping requirements that implement the federal and State laws and/or regulations.

A. Interim Monitoring Requirements

This Order requires the County of Sonoma to continue to implement the outfall mass chemical monitoring requirements as described in Monitoring and Reporting Program Order No. R1-2009-0050, section A.1. The purpose of the outfall mass chemical monitoring requirements is to characterize the discharge of storm water runoff entering receiving water from the MS4 system and to determine compliance with water quality standards.

The County of Sonoma did not meet these objectives due to the lack of sampling completed during the course of Order No. R1-2009-0050. Therefore, the County of Sonoma is required to continue to conduct the outfall mass chemical monitoring to provide the data needed to meet the objectives. The County of Sonoma shall conduct monitoring until the Regional Water Board Executive Officer provides notification that the sampling may be discontinued.

B. Monitoring Workplan

The Co-Permittees are responsible for developing a workplan to propose the scope of work to conduct the outfall monitoring, receiving water monitoring, chronic toxicity testing, and the bioassessment studies. The workplan is required to have four main elements: project management, data generation and acquisition, assessment and oversight, and data validation and usability. These elements are consistent with U.S.EPA requirements for a Quality Assurance Project Plan (QAPP). While the Co-Permittees are not required to develop a QAPP for U.S. EPA approval, they are required to develop the four main elements of a QAPP in order to meet the requirements of having a complete workplan. Co-Permittees

are encouraged to use the specific components within each of the four elements as guidance in developing the workplan.

As part of the workplan, the Co-Permittees have the responsibility to develop the outfall and receiving water monitoring program. The Co-Permittees are tasked with proposing the number of outfalls to be sampled and the location. The MRP does specify that outfalls shall be selected based on a variety of land use drainage areas including residential, commercial, industrial, and downtown, at a minimum. It is up to the discretion of the Co-Permittees to select the number of outfalls to be sampled and the frequency at which they will be sampled, as long as the rationale for these determinations is supportive of obtaining the objectives. This allows the Co-Permittees to develop a technical and economically feasible plan. The Co-Permittees are also required to propose the sampling locations and frequency of chronic toxicity monitoring, and the locations and timing of the bioassessment studies.

C. Outfall and Receiving Water Monitoring

Outfall and receiving water monitoring is required for the Co-Permittees whose jurisdictional boundaries are within the Laguna de Santa Rosa Watershed. Monitoring is focused in this watershed due to the nature of the Laguna de Santa Rosa's impairments and the urbanized properties of the watershed characteristics.

Objectives of outfall monitoring include characterization of storm water discharge during both wet and dry weather conditions and to assess compliance with water quality standards. Additionally, data will be collected with the intention of calculating nutrient loads in line with the TMDL.

Constituents for outfall and receiving water sampling include total suspended solids, biochemical oxygen demand, total nitrogen, total phosphorus and ammonia, consistent with the impairment of nutrients in the Laguna de Santa Rosa; lead, copper, and zinc, consistent with the findings of outfall monitoring; and e.Coli, total Bacteroides and human-host Bacteroides, consistent with the impairment of pathogens in the Russian River. Analysis of these constituents are required in all outfalls twice a year during wet weather flow and twice a year during dry weather flow for each year monitoring is required.

Samples from outfalls are also required to be sampled once during the permit term in wet weather flows and once in dry weather flow for inorganics and pesticides. The specific inorganics and pesticides required for analysis are priority pollutants identified in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2005).

Outfall monitoring for inorganic constituents was conducted as part of the MRP of Order No. R1-2009-0050. Constituents reported above water quality standards (copper, lead, zinc) are now required as part of routine monitoring. Routine monitoring of the remaining constituents is not warranted. However, periodic sampling of these constituents is necessary to confirm the levels are not changing.

Monitoring for pesticides was not required as part of the MRP of Order No. R1-2009-0050. Outfalls are now required to be sampled once during the permit term to characterize the

discharge for select pesticides. Additional sampling requirements may result from sample results that demonstrate pesticides above water quality standards.

Wet weather sampling procedures are required consistent with 40 CFR section 122.21(g)(7)(ii), which include requirements for flow-weighted composite sampling, qualifying storm events, and timing of sampling. For the purpose of this Order, the Regional Water Board has changed sampling to be conducted during storm events of 0.25 inches. Co-Permittees have demonstrated 0.10 inches is not feasible and have suggested this alternative storm event. This storm event has been retained from Order No. 2009-0050.

Receiving water is required for parameters similar to outfall monitoring. The sampling is intended to assess if storm water runoff is causing or contributing to an exceedance of water quality standards in receiving water. The Co-Permittees are encourage to pair receiving water monitoring with outfall monitoring locations to maximize the potential to meet objectives of the monitoring requirements.

D. Chronic Toxicity Monitoring

Chronic toxicity monitoring is required within the Laguna de Santa Rosa with the objective of assessing if storm water and non-storm water flows are causing or contributing to chronic toxicity in receiving waters. The presence of chronic toxicity shall be determined as specified in EPA's *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms* (U.S. EPA Report No. EPA-821-R-02-013, 4th edition or subsequent editions).

The MRP requires the Co-Permittees to address toxicity identified in receiving waters and implement a mitigation plan if it is confirmed that storm water and/or non-storm water discharges are contributing or causing toxicity.

E. Bioassessment

The City of Cotati, the City of Rohnert Park, the Town of Windsor, the City of Sebastopol and the County of Sonoma are responsible for conducting a bioassessment study within their own jurisdictional boundary. The City of Santa Rosa conducted a bioassessment study in 2012 at creek reaches within their jurisdictional boundary. The City of Santa Rosa will be conducting further studies based on the results of that study. Bioassessment efforts need to be expanded beyond the city limits of Santa Rosa and therefore, the listed Co-Permittees are being required to conduct bioassessment on one creek reach within their jurisdictional boundary.

The Co-Permittees shall use bioassessment standard operating procedures (SOPs) developed by the Surface Water Ambient Monitoring Program (SWAMP). This includes SOPs for Benthic Macroinvertebrate Samples and Stream Algae Samples.

F. Nutrient Study

The City of Santa Rosa is required to conduct a special sampling event of nutrients in receiving water at Brush Creek and Lower Santa Rosa Creek. The City is being required to

conduct this special assessment based on the results of the 2012 bioassessment study, which noted a potential for excessive nutrients in the creek reaches studies.

G. Best Management Practices Effectiveness Studies

A critical objective in the storm water program is determining the effectiveness of BMPs deployed to reduce pollution in storm water runoff. Outfall and receiving water monitoring is focused on data characterization and water quality standards. The Co-Permittees are now being required to develop a component of the monitoring program to assess BMP effectiveness. BMPs being studied include lawn care and lawn watering conservation BMPs, permanent post-construction BMPs, and the effectiveness of the Hydromodification Control Plan.

Over-irrigation continues to be a problem in urban settings. While it is an allowable discharge in the non-storm water BMP plan, it is only allowable in infrequent, isolated incidents. Chronic over-irrigation is not an allowable discharge. Pollutants of concern related to over-irrigation include chlorinated water, nutrients from fertilizers, pesticides, and sediment. It is important to study the BMPs related to the prevention of over-irrigation for effectiveness. Types of BMPs to be studied include outreach and education on preventing over-irrigation, “cash-for-grass” an incentive program to replace lawn with native plants, proper fertilizer and pesticide application, and lawn watering conservation practices.

The Co-Permittees will also need to study permanent post-construction BMPs for effectiveness. This Order places a priority on LID features. The Co-Permittees shall develop a study to confirm the effectiveness of these features. Due to the priority of LID features, it is important to study their effectiveness and use the data to redefine the program in future Orders.

The Co-Permittees will also need to develop an effectiveness study of the Hydromodification Control Plan. This assessment should include monitoring of receiving water in an area where the Hydromodification Control Plan will be implemented. The study should include a method to assess receiving water in the long term, and to establish if hydromodification is minimized by BMPs implemented under the Hydromodification Control Plan.