

Co-Permittees are required to update and expand their storm water runoff management programs in order to improve their efforts to reduce the contribution of pollutants in storm water runoff to the MEP and meet water quality standards.

It is the Regional Water Board's responsibility to evaluate the proposed programs and specific BMPs to determine what constitutes MEP, using the above guidance and the court's 1994 decision in NRDC v. California Department of Transportation, Federal District Court, and Central District of California. The federal court stated that a Co-Permittee must evaluate and implement BMPs except where:

- (a) other effective BMPs will achieve greater or substantially similar pollution control benefits;
- (b) the BMP is not technically feasible; or
- (c) the cost of BMP implementation greatly outweighs the pollution control benefits.

In the absence of a proposal acceptable to the Regional Water Board, the Regional Water Board will define MEP by requiring implementation of additional measures by the Co-Permittees.

The Co-Permittees' continual evolution in meeting the MEP standard is expected to achieve compliance with water quality standards. U.S.EPA has consistently supported this expectation. In its Interim Permitting Approach for Water Quality-Based Effluent Limitations (WQBELs) in Storm Water Permits, U.S.EPA states "the interim permitting approach uses best management practices (BMPs) in first-round storm water permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for attainment of water quality standards."²³

U.S.EPA reiterated its position in 1999, when it stated regarding the Phase II municipal storm water regulations that "successive iterations of the mix of BMPs and measurable goals will be driven by the objective of assuring maintenance of water quality standards" and "EPA anticipates that a permit for a regulated small MS4 operator implementing BMPs to satisfy the six minimum control measures will be sufficiently stringent to protect water quality, including water quality standards [...]."²⁴

Best Management Practices

The State Water Board finds in its 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

²³ Federal Register/Vol. 61, No. 166/August 26, 1996/p. 43761.

²⁴ Federal Register/Vol. 64, No. 235/Wednesday, December 8, 1999/Rules and Regulations/p. 68753-68754.

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:

- (a) Pollution Prevention – implementation of practices that use or promote pollution free alternatives;
- (b) Source Control – implementation of control measures that focus on preventing or minimizing storm water runoff from contacting pollution sources; and
- (c) Treatment Control – implementation of practices that require treatment of polluted runoff either onsite or offsite."²⁵

Pollution prevention, the reduction or elimination of pollutant generation at its source, is an essential aspect of BMP implementation. Fewer pollutants are available to be washed from urban areas when the generation of pollutants by urban activities is limited. Thus, pollutant loads in storm water discharges are reduced from these areas. In addition, there is no need to control or treat pollutants that are never generated. Furthermore, pollution prevention BMPs are generally more cost effective than removal of pollutants by treatment facilities or cleanup of contaminated media.^{26,27}

In the Pollution Prevention Act of 1990, Congress established a national policy that emphasizes pollution prevention over control and treatment. Water Code section 13263.3(a) also supports pollution prevention, stating "The Legislature finds and declares that pollution prevention should be the first step in a hierarchy for reducing pollution and managing wastes, and to achieve environmental stewardship for society. The Legislature also finds and declares that pollution prevention is necessary to support the federal goal of zero discharge of pollutants into navigable waters."

U.S.EPA also supports the utilization of a combination of BMPs to address pollutants in storm water runoff. For example, U.S.EPA has found there has been success in addressing illicit discharge related problems through BMP initiatives like storm drain stenciling and recycling programs, including household hazardous waste special collection days.²⁸

²⁵ State Water Board, 1994. Storm water runoff Technical Advisory Committee Report and Recommendations: Nonpoint Source Management Program.

²⁶ Devinny, J.S. et al. 2004. *Alternative Approaches to Stormwater Quality Control*. Prepared for the Los Angeles Regional Water Quality Control Board. Prepared for the California State Water Resources Control Board by the Office of Water Programs California State University, Sacramento. Available on-line at: <http://www.owp.csus.edu/research/npdes/>

²⁷ Schueler, T.R., 2000. Center for Watershed Protection. Assessing the Potential for Urban Watershed Restoration, Article 142.

²⁸ 92 U.S.EPA, 1999. 40 CFR Parts 9, 122, 123, and 124 National Pollutant Discharge Elimination System - Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges. 64 FR 68728.

This Order requires the use of specific 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 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 an alternative BMP.

Economic Issues

The California Supreme Court ruled that although Water Code section 13263 requires the Water Boards to consider the factors set forth in Water Code section 13241 when establishing waste discharge requirements, when issuing an NPDES permit, the Water Boards may not consider the factors to justify imposing pollutant restrictions that are less stringent than the applicable federal regulations require (*City of Burbank v. State Water Resources Control Bd.*, 35 Cal.4d, 618 (2005)). However, when the pollutant restrictions in an NPDES permit are more stringent than federal law, Water Code section 13263 requires that the Water Boards consider the factors described in Water Code section 13241. The requirements in this Order may be explicit or more specific than those enumerated in federal regulations under 40 CFR122.26 or in U.S.EPA guidance. However, the requirements have been prescribed to be consistent with the federal statutory mandates described in CWA § 402(p)(3)(B)(ii) and (iii) and the related federal regulations and court decisions. Consistent with federal law, all of the conditions in this Order could have been included in a permit adopted by U.S.EPA in the absence of the in lieu authority of California to issue NPDES permits. These requirements are necessary to reduce the discharges of pollutants to the maximum extent practicable, and to attain water quality standards. Hence they are not more stringent than federal law.

Economic discussions of storm water runoff management programs tend to focus on the significant costs incurred by municipalities in developing and implementing the programs. However, when considering the cost of implementing storm water runoff programs, it is also important to consider the alternative costs incurred by not fully implementing the programs, as well as the benefits which result from program implementation. For instance, unhealthy surface water quality conditions negatively affect residents, tourists, and related portions of the Sonoma County economy. It is very difficult to ascertain the true cost of implementation of the Co-Permittees' storm water runoff management programs because of inadequate detail in reporting program costs by the Co-Permittees. Despite these problems, efforts have been made to identify storm water runoff management program costs, which can be helpful in understanding the costs of program implementation.

Estimates of Phase I Storm Water Program Costs

U.S.EPA, the California Regional Water Boards, and the State Water Board have attempted to evaluate the costs of implementing municipal storm water programs. The

assessments demonstrate that true costs are difficult to ascertain and reported costs vary widely. Nonetheless, they provide a useful context for considering the costs of requirements within draft Order No. R1-2009-0050. In addition, reported fiscal analyses tend to neglect the costs incurred to municipalities when storm water runoff is not effectively managed. Such costs result from pollution, contamination, nuisance, and damage to ecosystems, property, and human health.

In 1999, U.S.EPA reported on multiple studies it conducted to determine the cost of storm water runoff management programs. A study of Phase II municipalities determined that the annual cost of the Phase II program was expected to be \$9.16 per household. U.S.EPA also studied 35 Phase I municipalities, finding costs to be \$9.08 per household annually, similar to those anticipated for Phase II municipalities²⁹.

A study on program cost was also conducted by the California Regional Water Quality Control Board, Los Angeles Region (LARWQCB), where program costs reported in the municipalities' annual reports were assessed. The LARWQCB estimated that average per household cost to implement the MS4 program in Los Angeles County was \$12.50.

The State Water Board also recently commissioned a study by the California State University, Sacramento to assess costs of the Phase I MS4 program. This study includes an assessment of costs incurred by Phase I MS4 permittees throughout the State to implement their programs. Annual cost per household in the study ranged from \$18-46, with the City of Encinitas in San Diego County representing the upper end of the range.³⁰ The City of Encinitas's program cost can be considered as the high end of the spectrum for storm water runoff management program costs because the City has a consent decree with environmental groups regarding its program, and City of Encinitas has received recognition for implementing a superior program.

It is important to note that reported program costs are not all attributable to compliance with MS4 permits. Many program components, and their associated costs, existed before any MS4 permits were ever issued. For example, street sweeping and trash collection costs cannot be solely attributable to MS4 permit compliance, since these practices have long been implemented by municipalities and serve additional purposes. Therefore, true program cost resulting from MS4 permit requirements is some fraction of reported costs. The California State University, Sacramento study found that only 38 percent of program costs are new costs fully attributable to MS4 permits. The remainder of the program costs were either pre-existing or resulted from enhancement of pre-existing programs.

²⁹ Federal Register/Vol. 64, No. 235/Wednesday, December 8, 1999/Rules and Regulations. p. 68791-68792.

³⁰ State Water Board, 2005. NPDES Stormwater Cost Survey. p. ii.

Other Economic Considerations

Economic considerations of storm water runoff management programs cannot be limited only to program costs. Evaluation of programs requires information on the implementation costs and information on the benefits derived from environmental protection and improvement.³¹ Attention is often focused on program costs, but the programs must also be viewed in terms of their value to the public.

For example, household willingness to pay for improvements in fresh water quality for fishing and boating has been estimated by U.S.EPA to be \$158-210.³² This estimate can be considered conservative, since it does not include important considerations such as marine waters benefits, wildlife benefits, or flood control benefits. The California State University, Sacramento study corroborates U.S.EPA's estimates, reporting annual household willingness to pay for statewide clean water to be \$180.³³

The effect of storm water runoff on receiving waters can also influence the value of real estate in Sonoma County. Real estate marketing often includes access information to rivers, streams, and the ocean. This demonstrates the added value of healthy aquatic environments to property values. The real estate industry recognizes that home buyers are willing to pay for access to clean water environments. The ability to market water-based recreational activities is dependent on healthy water quality conditions.

Another important way to consider storm water runoff management program costs is to consider the implementation cost in terms of costs incurred by not improving the programs. Storm water runoff has been found to cause illness in people recreating in water near storm drains. Storm water runoff and its impact on receiving waters also affect tourism. Current waters impaired on the CWA 303d list as well as proposed draft listings for waters in Sonoma County, beach closures, and algae blooms are all likely to have a negative impact on recreational use of surface waters and on tourism.

Finally, it is important to consider the benefits of storm water runoff management programs in conjunction with their costs. A recent study conducted by the University of Southern California and University of California, Los Angeles assessed the costs and benefits of implementing various approaches for achieving compliance with the MS4 permits in the Los Angeles Region. The study found that non-structural systems would cost \$2.8 billion but provide \$5.6 billion in benefit. While these findings are not for the Sonoma County area, such cost/benefit analyses are still useful in evaluating the costs and benefits of storm water programs in our area. Such findings are corroborated by

³¹ Ribaudo M.O. and D. Heelerstein. 1992, *Estimating Water Quality Benefits: Theoretical and Methodological Issues*. U.S. Department of Agriculture. Technical Bulletin No. 1808.

³² Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68793.

³³ State Water Board, 2005. NPDES Stormwater Cost Survey. P. iv.

U.S.EPA, which found that the benefits of implementation of its Phase II storm water rule would also outweigh the costs.³⁴

U.S.EPA Inspections

U.S.EPA contractors performed an inspection of the City of Santa Rosa's storm water programs on November 7 and 8, 2007. The contractors identified program deficiencies in the following areas: private construction; public construction; storm drain operation and maintenance; vehicle maintenance, material storage facilities, corporation yards management; and implementation of the post-construction treatment BMP guidance manual, BMP construction oversight, and maintenance and tracking of BMPs.

The conclusion of the inspection report³⁵ states, "[...] The information gathered during the inspection indicates that the City of Santa Rosa's MS4 program is being implemented, but that program element improvements are needed to ensure compliance. Based on the results of this inspection, additional routine inspections focusing on the Private Construction Element, Public Construction Activities Management, and SRA-SUSMP appear warranted."

U.S.EPA contractors performed an inspection of Sonoma County's and the Sonoma County Water Agency's storm water programs on November 27 and 28, 2007. The contractors identified program deficiencies in the following areas: private construction; public construction; storm drain operation and maintenance; vehicle maintenance, material storage facilities, corporation yards management; streets and road maintenance; illicit discharge detection and elimination; implementation of the post-construction treatment BMP guidance manual, BMP construction oversight, and maintenance and tracking of BMPs.

The conclusion of the inspection report states, "[...] The information gathered during the inspection indicates that the permittees' programs are being implemented, but that program element improvements are needed to ensure compliance."

Non-Storm Water Discharges

The discharge of wash waters, irrigation runoff, and other non-storm water flows as well as contaminated storm water may adversely impact public health and the environment. Pollutants contained in such discharges include organic material from food waste, oil and grease, sediment, pharmaceuticals, nutrients and toxic chemicals. Consistent with the requirement in 402(p)(3)(B)(ii) that municipalities effectively prohibit non-storm water discharges into storm sewers, this Order requires the proper use of BMPs to reduce or

³⁴ Federal Register/Vol. 64, No. 235/Wednesday, December 8, 1999/Rules and Regulations. P. 68791.

³⁵ Complete inspection reports are included in the file for review.

eliminate these discharges, and where they cannot be eliminated, decreases in the water quality impact of these discharges. The Co-Permittees are required to implement programs to eliminate or reduce the discharge of non-storm water discharges to the MS4 systems.

Currently, the Basin Plan prohibits discharges of waste during the dry season to surface waters. The Regional Water Board has adopted a Basin Plan amendment to allow certain non-storm water discharges (low threat discharges) to surface waters during the dry season, and shall be considered by the State Water Board, Office of Administrative Law and U.S.EPA. The Basin Plan amendment for low threat discharges requires that municipalities develop a BMP program for Executive Officer approval to eliminate or reduce non-storm water discharges in order for their non-storm water discharges to be compliant with the Basin Plan.

This Order requires the Co-Permittees to either prohibit non-storm water discharges to their MS4 or develop a BMP program for Executive Officer approval that minimizes or eliminates the volume and frequency of low threat discharges.

This Order includes a table (Table 1 in the Order) of potential low threat discharges that the Regional Water Board Executive Officer will consider for authorization based on a BMP program submitted by a Co-Permittee. The BMPs set out in Table 1 in the Order are to be applied during the discharge of authorized non-storm water discharges to the MS4 and require, where applicable, dechlorination of the discharge, prevention of erosion and control of sediment, and reduction of other harmful pollutants. The BMPs identified in Table 1 are technically feasible, practicable, and cost-effective. Consistent with Water Code section 13360, where an identified BMP may be impracticable on a particular site, this Order includes a provision to select and implement an alternative BMP.

Public Information and Participation Program (PIPP)

The implementation of an effective PIPP is a critical component of a storm water management program. While commercial and industrial facilities are traditionally subject to multiple environmental regulations and receive environmental protection guidance from multiple sources, the general public, in comparison, receives significantly less education in environmental protection. An effective PIPP is required because:

- (a) Activities conducted by the public such as vehicle maintenance, improper household waste materials disposal, improper pet waste disposal and the improper application of fertilizers and pesticides have the potential to generate a significant amount of pollutants that could be discharged in storm water.
- (b) An increase in public knowledge of storm water regulations, proper storage and disposal of household wastes, proper disposal of pet wastes and appropriate home vehicle maintenance practices can lead to a significant reduction of pollutants discharged in storm water.

The State Water Board Technical Advisory Committee "recognizes that education with an emphasis on pollution prevention is the fundamental basis for solving nonpoint source pollution problems."

U.S.EPA's Public Participation/Involvement Minimum Control Measure Fact Sheet finds that public education and outreach involves using effective mechanisms and programs, guided by a detailed outreach strategy, to engage the public's interest in preventing storm water pollution. A key factor to consider when developing a strategy is that the public has varying levels of background knowledge of both storm water management and their role in reducing storm water pollution. 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:

- (a) 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;
- (b) Shorter implementation schedules due to fewer obstacles in the form of public and legal challenges and increased resources in the form of residents and volunteers;
- (c) A broader base of expertise and economic benefits since the community can be a conduit to other valuable, and free, intellectual resources; and
- (d) Public involvement in the storm water program development process that makes important cross connections and builds relationships with other community and government programs.

The US EPA Phase II 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 and results in greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters."

This Order requires Co-Permittees to participate in watershed protection groups or citizen advisory groups or committees. 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 being discharged in storm water. A paper presented by David Galvin during the 4th National Conference Nonpoint Source and Stormwater Pollution Education Programs October 17-20, 2005, "Measuring Results from Outreach and Education Programs: Can We See Improvements Downstream?" states, "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 peoples' feet wet and their 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 an increase in media impressions and identifies the media venues. The intent of these changes is to provide an increase in public knowledge of storm water pollution prevention practices in an effective and cost effective manner. An increase in the frequency of storm water pollution prevention messages contributes to the likelihood that these messages will be remembered.

This Order requires outreach to ethnically diverse communities. According to U.S.EPA, (in Tailoring Outreach Programs to Minority and Disadvantaged Communities and Children Fact Sheet), "many residents of ethnically and culturally diverse communities don't speak English. English messages contained in public education outreach materials may not be effectively reaching a significant portion of some communities." The intent of this provision is to encourage behavior changes that reduce pollutants in storm water to a portion of the population who might otherwise be overlooked.

This Order requires the Co-Permittees to work with other regional and/or statewide agencies and associations such as the California Storm Water Quality Association (CASQA), to develop a corporate outreach program to educate and inform corporate and local managers about storm water regulations and BMPs. The intent of this provision is to ensure that management is aware of the potential impacts their business can have on storm water quality, facilitate compliance with storm water requirements, and give management sufficient guidance to train staff throughout their business on appropriate practices to mitigate the potential water quality impacts of their operations.

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 99-08 DWQ, NPDES No. CAS000002 (General Construction Permit) and the General Industrial Activities Storm Water Permit, State Water Board Order 97-03 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."³⁶

Industrial/Commercial Facilities Program

Industrial sites are significant sources of pollutants in storm water runoff. Pollutant concentrations and loads in runoff from industrial sites are similar or exceed pollutant concentrations and loads in runoff from other land uses, such as commercial or residential land uses. In an extensive review of storm water literature, the Los Angeles Regional Water Board found widespread support for the finding that "industrial and commercial activities can also be considered hot spots as sources of pollutants." It also

³⁶ 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.

found that "industrial and commercial areas were likely to be the most significant pollutant source areas" of heavy metals.

These findings are corroborated by U.S.EPA, which states in the preamble to the 1990 Phase I NPDES storm water regulations that "Because storm water from industrial facilities may be a major contributor of pollutants to municipal separate storm sewer systems, municipalities are obligated to develop controls for storm water discharges associated with industrial activity through their system in their storm water management program."

The Phase I NPDES storm water regulations require the Co-Permittees to "control through ordinance, permit, contract, order, or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity" (40 CFR 122.26(d)(2)(i)). In addition, it has been established that the MEP standard for the control of storm water runoff from new development projects includes incorporation of the Standard Urban Stormwater Mitigation Plan (SUSMP) requirements. Since the Co-Permittees must both control pollutants from industrial sites and meet the MEP standard for new development, it is appropriate to apply the SUSMP requirements to industrial sites. As with other land uses, LID site design, source control, and treatment control BMPs are needed at industrial sites in order to meet the MEP standard.

Studies indicate that facilities with paved surfaces subject to frequent motor vehicular traffic (such as strip malls, parking lots, commercial business parks, and fast food restaurants), or facilities that perform vehicle repair, maintenance, or fueling (automotive service facilities) are potential sources of POCs in storm water.

Identification of sources of pollutants in storm water runoff (such as municipal areas and activities, industrial and commercial sites and sources, construction sites, and residential areas), development and implementation of BMPs to address those sources, and updating ordinances and approval processes are necessary for the Co-Permittees to ensure that discharges of pollutants into and from its MS4 are reduced to the MEP. Inspections and other compliance verification methods are needed to ensure minimum BMPs are implemented. Inspections are especially important at high risk areas for pollutant discharges.

Source identification is necessary to characterize the nature and extent of pollutants in discharges and to develop appropriate BMPs. It is the first step in a targeted approach to storm water runoff management. Source identification helps detect the location of potential sources of pollutants in urban runoff. Pollutants found to be present in receiving waters can then be traced to the sites which frequently generate such pollutants. In this manner source inventories can help to target inspections, monitoring, and potential enforcement. This allows for limited inspection, monitoring, and

enforcement time to be most effective. U.S.EPA supports source identification as a concept when it recommends construction, municipal, and industrial source identification in guidance and the federal regulations.^{37,38}

The development of BMPs for identified sources will help ensure that appropriate, consistent controls are implemented at all types of industrial development areas. Co-Permittees must reduce the discharge of pollutants in storm water runoff to the maximum extent practicable. To achieve this level of pollutant reduction, BMPs must be implemented. Designation of minimum BMPs helps ensure that appropriate BMPs are implemented for various sources. These minimum BMPs also serve as guidance as to the level of water quality protection required. U.S.EPA requires development and implementation of BMPs for construction, municipal, commercial, industrial, and residential sources at 40 CFR 122.26(d)(2)(iv)(A-D).

This Order incorporates presumptive BMPs to reduce pollutants in storm water discharges from commercial and industrial sites to the MEP. The BMPs are identified in the Order in Table 4 (BMPs at Restaurants), Table 5 (BMPs at Automotive Service Facilities), Table 6 (BMPs at Retail Gasoline Outlets), and Table 7 (BMPs at Nurseries). 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 storm drainage system. The BMPs listed in Part 3 of the Order were selected based on the Water Boards' experience of regulating such sites since 1992 and referenced in the CASQA Storm Water Best Management Practice Handbook Commercial/Industrial Activity, which serves as an industry standard for California. The BMPs identified in the Tables are technically feasible, practicable, and cost-effective. Consistent with Water Code section 13360, where an identified BMP may be impracticable on a particular site, this Order includes a provision to select and implement an alternative BMP.

Specific categories of industries and businesses listed in this Order that are to be inspected by the Co-Permittees have the potential to discharge contaminated storm water and non-storm water into the MS4, which is an environmental threat because it can adversely impact public health and safety and the quality of receiving waters. For example, pretreatment program compliance inspections and audits performed in Sonoma County indicate that automotive service and food service facilities have discharged polluted storm water and non-storm water to the MS4s. The pollutants of concern in such runoff include oil and grease, toxic chemicals, trash and food waste. This Order contains specific inspection requirements and lists types of BMPs to be implemented at these sources.

³⁷ 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.

³⁸ 40 CFR 122.26(d)(2)(ii).

Planning and Land Development Program

Post-Construction BMPs and Land Development

Post-construction land development control requirements on new development and redevelopment offer the most cost-effective strategy to reduce pollutant loads to surface waters. Retrofit of existing development will be expensive and may be necessary with the development of TMDLs. Studies on the economic impacts of watershed protection indicate that storm water quality management has a positive or at least neutral economic effect while greatly improving the quality of surface waters.³⁹

The U.S.EPA storm water regulations at 40 CFR 122.26 require that pollutants in storm water be reduced to MEP. The U.S.EPA's definition is intentionally broad to provide maximum flexibility in MS4 permitting and to give municipalities the opportunity to optimize pollutant reductions on a program-to-program basis.⁴⁰ It is recommended that storm water BMPs be designed to manage both flows and water quality for best performance.⁴¹ It is equally important that treatment control BMPs once implemented are routinely maintained.

Financing the MS4 program offers a considerable challenge for municipalities. A proven successful financing mechanism is the establishment of a storm water utility.⁴² Utility fees, which are assessed on the property owner based on some estimate of storm water runoff generated for the site, are a predictable and dedicated source of funds. Utility fees can also provide a mechanism to provide incentives to commercial and industrial property owners to reduce impervious surface areas. Such incentives offer flexibility to property owners to choose the better economic option, paying more fees or making improvements to reduce runoff from the site.

The American Society of Civil Engineers (ASCE) and the Water Environment Federation (WEF) have recommended 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

³⁹ *The Economics of Watershed Protection*, T. Schueler (1999), Center for Watershed Protection, Endicott, MD. The article summarizes nationwide studies to support the statement that watershed planning and storm water management provides positive economic benefits.

⁴⁰ *Storm Water Phase II Final Rule – Pre-Federal Register Version*, p 87 (U.S.EPA 1999). See U.S.EPA's discussion in response to challenges that the definition is sufficiently vague to be deemed adequate notice for purposes of compliance with the regulation.

⁴¹ *Storm water runoff Pollution – Summary Thoughts* – The State of Practice Today and for the 21st Century. Wat. Sci. Tech. 39(2) p. 353-360. L.A. Roesner (1999).

⁴² *Preliminary Data Summary of Urban Storm Water Best Management Practices* (1999), Report No. U.S.EPA-821-R-99-012, U.S.EPA. The document reviews municipal financing mechanisms and summarizes experience in the U.S. to date.

sound.⁴³ The maximized treatment volume is cut off at the point of diminishing returns for rainfall/runoff frequency. On the basis of this equation the maximized runoff volume for eighty-five percent treatment of annual runoff volumes in California can range from 0.08 to 0.86 inches depending on the imperviousness of the watershed area and the mean rainfall.⁴⁴

Other methods of establishing numerical BMP design standards include:

- (a) Percent treatment of the annual runoff;
- (b) Full treatment of runoff from rainfall event equal to or less than a predetermined size; and
- (c) Percent reduction in runoff based on a rainfall event of standard size.⁴⁵

These numerical design standards have been applied to Development Planning in Puget Sound, WA; Alexandria, VA; Montgomery County, MD; Denver, CO; Orlando, FL; Portland, OR; and Austin, TX. Some States have established numerical standards for sizing storm water post-construction BMPs for new development and significant redevelopment. The State of Maryland has established storm water numerical criteria for water quality of 0.9 to 1 inch, and BMP design standards in a unified approach combining water quality, stream erosion potential reduction, groundwater recharge, and flood control objectives.⁴⁶ The State of Florida has used numerical criteria to require treatment of storm water from new development since 1982, including BMPs sized for 80 percent reduction (95 percent for impaired waters) in annual TSS loads derived from the 90 percent (or greater for impaired waters) annual runoff treatment volume method for water quality.⁴⁷ The State of Washington has proposed at least six different approaches of establishing storm water numerical mitigation criteria for new development that adds 10,000 square feet of impervious surface or more for residential development and 5,000 square feet of impervious surface or more for other types of development.⁴⁸

On a national level, U.S.EPA is planning to standardize minimum BMP design and performance criteria for post-construction BMPs, and will likely build from the

⁴³ In Storm Water Runoff Quality Management, WEF Manual of Practice No. 23, ASCE Manual and Report on Engineering Practice No. 87. WEF, Alexandria, VA; ASCE, Reston, VA. 259 pp. (1998).

⁴⁴ Sizing and Design Criteria for Storm Water Treatment Controls, Presentation to California Storm Water Quality Task Force, November 13, 1998, Sacramento, CA. L.A. Roesner, Camp Dresser McKee.

⁴⁵ Sizing and Design Criteria for Storm water Quality Infrastructure, Presentation at California Regional Water Quality Control Board Workshop on Standard Urban Storm Water Mitigation Plans, August 10, 1999, Alhambra, CA, R.A. Brashears, Camp Dresser McKee.

⁴⁶ Maryland Storm Water Design Manual - (Maryland Department of the Environment 2000).

⁴⁷ Florida Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Protection). The manual describes structural and non-structural construction and post-construction BMP design criteria.

⁴⁸ Storm Water Management in Washington State Volumes 1 – 5. (Washington Department of Ecology 2001).

experience of effective state and local programs to establish national criteria.⁴⁹ The U.S.EPA, based on the NURP, supports the first half-inch of rainfall as generating first flush runoff.⁵⁰ First flush runoff is associated with the highest pollutant concentrations, and not pollutant load. The U.S.EPA considers the first flush treatment method, the rainfall volume method, and the runoff capture volume method as common approaches for sizing of water quality BMPs.

This Order promotes a land development and redevelopment strategy that considers the water quality and water management benefits associated with smart growth techniques. Such measures include hydromodification mitigation requirements, minimization of impervious surfaces, integrated water resources planning, and low impact development guidelines. (References: *Protecting Water Resources with Smart Growth*, EPA 231-R-04-002, U.S.EPA 2004; *Using Smart Growth Techniques as Storm Water Best Management Practices*, EPA 231-B-05-002, U.S.EPA 2005; *Parking Spaces/Community Places: Finding the Balance through Smart Growth Solutions*, EPA 231-K-06-001, U.S.EPA 2006; *Protecting Water Resources with Higher-Density Development*, EPA 231-R-06-001, U.S.EPA 2006.)

Local Land Use Authority and Water Quality

Storm water runoff needs to be addressed during the three major phases of development (planning, construction, and use) in order to reduce the discharge of pollutants to the MEP and protect receiving waters. Urban development which is not guided by water quality planning policies and principles can unnecessarily result in increased pollutant load discharges, flow rates, and flow durations which can impact receiving water beneficial uses. Construction sites without adequate BMP implementation result in sediment runoff rates which greatly exceed natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters. Existing development generates substantial pollutant loads which are discharged in storm water runoff to receiving waters.

Most municipalities have land use authority and make planning decisions based on that authority. The ultimate responsibility for the pollutant discharges, increased runoff, and inevitable long-term water quality degradation that results from urbanization lies with local governments. This responsibility is based on the fact that it is the local governments that have authorized the urbanization (i.e., conversion of natural pervious ground cover to impervious urban surfaces) and the land uses that generate the pollutants and runoff. Furthermore, the MS4 through which the pollutants and increased flows are conveyed, and ultimately discharged into natural receiving waters, are owned

⁴⁹ 1 *Storm Water Phase II Final Rule* – 64 Fed. Reg. 68759. See U.S.EPA's discussion on construction and post-construction BMP requirements for Phase II.

⁵⁰ *A Watershed Approach to Storm water runoff: Handbook for Decision makers*, Terrene Institute and U.S.EPA Region 5 (1996). See discussion on sizing rules for water quality purposes, p 36.

and operated by the same local governments. In summary, the Co-Permittees under this Order are responsible for discharges into⁵¹ and out of their MS4s because:

- (a) They own and operate the MS4; and
- (b) They have the legal authority that authorizes the very development and land uses which generate the pollutants and increased flows in the first place.

For example, since grading cannot commence prior to the issuance of a local grading permit, the Co-Permittees have a built-in mechanism to ensure that all grading activities are protective of receiving water quality. A Co-Permittee has the authority to withhold issuance of the grading permit until the project proponent has demonstrated to the satisfaction of the Co-Permittee that the project will not violate their ordinances or cause the Co-Permittee to be in violation of its MS4 permit. Since the Co-Permittee will ultimately be held responsible for any discharges from its MS4 by the Regional Water Board, the Co-Permittee will want to use its own permitting authority to ensure that whatever measures the Co-Permittee deems necessary to protect discharges into its MS4 are in fact taken by the project proponent.

This Order holds the local government accountable for this direct link between its land use decisions and water quality degradation. This Order recognizes that each of the three major stages in the urbanization process (development planning, construction, and the use or operational stage) are controlled by and must be authorized by the local government. Accordingly, this Order requires the local government to implement, or require others to implement, appropriate best management practices to reduce the discharges of pollutants and increased flow from each of the three stages of urbanization. Including plans for BMP implementation during the design phase of new development and redevelopment offers the most cost effective strategy to reduce storm water runoff pollutant loads to surface waters.⁵²

U.S.EPA expands on this and recommends that Co-Permittees: "Adopt a planning process that identifies the municipality's program goals (e.g., minimize water quality impacts resulting from post-construction runoff from new development and redevelopment), implementation strategies (e.g., adopt a combination of structural and/or non-structural BMPs), operation and maintenance policies and procedures, and enforcement procedures. In developing your program, you should consider assessing existing ordinances, policies, programs and studies that address storm water runoff

⁵¹ This Order's approach to regulating discharges into and from the MS4 is in accordance with State Water Board Order WQ 2001-15. In that order, the State Water Board reviewed the San Diego County permit (Order No. 2001-01) requirements and removed the prohibition of discharges *into* the MS4 that cause or contribute to exceedances of water quality objectives. The revision allows for treatment of storm water flows once the pollutants have entered the MS4. It does not affect the effective prohibition on certain dry-weather flows into the MS4 that is required by the Clean Water Act and the Basin Plan.

⁵² U.S.EPA, 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

quality." The program must also ensure the adequate long-term operation and maintenance of BMPs.⁵³

The project size criteria in this Order that requires the implementation of post-construction storm water treatment BMPs is smaller than required by the Phase II regulations to reflect the expectations that Phase I municipalities have a more mature program, have a more severe adverse impact to water quality due to their larger size, and the local reality that we should not allow new sources of pollution into our many impaired waters.

Low Impact Development

This Order requires preferential consideration of LID techniques in order to mitigate storm water quality and quantity impacts from new development. LID is a 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 ground water 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, 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 implementation include reducing global warming impacts from new development (preserving carbon sequestering in native soils and retaining native vegetation), increasing water supply (by encouraging ground water recharge) and reducing energy consumption.

The use of LID site design BMPs helps reduce the amount of impervious area associated with urbanization and allows storm water to infiltrate into the soil. Natural vegetation and soil filters storm water runoff and reduces the volume and pollutant loads of storm water. Studies have revealed that the level of imperviousness resulting from urbanization is strongly correlated with the water quality impairment of nearby receiving waters.⁵⁴ In many cases, the impacts on receiving waters due to changes in hydrology can be more significant than those attributable to the contaminants found in storm water discharges. These impacts include stream bank erosion (increased sediment load and subsequent deposition), benthic habitat degradation, and decreased diversity of

⁵³ U.S.EPA, 1999. 40 CFR Parts 9, 122, 123, and 124 National Pollutant Discharge Elimination System - Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. 64 FR 68845.

⁵⁴ U.S.EPA, 1999. 40 CFR Parts 9, 122, 123, and 124 National Pollutant Discharge Elimination System - Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule.

macroinvertebrates. Although conventional BMPs do reduce pollutant loads, they may not effectively control adverse effects from changes in the discharge hydrologic conditions.⁵⁵

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.⁵⁶ 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 surface waters.⁵⁷ In addition, a recent U.S. Department of Housing and Urban Development guidance document on LID notes that the use of LID-based storm water management design allows land to be developed, but in a cost-effective manner that helps mitigate potential environmental impacts.⁵⁸

As a result of the adverse effects to water quality and beneficial uses, the State of California nonpoint source pollution program includes management measures for urban areas limiting the destruction of natural drainage features and natural conveyance areas.⁵⁹ Through its process of conditioning development projects under the CWA section 401 Water Quality Certification program, the Regional Water Board has found that the level of LID and post-construction BMP implementation required by this Order is feasible for all projects. 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.⁶⁰ Some design options, such as concave vegetated surfaces or routing rooftop or walkway runoff to landscaped areas, are cost neutral.⁶¹ 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

⁵⁵ U.S.EPA, 2000. Low-Impact Development: A literature review. EPA-841-B-00-005, p. 35.

⁵⁶ Center for Watershed Protection, 2000. "The Benefits of Better Site Design in Residential Subdivisions." Watershed Protection Techniques, Vol. 3. No. 2.

⁵⁷ U.S.EPA, 1999. 40 CFR Parts 9, 122, 123, and 124 National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule.

⁵⁸ U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 2003. "The Practice of Low Impact Development." Prepared by: NAHB Research Center, Inc. Upper Marlboro, Maryland. Contract No. H-21314CA. 131p.

⁵⁹ California Nonpoint Source Encyclopedia, Management Measure 3.1.b. Runoff from Developing Areas, Site Development and Management Measure 3.3.a. Runoff from Existing Development.

⁶⁰ U.S.EPA, 2000. Low-Impact Development: A literature review. EPA-841-B-00-005. 35p.

⁶¹ Bay Area Stormwater Management Agencies Association, 1999. Start at the Source. Forbes Custom Publishing. Available on-line at: http://www.scvurppp-w2k.com/basmma_satsm.htm. p. 149.

runoff quantity, allowing for treatment control BMPs and other storm water infrastructure on site to be smaller, therefore savings costs for both developers and municipalities.^{62,63}

Because of the potential economic and environmental benefits of using LID site design, the U.S. Department of Housing and Urban Development, Office of Policy Development and Research, developed "*The Practice of Low Impact Development (LID)*" to assist the housing industry during the land development process.⁶⁴ This document focuses specifically on technologies that affect both the cost impacts and environmental issues associated with land development. Much of the report focuses on storm water management because LID storm water management systems can save capital costs for developers and maintenance costs for municipalities. The executive summary of the HUD report states, "This approach to land development, called LID, uses various land planning and design practices and technologies to simultaneously conserve and protect natural resource systems and reduce infrastructure costs. LID still allows land to be developed, but in a cost-effective manner that helps mitigate potential environmental impacts."

This Order recognizes that there will be an increase in discharges of storm water and pollutants discharged through storm water sewer systems because of continuing development within the Co-Permittees' jurisdiction, and it is therefore possible that future degradation of receiving water quality may occur. The continued revisions and implementation of each Co-Permittees' Management Plan in compliance with this Order will reduce the potential for discharges from MS4s to cause degradation of receiving water quality. In addition, other measures implemented by the Management Plan are intended to reduce the impacts of storm water runoff from areas of existing development. The Co-Permittees shall continue to look for additional opportunities to reduce pollutants discharged from the MS4 system. This Order is therefore consistent with applicable antidegradation provisions of 40 CFR 131.12 and the State Water Board Resolution 68-16.

New Development Standards

Santa Rosa Area Standard Urban Stormwater Mitigation Plan (SRA-SUSMP)

On October 5, 2000, the State Water Board adopted Order No. WQ 2000-11, a precedential decision upholding the use of SUSMPs in MS4 permits for new

⁶² National Association of Home Builders Research Center. *Builders Guide to Low Impact Development*. Available on-line at <http://www.toolbase.org>.

⁶³ National Association of Home Builders Research Center. *Municipal Guide to Low Impact Development*. Available on-line at <http://www.toolbase.org>

⁶⁴ U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 2003. *The Practice of Low Impact Development*. Prepared by: NAHB Research Center, Inc. Upper Marlboro, Maryland. Contract No. H-21314CA.

development and significant redevelopment projects. Regional Water Board orders are required to be consistent with applicable portions of the State Water Board's precedential decisions. The program developed by the Co-Permittees in their current permit is referred to as the SRA-SUSMP. The existing SRA-SUSMP requires design review and post-construction storm water treatment only for large projects (one acre or more). Consistent with the storm water program goals of requiring iterative improvements to storm water quality, this Order will require new development controls for smaller projects, based on land use categories. The SRA-SUSMP shall also be revised during this permit term to prioritize post-construction storm water treatment BMPs for their efficacy in removing POCs, to include guidance on LID, and to minimize hydromodification.

Federal regulations (40 CFR 131.10(a)) prohibit states from designating waste transport or waste assimilation as a beneficial use for any water of the United States. Authorizing the construction of a storm water runoff treatment facility in a water body may be considered as accepting waste assimilation as an appropriate use for that water body. Furthermore, the construction and operation of a pollution control facility in a water body can impact the physical, chemical, and biological integrity as well as the beneficial uses of the water body. Therefore, storm water treatment and/or mitigation in accordance with the SRA-SUSMP and any other requirements of this Order must occur prior to the discharge of storm water pollutants into surface waters.

Co-Permittees are responsible for adopting and enforcing local SRA-SUSMP ordinances necessary to implement effective BMPs to prevent or reduce pollutants in storm water as a result of new development or redevelopment, in public and private projects within their jurisdiction. The Co-Permittees are also responsible for ensuring that adequate permit conditions or funding is in place to cover costs associated with construction, operation, and maintenance of storm water treatment BMPs. This requirement may be implemented by placing conditions into project approvals to implement SRA-SUSMP ordinances and to provide for the long-term operation and maintenance of storm water control measures that are implemented. Projects requiring only ministerial approvals can be required to prove compliance with pre-existing criteria before development is allowed. Regardless of whether approvals are discretionary or ministerial, compliance with this Order is required.

In the precedential order WQ Order 2000-11, the State Water Board found that the design standards that essentially require that storm water runoff generated by 85 percent of storm events from specific development categories be infiltrated or treated, reflect the MEP standard. This Order also finds that the SUSMP requirements are appropriately applied to the development categories in Part 4 – Planning and Land Development Program.

Retail Gasoline Outlets (RGOs)

Retail Gasoline Outlets (RGOs) are points of convergence for vehicular traffic and are similar to parking lots and urban roads. Studies indicate that storm water discharges from RGOs have high concentrations of hydrocarbons and heavy metals. New development projects that have areas of high vehicle use are identified in this Order for implementation of post-construction storm water treatment BMPs. To meet MEP, source control and structural treatment BMPs are needed at RGOs that develop or redevelop 10,000 square feet of impervious surface. These are appropriate thresholds since development size is a good indicator of potential impacts of RGO storm water runoff on receiving waters.

This requirement has been added to satisfy direction included in State Water Board WQ Order No. 2000-11 for including RGOs as a priority development category. Order No. 2000-11 acknowledged that a threshold (size, average daily traffic, etc.) appropriate to trigger SUSMP requirements should be developed for RGOs and that specific findings regarding RGOs should be included in MS4 permits to justify the requirement.

Development Construction Program

Soil disturbing activities during construction and demolition exacerbate sediment losses. Sediment is a primary pollutant impacting beneficial uses of watercourses. Sediments and other construction activity pollutants must be properly controlled to reduce or eliminate adverse impacts.

U.S.EPA explains in the preamble to the Phase II regulations that storm water discharges generated during construction activities can cause an array of physical, chemical, and biological water quality impacts. Specifically, the biological, chemical and physical integrity of the waters may become severely compromised due to runoff from construction sites. Fine sediment from construction sites can adversely affect aquatic ecosystems by reducing light penetration, impeding sight-feeding, smothering benthic organisms, abrading gills and other sensitive structures, reducing habitat by clogging interstitial spaces within the streambed, and reducing intergravel dissolved oxygen by reducing the permeability of the bed material. Water quality impairment also results, in part, because a number of pollutants are preferentially absorbed onto mineral or organic particles found in fine sediment. The interconnected process of erosion (detachment of the soil particles), sediment transport, and delivery is the primary pathway for introducing key pollutants such as nutrients, metals, and organic compounds into aquatic systems.

This Order includes requirements for grading restrictions for the wet season for projects that discharge to water bodies included in the CWA section 303(d) list for siltation, sediment or temperature and includes restrictions on grading on slopes 20 percent or

steeper. The Co-Permittees may grant an exception to these requirements, and the process to grant an exception is included in this Order. These grading restrictions are needed to protect impaired waters from sediment discharges from sites that because of their geography or geology cannot be controlled through the use of conventional BMPs during storm events. During storm water program audits, U.S.EPA contractors identified inadequate site regulation and erosion and sediment controls on several construction sites in the Co-Permittees' jurisdiction.

This Order incorporates presumptive BMPs to reduce pollutants in storm water discharges from construction sites to the MEP. The BMPs are identified in Table 8 (BMPs at Construction sites less than 1 acre) and Table 9 (BMPs at Construction Sites 1 acre or greater). These BMPs include erosion control, sediment control, and construction site waste management practices. The BMPs listed in Part 8 of the Order were selected based on the Water Boards' experience of regulating such sites since 1992, and are referenced in the CASQA handbook and Caltrans BMP manuals which serve as an industry standard for California. The BMPs identified in the Tables are technically feasible, practicable, and cost-effective. Consistent with Water Code section 13360, where an identified BMP may be impracticable at a particular site, this Order includes a provision to select and implement an alternative BMP. If these BMPs are not effective in controlling the discharge of pollutants, the Co-Permittees shall require additional BMPs including active, advanced treatment controls, or additional weather grading restrictions.

Development and urbanization especially threaten environmentally sensitive areas (ESAs). ESAs have a much lower capacity to withstand pollutant shocks than might be acceptable in the other circumstances. In essence, development that is ordinarily insignificant in its impact on the environment may, in a particular sensitive environment, become significant. These ESAs designated by the State include:

- (a) Regional Water Board's areas listed in the Basin Plan as supporting the "Rare, Threatened, or Endangered Species (RARE)" Beneficial Use;
- (b) Designated areas of special biological significance (ASBS) in ocean waters; and
- (c) Wetlands, riparian areas, and headwaters streams that offer high habitat value and basin-wide value for pollution removal, floodwater retention, channel stability and habitat connectivity. These waters provide habitat for a high number of special-status species and because of the high percentage of historic losses of these waters in California and the vulnerability of these waters to future impacts from projected population growth and land development, these waters warrant special protection in the land development process.

The Co-Permittees should consider appropriate controls to protect water quality in ESAs.

Public Agency Activities

A municipal operations program is a fundamental component to a storm water management program. Public agency activities such as road maintenance and public construction require BMPs and can have the same water quality impacts as private projects. Street sweeping and catch basin and ditch maintenance are also important to keep pollutants out of the MS4 and remove pollutant sources from the MS4 before they are discharged to surface waters.

This Order incorporates presumptive BMPs to reduce pollutants in storm water discharges from public agency activities to the MEP. The BMPs are identified in Table 10 (BMPs at Vehicle Maintenance/Material Storage Facilities/Corporation Yards). 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 storm drainage system and from being deposited or discharged directly into waters of the U.S. The BMPs listed in Part 9 of the Order were selected based on the Water Boards' experience of regulating similar activities, and are referenced in the Caltrans Storm Water Quality Handbook Maintenance Staff Guide May 2003 (Caltrans Document Number CTSW-RT-02-057), which serves as a statewide standard for Caltrans. The BMPs identified in the Table are technically feasible, practicable, and cost-effective, and are the standard of practice for Caltrans sites statewide. Consistent with Water Code section 13360, where an identified BMP may be impracticable at a particular site, this Order includes a provision to select and implement an alternative BMP.

Illicit Connections and Illicit Discharges Elimination Program

Common sources of pollutants to the MS4 are illicit connections and illicit discharges. Common wastes discharged into the MS4 include washwater from painting and concrete work, overflows from onsite wastewater systems, and vehicle and sidewalk washwater. In addition, overflows from clogged sanitary sewer lines have a high likelihood of reaching the receiving waters via MS4s. Illicit discharges may occur either through direct connections, such as deliberate or mistaken piping, or through indirect connections, such as dumping, spillage, subsurface infiltration, and wash-downs. This Order contains specific language requiring that the Permittees promptly respond to reports of illicit discharges and implement enforcement measures where necessary.

Monitoring data from MS4 programs across the nation have shown that dry weather discharges can contribute significant pollutant loads to receiving waters. The U.S.EPA publication titled "*Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments*"⁶⁵ (referred to hereafter as "*Illicit*

⁶⁵ U.S.EPA No. 833B04005. October 2004.

Discharge Detection and Elimination") finds, if these non-storm water discharges are ignored by only focusing on storm water runoff, little improvement in receiving water quality may occur. The manual was developed as part of a cooperative agreement with the U.S.EPA, to serve as a comprehensive up-to-date guidance manual for illicit connection/illicit discharge elimination programs. The manual was developed from surveys of Phase I MS4 permittees serving multiple population sizes with the goal of coming up with cost effective methods for screening and eliminating illicit connections/illicit discharges.

The objective of a municipality's illicit connection/illicit discharge (IC/ID) elimination program should be to detect illicit connections and illicit discharges to the storm drain system, and to promptly remove such discharges and connections. Municipalities typically employ the approaches described below to achieve this objective:

- (a) Permitting connections to the municipal storm drain;
- (b) Mapping the storm drain system, locations of catch basins, outfalls, permitted connections, and the names and locations of all waters of the U.S. that receive discharges from the outfalls;
- (c) Adopting a storm water/non-storm water runoff ordinance to prohibit unauthorized non-storm water discharges into the MS4;
- (d) Implementing appropriate enforcement procedures and actions;
- (e) Implementing a program to detect and eliminate non-storm water discharges to the MS4, including illegal dumping;
- (f) Educating public employees, businesses, and the general public about the dangers associated with illegal discharges and improper disposal;
- (g) Establishing a public reporting hotline or other mechanism to report illicit discharges and illegal dumping; and
- (h) Establishing measurable goals to evaluate successful program implementation.

This Order requires the Co-Permittees to conduct field screening of their storm drain systems in accordance with procedures described in "*Illicit Discharge Detection and Elimination*". The goal of specifying that the procedures in the manual be followed is to provide guidance and ensure effective methods are used for screening storm drain systems. The provision is not meant to exclude Co-Permittees from using equally effective alternative methods not listed in the manual.

This Order requires the Co-Permittees, upon discovery or upon receiving a report of a suspected illicit connection, to complete an investigation within 21 days; to determine the source of the connection, and the nature and volume of discharge through the connection; and to identify the responsible party for the connection. The Order requires Co-Permittees, upon confirmation of an illicit storm drain connection, to ensure the termination of the connection within 180 days of completion of the investigation. The intent of this requirement is to ensure the timely elimination of illicit connections upon discovery and eliminate the unauthorized discharge to receiving waters.

This Order requires the Co-Permittees to maintain records of all illicit discharge discoveries, reports of suspected illicit discharges, their response to the illicit discharges and suspected illicit discharges, and the formal enforcement taken to eliminate all illicit discharges. The intent of this documentation provision is to facilitate the recognition of trends to assist in the discovery of unidentified illicit connections and identify areas where illicit connections and discharges have a greater probability of occurring.

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 federal NPDES regulation 40 CFR 122.42(c), which states: "The operator of a large or medium municipal separate storm sewer system that has been designated by the Director under section 122.26(a)(1)(v) of this part must submit an annual report by the anniversary of the date of the issuance of the permit for such a system. 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.

Monitoring Program

Water quality monitoring has become a high priority because of the number of water bodies not supporting their beneficial uses due to constituent exceedances and

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therefore being placed on the State's CWA section 303(d) list of impaired waters. Water quality monitoring is needed in conjunction with the 1995 Laguna TMDL and to assist in developing the updated Laguna TMDL. Water quality monitoring and assessments help prioritize water body segments within a watershed that have the most degraded waters and to assess which stressors, such as nutrients, sedimentation, and habitat disturbances are the most important in that watershed. Monitoring is a useful and cost-effective method of evaluating the health of a watershed.

Permit Attachment A:

**Beneficial Uses of Waters
within or downstream of
the Permit Boundary**

Attachment A - Beneficial Uses

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HU/HA /HSA	HYDROLOGIC UNIT/AREA/ SUBUNIT/DRAINAGE FEATURE	BENEFICIAL USES																								
		MUN	AGR	IND	PRO	GWR	FRSH	NAV	POW	REC1	REC2	COMM	WARM	COLD	ASBS	SAL	WILD	RARE	MAR	MIGR	SPWN	SHELL	EST	AQUA	CUL	FLD
114.00	Russian River Hydrologic Unit																									
114.10	Lower Russian River Hydrologic Area																									
114.11	Guerneville Hydrologic Subarea	E	E	E	P	E	E	E	P	E	E	E	E	E		E	E	E	E	P	E	P				
114.12	Austin Creek Hydrologic Subarea	E	E	E	P	E		E	P	E	E	E	E	E		E	E	E	E		P					
114.20	Middle Russian River Hydrologic Area																									
114.21	Laguna Hydrologic Subarea	P	E	E	P	E	E	E	E	E	E	E	E	E		E	E	E	E	P	P					
114.22	Santa Rosa Hydrologic Subarea	E	E	E	P	E		E	P	E	E	E	E	E		E	E	E	E	P	P					
114.23	Mark West Hydrologic Subarea	E	E	E	P	E	E	E	P	E	E	E	E	E		E	E	E	E	P	P					
114.24	Warm Springs Hydrologic Subarea	E	E	E	P	E	E	E	E	E	E	E	E	E		E	E	E	E		E					
114.25	Geyserville Hydrologic Subarea	E	E	E	P	E	E	E	P	E	E	E	E	E		E	E	E	E	P	P					
114.26	Sulphur Creek Hydrologic Subarea	E	E	E	P	E		E	P	E	E	E	E	E		E	E	E	E		P					

P = Potential E = Existing

Subsistence Fishing is considered a potential beneficial use of these waterbodies, and an existing beneficial use of the Laguna de Santa Rosa

*Permanent and intermittent

	BENEFICIAL USE	DESCRIPTION
(AGR)	Agricultural Supply	Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
(AQUA)	Aquaculture	Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
(ASBS)	Preservation of Areas of Special Biological Significance	Includes marine life refuges, ecological reserves and designated areas of special biological significance, such as areas where kelp propagation and maintenance are features of the marine environment requiring special protection.

Attachment A - Beneficial Uses

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	BENEFICIAL USE	DESCRIPTION
(COLD)	Cold Freshwater Habitat	Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
(COMM)	Commercial and Sport Fishing	Uses of water for commercial, recreational (sport) collection of fish, shellfish, or other aquatic organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.
(CUL)	Native American Culture	Uses of water that support the cultural and/or traditional rights of indigenous people such as subsistence fishing and shellfish gathering, basket weaving and jewelry material collection, navigation to traditional ceremonial locations, and ceremonial uses.
(EST)	Estuarine Habitat	Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).
(FISH)	Subsistence Fishing	Uses of water that support subsistence fishing.
(FLD)	Flood Peak Attenuation / Flood Water Storage	Uses of riparian wetlands in flood plain areas and other wetlands that receive natural surface drainage and buffer its passage to receiving waters.
(FRSH)	Freshwater Replenishment	Uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).
(GWR)	Groundwater Recharge	Uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.
(IND)	Industrial Service Supply	Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
(MAR)	Marine Habitat	Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
(MIGR)	Migration of Aquatic Organisms	Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.
(MUN)	Municipal and Domestic Supply	Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Attachment A - Beneficial Uses

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	BENEFICIAL USE	DESCRIPTION
(NAV)	Navigation	Uses of water for shipping, travel, or other transportation by private, military or commercial vessels.
(POW)	Hydropower Generation	Uses of water for hydropower generation.
(PRO)	Industrial Process Supply	Uses of water for industrial activities that depend primarily on water quality.
(RARE)	Rare, Threatened, or Endangered Species	Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.
(REC-1)	Water Contact Recreation	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white-water activities, fishing, or use of natural hot springs.
(REC-2)	Non-Contact Water Recreation	Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
(SAL)	Inland Saline Water Habitat	Uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish, or wildlife, including invertebrates.
(SHELL)	Shellfish Harvesting	Uses of water that support habitats suitable for the collection of filterfeeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.
(SPWN)	Spawning, Reproduction, and / or Early Development	Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
(WARM)	Warm Freshwater Habitat	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
(WET)	Wetland Habitat	Uses of water that support natural and man-made wetland ecosystems, including, but not limited to, preservation or enhancement of unique wetland functions, vegetation, fish, shellfish, invertebrates, insects, and wildlife habitat.

Attachment A - Beneficial Uses

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	BENEFICIAL USE	DESCRIPTION
(WILD)	Wildlife Habitat	Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
(WQE)	Water Quality Enhancement	Uses of waters, including wetlands and other waterbodies, that support natural enhancement or improvement of water quality in or downstream of a waterbody including, but not limited to, erosion control, filtration and purification of naturally occurring water pollutants, streambank stabilization, maintenance of channel integrity, and siltation control.

Permit Attachment B:

Standard Provisions of the Order

STANDARD PROVISIONS

A. General Requirements

1. The Co-Permittees shall comply with all provisions and requirements of this Order.
2. Should a Co-Permittee discover that it failed to submit any relevant facts or that it submitted incorrect information in a report, it shall promptly submit the missing or correct information.
3. This Order includes Monitoring and Reporting Program No. R1-2009-0050, which is incorporated into this Order and is enforceable.

B. Public Review

1. All documents submitted to the Regional Water Board in compliance with the terms and conditions of this Order shall be made available to members of the public pursuant to the Freedom of Information Act (5 U.S.C. § 552), as amended, and the Public Records Act (California Government Code § 6250 et seq.).
2. All documents submitted to the Regional Water Board Executive Officer for approval shall be made available to the public on the Regional Water Board's website for a 30-day period to allow for public comment.

C. Duty to Comply [40 Code of Federal Regulations (CFR) 122.41(a)]

1. Each Co-Permittee must comply with all of the terms, requirements, and conditions of this Order. Any violation of this order constitutes a violation of the Clean Water Act (CWA), its regulations and the California Water Code, and is grounds for enforcement action, Order termination, Order revocation and reissuance, denial of an application for reissuance, or a combination thereof [40 CFR 122.41(a), Water Code §§ 13261, 13263, 13323 13300, 13301, 13304, 13340, 13350, 13381,13385].
2. A copy of this Order shall be maintained by each Co-Permittee so as to be available during normal business hours to Co-Permittee employees, Regional Water Board staff and members of the public.
3. Any discharge of wastes at any point(s) other than specifically described in this Order is prohibited, and constitutes a violation of the Order.

D. Duty to Mitigate [40 CFR 122.41 (d)]

1. Each Co-Permittee shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

E. Inspection and Entry; Investigations; Responsibilities [40 CFR 122.41(i), Water Code §§ 13225 and 13267]

1. The Regional Water Board, U.S. EPA, and other authorized representatives shall be allowed:
 - (a) Entry upon premises where a regulated facility is located or conducted, or where records are kept under conditions of this Order;
 - (b) Access to copy any records, at reasonable times that are kept under the conditions of this Order;
 - (c) To inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order;
 - (d) To photograph, sample, and monitor at reasonable times for the purpose of assuring compliance with this Order, or as otherwise authorized by the CWA and the Water Code;
 - (e) To review any water quality control plan or waste discharge requirements, or in connection with any action relating to any plan or requirement to investigate the quality of any waters of the State within its region; and
 - (f) To require as necessary any state or local agency to investigate and report on any technical factors involved in water quality control or to obtain and submit analyses of water.

F. Proper Operation and Maintenance [40 CFR 122.41 (e), Water Code § 13263(f)]

1. The Co-Permittees shall at all times properly operate and maintain all facilities and systems of treatment that are installed or used by the Co-Permittees to achieve compliance with this Order. Proper operation and maintenance includes:
 - (a) adequate laboratory controls; and
 - (b) appropriate quality assurance procedures.
2. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Co-Permittee only when necessary to achieve compliance with the conditions of this Order.

G. Signatory Requirements [40 CFR 122.41(k) & 122.22]

1. Except as otherwise provided in this Order, all applications, reports, or information submitted to the Regional Water Board shall be signed by the Director of Public Works, City Engineer, or authorized designee and certified as set forth in 40 CFR 122.22.

H. Reopener and Modification [40 CFR 122.41(f) & 122.62]

1. This Order may only be modified, revoked, or reissued, prior to the expiration date, by the Regional Water Board, in accordance with the procedural requirements of the Water Code and Title 23 of the California Code of Regulations for the issuance of waste discharge requirements, 40 CFR 122.62, and upon prior notice and hearing, to:
 - (a) Address changed conditions identified in the required reports or other sources deemed significant by the Regional Water Board;
 - (b) Incorporate applicable requirements or statewide water quality control plans adopted by the State Water Board or amendments to the Basin Plan, including total maximum daily loads (TMDLs);
 - (c) Comply with any applicable requirements, guidelines, and/or regulations issued or approved pursuant to CWA § 402(p); and/or
 - (d) Consider any other federal, or state laws or regulations that became effective after adoption of this Order.
2. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - (a) Violation of any term or condition contained in this Order;
 - (b) Obtaining this Order by misrepresentation, or failure to disclose all relevant facts; or
 - (c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
3. The filing of a request by the Co-Permittees for a modification, revocation and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.
4. This Order may be modified to make corrections or allowances for changes in the permitted activity listed in this section, following the procedures at 40 CFR 122.63, if processed as a minor modification. For purposes of this Order, minor modifications may only:
 - (a) Correct typographical errors; or
 - (b) Require more frequent monitoring or reporting by the Co-Permittees.

I. Severability

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

J. Duty to Provide Information [40 CFR 122.41(h)]

1. The Co-Permittees shall furnish, within a reasonable time, any information the Regional Water Board or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order.
2. The Co-Permittees shall also furnish to the Regional Water Board, upon request, copies of records required to be kept by this Order.

K. Twenty-Four Hour Reporting [40 CFR 122.41(l)(6)]

1. The Co-Permittees shall report to the Regional Water Board any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time any Co-Permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the Co-Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
2. The Regional Water Board may waive the required written report on a case-by-case basis.

L. Property Rights [40 CFR 122.41(g)]

1. This Order does not convey any property rights of any sort, or any exclusive privilege.

M. Need to Halt or Reduce Activity not a Defense [40 CFR 122.41(c)]

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

N. Rescission of Board Order

1. Regional Water Board Order No. R1-2003-0062 is hereby rescinded, except for purposes of enforcement.

O. Order Expiration and Reapplication

1. This Order expires on October 1, 2014.
2. If a new order is not adopted by October 1, 2014, then the Co-Permittees shall continue to implement the requirements of this Order until a new one is adopted.
3. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Code of Regulations, the Co-Permittees shall file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissuance of this permit and waste discharge requirements. The application shall be accompanied by a Storm Water Management Program (SWMP), and a summary of all available water quality data for the discharge and receiving waters, including conventional pollutant data from at least the most recent three years, and toxic pollutant data from at least the most recent five years, in the discharge and receiving water. Additionally, the Co-Permittees shall include the final results of any studies that may have a bearing on the limits and requirements of the next permit.

P. Retention of Records

1. The Co-Permittees shall retain records of all monitoring information, including all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least five (5) years from the date of the sample, measurement, report or application.

Q. MS4 Annual Reporting Program [40 CFR 122.42(c)]

1. The Annual Program Reporting shall include the following information:
 - (a) Municipal Separate Storm Sewer Systems
 - (1) The operator of a large or medium MS4 or an MS4 that has been designated by the Director under 40 CFR 122.26(a)(1)(v) of this part must submit an annual report by the anniversary of the date of the issuance of the permit for such system. The report shall include:
 - (A) The status of implementing the components of the SWMP that are established as permit conditions;

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- (B) Proposed changes to the SWMP that are established as permit condition; Such proposed changes shall be consistent with 40 CFR 122.26(d)(2)(iii);
- (C) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under 40 CFR 122.26(d)(2)(iv) and (d)(2)(v);
- (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.

Permit Attachment C:

Definitions of Terms in the Order

DEFINITIONS

The following are definitions for terms in this Order:

Adverse Impact - means a detrimental effect upon water quality or beneficial uses caused by a discharge of waste.

Agriculture - means the science, art, and business of cultivating the soil, producing crops, and raising livestock;

Antidegradation Policies - means State policies that protect surface and ground waters from degradation, and federal policies that protect high quality surface waters. In particular, these policies protect water bodies where existing quality is higher than that necessary for the protection of beneficial uses including the protection of fish and wildlife propagation and recreation on and in the water (*Statement of Policy with Respect to Maintaining High Quality Water in California*, State Board Resolution No. 68-16).

Applicable Standards and Limitations - means all State, interstate, and federal standards and limitations to which a "discharge" or a related activity is subject, including effluent limitations, water quality standards, standards of performance, toxic effluent standards or prohibitions, best management practices, and pretreatment standards under the CWA and Porter-Cologne Water Quality Act.

Areas of Special Biological Significance (ASBS) - means all those areas listed specifically within the California Ocean Plan or so designated by the State Water Board.

Authorized Discharge - means any discharge that is authorized pursuant to an NPDES permit or meets the conditions set forth in this Order.

Automotive Repair Shop - means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.

Automotive Service Facilities - means a facility that is categorized in any one of the following SIC and North American Industry Classification System (NAICS) codes. For inspection purposes, Co-Permittees need not inspect facilities with SIC codes 5013, 5014, 5541, 5511, provided that these facilities have no outside activities or materials that may be exposed to storm water.

SIC Code	Corresponding NAICS Code
5013	425120, 441310, 425110, & 423120
5014	425120, 425110, 423130, & 441320
5511	441110

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SIC Code	Corresponding NAICS Code
5541	447110, & 447190
7532	811121
7533	811112
7534	326212, & 811198
7536	811122
7537	811113
7538	811111
7539	811198, & 811118

Beneficial Uses - means the existing or potential uses of receiving waters in the permit area as designated by the Regional Water Board in the Basin Plan.

Best Management Practices (BMPs) - means methods, measures, policies or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and nonstructural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

Bioretention BMPs - means post-construction storm water treatment BMPs that treat storm water vertically through an engineered soil filter media and vegetation and/or retain storm water runoff onsite through infiltration or evapotranspiration.

California Environmental Quality Act (CEQA) - means a California statute that requires state and local agencies to identify significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible (Reference: California Public Resources Code § 21000 et seq.)

Channel - means an open conduit either naturally or artificially created that periodically or continuously contains moving water, or which forms a connecting link between two water bodies.

Commercial Area(s) - means any geographic area of the Co-Permittees' jurisdiction that is not heavy industrial or residential. A commercial area includes, but is not limited to areas surrounding: commercial activity, hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, car wash facilities, mini-malls and other business complexes, shopping malls, hotels, office buildings, restaurants, public warehouses and other light industrial complexes.

Commercial Development - means any development on private land that is not heavy industrial or residential. The category includes, but is not limited to: hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, car wash facilities, mini-malls and other business complexes, shopping

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malls, restaurants, hotels, office buildings, public warehouses and other light industrial complexes.

Construction - means any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that results in a land disturbance. Construction does not include emergency construction activities required to immediately protect public health and safety or routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility.

Construction Activities Storm Water General Permit (Construction General Permit) - means general NPDES permit adopted by the State Water Board, which authorizes the discharge of storm water from construction activities under certain conditions.

Control - means to minimize, reduce, eliminate, or prohibit by technological, management, legal, contractual or other means, the discharge of pollutants from an activity or activities.

Co-Permittee(s) - means Co-Permittee(s) and any agency named in this Order as being responsible for permit conditions within its jurisdiction, as defined by Federal Regulation. Co-Permittees to this Order are the City of Santa Rosa, the County of Sonoma and the Sonoma County Water Agency.

Dechlorinated/Debrominated Swimming Pool Discharge - means any swimming pool discharge with a residual chlorine or bromine level of 0.02 mg/L or less; and does not contain any detergents, wastes, algaecides, or cyanuric acid in excess of 50 ppm, or any other chemicals including salts from pools commonly referred to as "salt water pools". The term does not include swimming pool filter backwash or swimming pool water containing bacteria.

Development - means any construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail and any other non-residential projects, including public agency projects; or mass grading for future construction.

Discharge - means when used without qualification the "discharge of a pollutant or waste".

Discharge of a Pollutant - means any addition of any "pollutant" or combination of pollutants to receiving waters from any "point source" or, any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source.