

Item No. 4, MS4 Storm Water Permit

**Santa Rosa, Sonoma County and the Sonoma County
Water Agency**

Executive Officer's Summary Report Attachment 2:

**Modifications made to the 2nd draft Permit, Fact Sheet,
and Monitoring and Reporting Program**

- (e) Attachment E – U.S.EPA Inspection Report for Santa Rosa.
- (f) Attachment F – U.S.EPA Inspection Report for Sonoma County and the Sonoma County Water Agency.

Public Process

4. On September 9, 2008, the Regional Water Board released the first draft of this Order for a 43 day public comment period that ended on October 22, 2008. The Regional Water Board received 159 comment letters. Responses to these comments can be found in a separate document that was released during the comment period for the second draft of this Order.
5. The Executive Officer of the Regional Water Board held a public workshop on October 21, 2008 to discuss this Order, receive comments and answer questions about the Order.
6. In writing the second draft of this Order, Regional Water Board staff met with interested parties and parties that had commented on the draft Order. Meetings were held with:
 - (a) Co-Permittees: September 25, 2008; October 23, 2008; November 13, 2008; November 25, 2008; December 8, 2008; December 15, 2008; December 29, 2008; December 30, 2008; January 8, 2009; January 20, 2009; January 21, 2009; January 28, 2009; February 4, 2009; February 19, 2009; February 26, 2009; March 12, 2009; and April 9, 2009;
 - (b) Russian River Watershed Association: October 14, 2008;
 - (c) Sonoma County Fire Fighter's Association: October 28, 2008;
 - (d) Russian River Watershed Protection Committee: November 19, 2008;
 - (e) Russian Riverkeeper and Coast Action Group: December 2, 2008;
 - (f) Sonoma Marin Vector Control District: December 9, 2008;
 - (g) Engineers representing associations and local consultants: December 15, 2008;
 - (h) U.S.EPA: February 18, 2009; and
 - (i) Department of Fish and Game: March 3, 2009.
7. On May 22, 2009, the Regional Water Board released the second draft of this Order for a 45 day public comment period that ended on July 6, 2009. The Regional Water Board received 17 comment letters.
8. On June 22, 2009, the Regional Water Board released staff responses to the comments received on the first draft of this Order.
9. On July 22, 2009, the Regional Water Board held a public hearing to discuss the second draft of this Order, receive public testimony, and ask questions of the Co-Permittees, the public and Regional Water Board staff. Adoption of the draft Order was not considered at this public hearing.

10. In revising the draft Order for Regional Water Board consideration, Regional Water Board staff met with parties that requested a meeting. These parties include:
 - (a) Sonoma County Water Agency: August 6, 2009;
 - (b) City of Santa Rosa: August 10, 2009;
 - (c) Co-Permittees: August 19, 2009; and
 - (d) Sonoma County: August 26, 2009.
11. The Regional Water Board has notified the Co-Permittees and interested parties of its intent to prescribe waste discharge requirements (WDRs) for this discharge. Regional Water Board staff and Co-Permittees' staff have worked closely together over the last two years to develop the Management Plan and discuss revisions to the previous Order to achieve a well integrated set of documents that will effectively protect water quality. The hearing on the Order was properly noticed. Accordingly, the Co-Permittees and interested parties have been given an opportunity to address the Regional Water Board at a public hearing and an opportunity to submit their written comments and recommendations to the Regional Water Board.
12. The issuance of waste discharge requirements is exempt from the California Environmental Quality Act (CEQA) of the Public Resources Code in accordance with California Water Code section 13389. Notwithstanding, the Regional Water Board has considered the policies and requirements set forth in Chapters 1 through 2.6 of CEQA (Pub. Resources Code §§ 21000-21098).
13. The Regional Water Board has considered the information in the attached Management Plan, which is part of this Order, in developing the Findings of this Order and the Fact Sheet.
14. This Order shall serve as an NPDES permit, pursuant to Clean Water Act (CWA) section 402, or amendments thereto, and shall take effect 90 days from Order adoption date provided the Regional Administrator of the United States Environmental Protection Agency (U.S.EPA) has no objections.
15. Pursuant to Water Code section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board within 30 days of adoption of the Order by the Regional Water Board. A petition must be sent to:

State Water Resources Control Board
Office of the Chief Counsel
P.O. Box 100
Sacramento, CA 95812-0100
16. This Order may be modified or alternatively revoked or reissued prior to its expiration date, in accordance with the procedural requirements of the NPDES program 40 CFR 122.41(f) & 122.62, and the Water Code § 13167.5 for the issuance of waste discharge requirements.

Such an entity can be any State or Federal facility, special district or other public or private party. (1342 U.S.C. § 402(p)(2)(E).)

21. The discharges from the Co-Permittees' MS4s, as detailed in the Fact Sheet, contribute to violations of water quality standards and are a contributor of pollutants, including impairing pollutants, to the Laguna watershed.
22. As described above, section 402(p)(3)(B) of the CWA requires that MS4 permits must "require controls to reduce the discharge of pollutants to the maximum extent practicable (MEP), including management practices, control techniques and systems, design engineering methods and such other provisions as the [U.S. EPA] Administrator or the state determines appropriate for the control of such pollutants." The State Water Resources Control Board (State Water Board)'s Office of Chief Counsel (OCC) has issued a memorandum, dated February 11, 1993, interpreting the meaning of MEP to include technical feasibility, cost, and benefit derived with the burden being on the municipality to demonstrate compliance with MEP when rejecting a particular best management practice by showing that it is not technically feasible in the locality, that its costs would exceed any benefit to be derived, or that its cost would be prohibitive. (See also *In re Petition of the Cities of Bellflower et al.* (SWRCB 2000) Order No. WQ 2000-11, p. 20.) MEP generally emphasizes pollution prevention and source control best management practices (BMPs) (as first line of defense) in combination with treatment methods as a backup (additional line of defense). Furthermore, it is recognized that the implementation of BMPs to ensure water quality protection is an iterative process. BMPs must be evaluated for success and, when necessary, additional BMPs implemented to provide required water quality protection.
23. The Co-Permittees are currently subject to Order No. R1-2003-0062 adopted on June 26, 2003.
24. The Co-Permittees have jurisdiction over and/or maintenance responsibility for their respective MS4s that they own and operate in Sonoma County. The MS4 discharges consist of storm water runoff generated from various land uses discharging into Santa Rosa Creek, the Laguna de Santa Rosa (Laguna), Mark West Creek, the lower Russian River, bay and ocean waters and other surface waters. In addition, various non-storm water discharges enter the MS4 and are discharged to surface waters. The quality and quantity of these discharges varies considerably due to the effects of land use, season, geology, and the sequence and duration of hydrologic events.
25. The previous two five-year terms of the MS4 permit provided for an increasingly robust program for all mandated components. The Co-Permittees have implemented many programs and policies intended to control the discharge of pollutants into their MS4 systems. Due to the differences in their levels of responsibility and authority, each Co-Permittee has developed and implemented its own individual program. However, where possible, consistent strategies are

implemented throughout the permit area. Examples of first-term and second-term accomplishments include: implementing a spill response and enforcement program; implementing a year-round inspection program focusing on erosion and non-storm water discharge control; conducting ongoing education and outreach activities; biological and chemical monitoring of select receiving waters; the establishment of a refined working relationship between the Co-Permittees and the Regional Water Board with respect to reducing pollutants of concern in storm water runoff; and development and implementation of the Standard Urban Storm Water Mitigation Plan (SUSMP). However, during the previous permit terms, monitoring of receiving waters has shown continued pollution concerns. Additional receiving water bodies have been included on the 303(d) list of impaired waters. During this third-term of the MS4 permit, the Co-Permittees are required to implement a more effective combination of these programs and policies and will implement additional programs as identified in this Order which will ensure that pollutant loads resulting from storm water runoff are properly controlled and managed to the MEP.

26. Permit boundary

The first term of this Order defined a permit boundary which consisted of the existing Santa Rosa city limits, areas tributary to the City, Sonoma County islands within the City limits and the City's future urban growth boundary. Many areas of the watershed were not included within the permit boundary of the first-term permit. Since these additional areas do discharge storm water runoff and do contribute, cumulatively, to the water quality impairment of downstream receiving waters, the next permit expanded the permit boundary to apply to all City and Sonoma County controlled MS4s within the Mark West Creek and Laguna de Santa Rosa watersheds as well as urban clusters outside of Healdsburg and Graton.

~~This~~ The first draft of this Order proposed to expand the current MS4 permit boundary from the Laguna de Santa Rosa and Mark West Creek watersheds as well as the area outside of Healdsburg and the Graton area, to include the entire area of Sonoma County ~~Laguna de Santa Rosa and Mark West Creek watersheds to include the entire area of Sonoma County~~ that falls within the North Coast Region. The MS4 permit boundary had been proposed for expansion for the following reasons: (1) the North Coast Region has CWA section 303(d) impaired water bodies that receive storm water runoff containing constituents of concern in areas of Sonoma County outside the Laguna de Santa Rosa and Mark West Creek watersheds, (2) total maximum daily loads (TMDLs) will be developed for these water bodies and until TMDLs are established, the impaired waters must be protected from the discharge of pollutants, (3) these additional areas of Sonoma County do discharge storm water runoff and do contribute, cumulatively, to the water quality impairment of downstream receiving waters; (4) many of these water bodies provide habitat for endangered species, (5) to encourage ~~ing the~~ Co-Permittees to provide consistent requirements and standards for development within Sonoma County, and (6) the North Coast Region has a designated area of

biological significance (ASBS) in the waters of Bodega Bay and Sonoma County has substantial coastal resources that need to be protected from new and existing sources of storm water pollution.

Sonoma County submitted comments on the first draft of this Order objecting to the proposed expansion of the permit boundary, citing cost concerns. Regional Water Board and Sonoma County staff have discussed the implementation of four primary program elements of this Order in those areas of the county that are outside the existing permit boundary, but within the Regional Water Board's jurisdiction. These four elements include (1) implementation of post-construction treatment controls, ~~such as~~including Low Impact Development (LID) and hydromodification requirements to mitigate storm water pollution for new development and redevelopment projects; (2) implementation of the Public Agency Activities Program, as detailed in Special Provisions E Part 9; (3) creation and implementation of an approved BMP program that reduces or eliminates non-storm water discharges or a prohibition on such discharges, and (4) implementation of a program to eliminate all illicit connections and illicit discharges to the MS4. Regional Water Board staff has determined that implementation of these programs county-wide within the North Coast Region would be most effective for protecting water quality. Regional Water Board staff is willing to implement these program elements under another regulatory program instead of including the expanded permit boundary in this Order.

If Regional Water Board and Sonoma County staff can reach an agreement on a management plan, Sonoma County would implement these primary programs county-wide in the North Coast Region. Several mechanisms that may be used to require the implementation of these four programs on a county-wide basis include the issuance of a waiver of waste discharge requirements or requiring enrollment of those areas of the County outside of the permit boundary of this Order under a Phase II storm water permit. In either case, Regional Water Board staff would provide an opportunity for public comment on the county-wide expansion of the four elements of the storm water program described above.

If the Regional Water Board and Sonoma County cannot reach an agreement on a management plan to implement the above programs on a county-wide basis within the North Coast Region, the Regional Water Board may reopen this Order to consider expansion of the permit boundary.

In exchange for an agreement from Sonoma County to implement the above programs county-wide in the North Coast Region, Regional Water Board staff agreed to keep the existing permit boundary. The permit boundary in this Order is the same as that in the current permit, and includes those areas of the MS4s within the Mark West Creek and Laguna de Santa Rosa watersheds that are controlled by the City of Santa Rosa and Sonoma County, in addition to County controlled MS4s located in Graton and urban clusters outside of Healdsburg ~~and Graton~~. This Order will reduce discharges from Co-Permittee owned and/or

- operated storm water infrastructure currently in place as well as future additions to the system. This Order will help provide a consistent watershed-wide effort to control all MS4 sources of pollutants to receiving waters within the watershed.
27. Storm water runoff and non-storm water discharges that enter the Co-Permittees' MS4s are regulated by this Order. An MS4 is a public storm water conveyance or system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains. An MS4 is designed or used for collecting or conveying storm water. It is not a combined sanitary sewer and is not part of a Publicly Owned Treatment Works (POTW). An MS4 does not include culverts or bridges that are intended to convey waters of the State under a roadway or structure. CWA section 402(p) and 40CFR 122.26 (a)(v) give the State authority to regulate discharges from an MS4 on a system-wide or jurisdiction-wide basis.
 28. Federal and State entities within the Co-Permittees' boundaries, and not currently named in this Order, may operate storm drain facilities and/or discharge storm water to storm drains and watercourses covered by this Order. The Co-Permittees may lack legal jurisdiction over these entities under State and Federal constitutions. Many of these entities are subject to regulation under the Phase II storm water permit program. The Regional Water Board will work with these entities to ensure the implementation of programs that are consistent with the requirements of this Order.
 29. A Co-Permittees need only comply with permit conditions relating to discharges from MS4s for which they are operators. (40 CFR 122.26(a)(3)(vi)). The Co-Permittees may perform duties required by or related to this Order in another jurisdiction if both Co-Permittees agree to this arrangement and this should be identified in the Storm Water Management Plan.
 30. This Order and its requirements are not intended to restrict or control local land use decision-making authority. The Co-Permittees retain authority to make the final land-use decisions and retain full statutory authority for deciding what land uses are appropriate at specific locations within each Co-Permittees' jurisdiction. The Regional Water Board recognizes that the Co-Permittees' land use authority allows urban developments that may generate pollutants and runoff that could impair receiving water quality and beneficial uses. The Co-Permittees are therefore responsible for considering potential storm water impacts when making planning decisions in order to fulfill the CWA requirement to reduce the discharge of pollutants in municipal storm water to MEP and to effectively prohibit non-storm water discharges into the storm sewers. This responsibility requires the Co-Permittees to exercise their legal authority to ensure that any increased pollutant loads and flows do not affect the beneficial uses of the receiving water. The Sonoma County Water Agency (Water Agency) does not have ~~broad~~ land use authority and can control activities conducted by Water Agency staff or only conducted on its own property ~~or through its flood control and stream maintenance~~

responsibilities. Therefore, not all requirements in this Order are applicable to the Water Agency.

31. This Order is not intended to prohibit the inspection or abatement of vectors by the State Department of Health Services or local vector control agencies in accordance with California Health and Safety Code section 2270 *et seq.* and section 116110 *et seq.* Certain storm water treatment controls, if not properly designed, operated or maintained, may create habitats for vectors (e.g. mosquitoes and rodents). This Order expects the Co-Permittees to closely cooperate and collaborate with local vector control agencies and the State Department of Health Services for the implementation, operation, and maintenance of storm water treatment controls in order to minimize the risk to public health from vector borne diseases.

IT IS HEREBY ORDERED that the Co-Permittees, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, and the provisions of the CWA and regulations adopted thereunder, shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. Discharges of storm water or non-storm water from the MS4 in a manner causing or contributing to a condition of pollution, contamination or nuisance (as defined in Water Code section 13050), in waters of the State are prohibited.
2. Discharges from the MS4, which cause or contribute to exceedances of receiving water quality objectives for surface waters are prohibited.
3. Discharges from the MS4 shall be in compliance with the applicable discharge prohibitions contained in the Water Quality Control Plan for the North Coast Basin (Basin Plan).
4. In accordance with the requirements of 40 CFR 122.26(d)(2)(i)(B) and 40 CFR 122.26(d)(2)(i)(F), the Co-Permittees shall prohibit illicit/illegal discharges (non-storm water) from entering into the MS4 unless such discharges are either authorized by an NPDES permit, or not prohibited in accordance with Discharge Prohibition 5, below.
5. Non-Storm Water Discharges
 - (a) Impacts to receiving waters from non-storm water flows may include increased pollutant loading, flow modification and related physical changes to receiving waters, and creation of a condition of nuisance. The Co-Permittees shall effectively prohibit non-storm discharges into the MS4 and watercourses. In lieu of a strict prohibition, a Co-Permittee may submit a plan for Executive Officer authorization that includes categories

- of non-storm water discharges and associated BMPs to minimize or eliminate those types of non-storm water discharges to the MS4.
- (b) A Co-Permittee shall require that non-storm water flows infiltrate into the ground where possible and perform public outreach and education intended to reduce or eliminate such discharges as one of the BMPs associated with each type of non-storm water discharge that they seek authorization from the Executive Officer to allow into the MS4.
 - (c) As described in A - 5(a), above, a Co-Permittee shall may submit a BMP plan to apply for authorization from the Executive Officer to allow specific non-storm water flows into the MS4. The BMP plan submitted by a Co-Permittee shall be noticed for public review prior to authorization by the Executive Officer.
 - (d) The Co-Permittees shall either have an approved BMP plan in place or prohibit the non-storm water discharges in Table 1 by May 15, 2010. The Co-Permittees shall implement Part 10 – Illicit Connections and Discharges Elimination Program to effectively prohibit non-storm water discharges into the MS4 until May 15, 2010, or until an approved BMP plan or prohibition is in place, whichever occurs earlier.
 - (e) The Executive Officer will consider authorizing the discharge of non-storm water flows that are listed below in Table 1 (BMPs for Non-Storm Water Discharges), and are not a significant source of pollutants. Upon request by a Co-Permittee, the Executive Officer may consider authorizing the discharge of additional categories of non-storm water flows in addition to those described in Table 1.

Table 1. BMPs for Non-Storm Water Discharges

Type of Discharges:	Conditions under which allowed:	BMP plans shall include, but not be limited to:
Stream diversions permitted by the State or Regional Water Board where such flows <u>enter are intentionally diverted into</u> the MS4.	Shall comply with all conditions in the Executive Officer's authorization.	Erosion, sediment, and velocity controls to keep the diverted flows from discharging sediment to the MS4 and to prevent storm drain sediment scour.
Natural springs and rising ground water that are <u>intentionally</u> diverted into the MS4.	<ol style="list-style-type: none"> 1. Shall comply with all conditions in the Executive Officer's authorization. 2. Ground water dewatering (from construction or pumped sources) may require a separate NPDES permit. 	<ol style="list-style-type: none"> 1. No sources of ground water contamination near the diversion site. 2. Segregate flow to prevent introduction of pollutants. 3. Sediments <u>removed from</u> in discharge through settling or filtration. 4. Control flow rate of discharge to minimize erosion potential. 5. BMPs such as sand bags shall be utilized to prevent erosion and sediment transport.

Type of Discharges:	Conditions under which allowed:	BMP plans shall include, but not be limited to:
		6. All sediments shall be collected and disposed of in a legal and appropriate manner.
Uncontaminated ground water infiltration into structures [as defined by 40 CFR 35.2005(20)] ¹ (Utility vault dewatering requires a separate NPDES permit) where flows are diverted into the MS4.	Shall comply with all conditions in the Executive Officer's authorization.	No sources of ground water contamination near the extraction site.
Natural Overflows from riparian habitats or wetlands where such flows are <u>intentionally</u> diverted into the MS4.	<ol style="list-style-type: none"> 1. Shall comply with all conditions in the Executive Officer's authorization. 2. Provided that all necessary permits or authorizations are received prior to diverting the flow. 	Dewatering that would impact beneficial uses of wetlands and other state waters shall be prohibited unless approved by the Regional Water Board.
Flows from emergency fire fighting activity.	No authorization from the Executive Officer needed.	<ol style="list-style-type: none"> 1. BMPs shall be used whenever possible. 2. Pooled water after fire shall be controlled (non-emergency repair or training flows are not allowed). 3. Runoff controls shall be considered for fires at industrial or other facilities where hazardous materials may be onsite.
Flows from fire fighting training and equipment repair activities.	Shall comply with all conditions in the Executive Officer's authorization.	<ol style="list-style-type: none"> 1. Must be dechlorinated using aeration and/or sodium thiosulfate and/or other appropriate means and/or be allowed to infiltrate into the ground. 2. Sediment and solids removed from discharge through settling or filtration. 3. Control flow rate of discharge to minimize erosion potential. 4. BMPs such as sand bags shall be utilized to prevent erosion and sediment transport.

¹ NPDES permit for ground water dewatering is required within the North Coast Region including Sonoma County.

Type of Discharges:	Conditions under which allowed:	BMP plans shall include, but not be limited to:
		5. BMPs including education materials, structural containment when possible, infiltration and evaporation when possible shall be used for controlling training flows.
Fire hydrant testing.	Shall comply with all conditions in the Executive Officer's authorization.	<ol style="list-style-type: none"> 1. Must be dechlorinated using aeration and/or sodium thiosulfate and/or other appropriate means and/or be allowed to infiltrate to the ground. 2. Utilize BMPs to increase the distance and removal of chlorine by volatilization before discharge to a storm drain.
Discharges from potable water sources. ²	<ol style="list-style-type: none"> 1. Shall comply with all conditions in the Executive Officer's authorization. 2. Planned discharges from water lines and potable water sources shall be dechlorinated, pH adjusted if necessary, reoxygenated, and volumetrically and velocity controlled to prevent resuspension of sediments. 	<ol style="list-style-type: none"> 1. Must be dechlorinated using aeration and/or sodium thiosulfate and/or other appropriate means and/or be allowed to infiltrate into the ground. 2. Sediment and solids removed from discharge through settling or filtration. 3. Control flow rate of discharge to minimize erosion potential. 4. BMPs such as sand bags shall be utilized to prevent erosion and sediment transport. 5. All sediments shall be collected and disposed of in a legal and appropriate manner.
Utility vault dewatering.	<ol style="list-style-type: none"> 1. Shall comply with all conditions in the Executive Officer's authorization. 2. Coverage under Order No. 2006-0008-DWQ or as updated may be 	<ol style="list-style-type: none"> 1. Segregation of flow to prevent introduction of pollutants. 2. Sediment removal through settling or filtration.

² The term applies to low volume, ~~incidental and infrequent, and/or incidental~~ releases that are innocuous from a water quality perspective. ~~It does not cover scheduled discharges by potable water purveyors for the (i) dewatering or hydro testing or flushing of water supply and distribution mains, or (ii) dewatering or draining of reservoirs or water storage facilities.~~ Releases may occur for discharges from potable water sources only with the implementation of appropriate BMPs, dechlorination prior to discharge. Discharges from utility vaults shall be conducted under coverage of a separate NPDES permit specific to that activity.

Type of Discharges:	Conditions under which allowed:	BMP plans shall include, but not be limited to:
	<p>sanitary sewer or land is not available. Swimming pool discharges must be dechlorinated, pH adjusted if necessary, aerated to remove chlorine if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments.</p> <p>3. Cleaning waste water and filter back wash shall not be discharged to the MS4. Water that has been hyperchlorinated shall not be discharged to the MS4, even after de-chlorination. No discharges are allowed containing salts in excess of Water Quality Standards.</p> <p>4. Chlorine residual in discharge shall not exceed 0.02mg/L.</p>	
<p>Non-commercial car washing by residents or non-profit organizations.</p>	<p>Shall comply with all conditions in the Executive Officer's authorization.</p>	<ol style="list-style-type: none"> 1. Preferred area is at commercial carwash or in an area where wash water infiltrates. 2. Pumps, vacuums or physical routing BMPs may be used to direct water to areas for infiltration or re-use.
<p>Pooled storm water from treatment BMPs³ <u>that are intentionally discharged to the MS4 as part of due to maintenance activities or BMP failure.</u></p>	<p>Shall comply with all conditions in the Executive Officer's authorization.</p>	<p>All storm water BMPs shall at a minimum be maintained at a frequency as specified by the manufacturer. Storm water treatment BMPs may be drained to the MS4 under this Order if the discharge is not a source of pollutants. The discharge shall cease before the discharge has become a source of a pollutant(s), (bottom</p>

³ All storm water BMPs shall at a minimum be maintained at a frequency as specified by the manufacturer, and designed to drain within 72 hours of the end of a rain. Storm water treatment BMPs may be drained to the MS4 under this Order if the discharge is not a source of pollutants. Sediments shall be disposed of properly, in compliance with all applicable local, state, and federal policies, acts, laws, regulations, ordinances, and statutes.

- RWL Compliance Report shall be included with the Annual Report, unless the Regional Water Board Executive Officer directs an earlier submittal.
- (b) The RWL Compliance Report shall describe BMPs currently being implemented and the additional BMPs that will be implemented, to prevent or reduce the discharge of any pollutants that are causing or contributing to exceedances of WQS.
 - (c) The RWL Compliance Report shall include a BMP implementation schedule.
 - (d) Within 30 days following approval of the RWL Compliance Report, the approved or modified suite of BMPs, the implementation schedule, and any additional monitoring required shall be implemented.
 - (e) Modifications to the RWL Compliance Report required by the Regional Water Board Executive Officer shall be submitted within 30 days of notification unless directed otherwise by the Regional Water Board Executive Officer.
 - (f) The Co-Permittee(s) shall revise the Management Plan to incorporate the approved modified BMPs, implementation schedule, and any additional monitoring required, and implement the revised monitoring program according to the approved schedule.

4. The Co-Permittee(s) will have to implement alternative BMPs or combinations of BMPs and will repeat the procedure set forth above ~~to comply with the receiving water limitations~~ for continuing or recurring exceedances of the same WQS unless directed otherwise by the Regional Water Board Executive Officer. The Co-Permittees shall not be expected to continue using the same specific BMPs repetitively if they have been shown to be ineffective.

C. TOTAL MAXIMUM DAILY LOAD FOR DISCHARGES TO THE LAGUNA DE SANTA ROSA

- 1. The 1995 Waste Reduction Strategy for the Laguna de Santa Rosa Total Maximum Daily Load (TMDL) is discussed in the Fact Sheet. It was removed from this section to clarify that the goals are not enforceable.

Table 2. Laguna TMDL Net Load Goals for Total Nitrogen (pounds/season) in Urban Runoff. This table has been moved to the Fact Sheet and intentionally left blank in this Order.

Table 3. Laguna TMDL Net Load Goals for Total Ammonia (pounds/season) in Urban Runoff. This table has been moved to the Fact Sheet and intentionally left blank in this Order.

D. STORM WATER QUALITY MANAGEMENT PROGRAM IMPLEMENTATION

PART 1 – General Requirements

1. Each Co-Permittee shall, at a minimum, adopt and implement applicable terms of this Order within the permit boundary. The Co-Permittees shall be responsible for program coordination as described in this Order as well as compliance with applicable portions of this Order within the permit boundary. This Order shall be implemented no later than January 1, 2010, unless a later date has been specified for a particular provision in this Order and provided the U.S. EPA has no objections.
2. Each Co-Permittee shall comply with the requirements of 40 CFR 122.26(d)(2) and implement programs and control measures so as to reduce the discharges of pollutants in storm water to the MEP and achieve water quality objectives.

PART 2 – Legal Authority

1. Co-Permittees shall possess the necessary legal authority to prohibit, including, but not limited to, the following:
 - (a) Illicit connections and illicit discharges;
 - (b) The discharge of non-storm water to the MS4 from the following (at a minimum):
 - (1) Washing or cleaning of gas stations, auto repair garages, or other types of automotive service facilities;

- (d) Control pollutants, including potential contributions from discharges of storm water runoff associated with industrial activities, including construction activities, to its MS4, and control the quality of storm water runoff from these sites;
 - (e) Carry out all inspections, surveillance and monitoring procedures necessary to determine compliance and non-compliance with permit conditions, including the prohibition on illicit discharges to the MS4;
 - (f) Require the use of control measures to prevent or reduce the discharge of pollutants; and
 - (g) Require that treatment control BMPs be properly operated and maintained.
3. Each Co-Permittee has a currently adopted Storm Water Quality Ordinance that prohibits the discharge of pollutants to their MS4 without proper authorization. These existing ordinances may not be adequate to implement requirements of this Order. Therefore, each Co-Permittee will update its Storm Water Quality Ordinance to be able to enforce all requirements of this Order, no later than ~~October 1, 2010~~April 1, 2011.
 4. Each Co-Permittee shall submit no later than ~~October 1, 2010~~April 1, 2011, a statement by its legal counsel that the Co-Permittee has obtained and possesses all necessary legal authority to comply with this Order through adoption of ordinances and/or municipal code modifications.

PART 3 – Fiscal Resources

1. The Co-Permittees shall implement the activities required to comply with the provisions of this Order.⁵ Each Co-Permittee shall:
 - (a) Submit an Annual Budget Summary that shall include:
 - (1) The storm water budget for the prior report year, using actual expenditures, including written explanation where necessary, for the implementation of the storm water program.
 - (2) The storm water budget for the upcoming report year, using estimated expenditures, with written explanation where necessary, for the implementation of the storm water program.
 - (3) The Annual Budget Summary shall identify for both the prior report year (actual expenditure) and the upcoming report year (estimated expenditure) the following specific categories:
 - (A) Storm water program management activities and overall administrative costs;
 - (B) Storm water program required activities implementation (storm water related activities only). Provide figures

⁵ The sources of funding may be the general funds, and/or Benefit Assessment, plan review fees, permit fees, industrial and commercial user fees, revenue bonds, grants or other similar funding mechanisms.

describing the breakdown of expenditures for the categories below:

- (i) Illicit connection/illicit discharge prevention;
- (ii) Development planning program;
- (iii) Development construction program;
- (iv) Construction inspection activities;
- (v) Industrial/Commercial inspection activities;
- (vi) Public agency activities;
- (I) Inspection and maintenance of structural BMPs and treatment control BMPs;
- (II) Municipal street sweeping for commercial/industrial land uses only;
- (III) Catch basin clean-outs (include dumping fees separately);
- (IV) Storm drain clean-outs (include dumping fees separately);
- (V) Other costs (describe);
- (vii) Public information and participation program;
- (viii) Monitoring program; and
- (ix) Miscellaneous expenditures (describe).

PART 4 – Modifications/Revisions

1. No later than ~~October 1, 2010~~ April 1, 2011 each Co-Permittee shall modify storm water management programs, protocols, practices, and municipal codes to make them consistent with the requirements herein, unless otherwise specified in this Order.
2. The Regional Water Board shall consider approval of requested modifications to the Management Plan annually or ~~less frequently~~ as the Regional Water Board decides needed is necessary.

PART 5 – Responsibilities of the Co-Permittees

1. Each Co-Permittee is required to comply with the requirements of this Order applicable to MS4 discharges within its boundaries. Each Co-Permittee shall:
 - (a) Comply with the requirements of this Order and any modifications thereto;
 - (b) Participate in intra-agency coordination (e.g., Planning Department, Fire Department, Building and Safety, Code Enforcement, Public Health, Parks and Recreation, and others) necessary to successfully implement the provisions of this Order;
 - (c) Report, in addition to the Annual Budget Summary, any supplemental dedicated budgets for the same categories;

- (d) Participate in the Sonoma County Environmental Crimes Task Force, when possible;
- (e) Provide technical and administrative support for committees that will be organized to implement this Order and its requirements;
- (f) Evaluate, assess, and synthesize the results of the monitoring program and the effectiveness of the implementation of BMPs; and
- (g) Provide personnel and fiscal resources for the collection, processing and submittal to the Regional Water Board of monitoring and annual reports, and summaries of other reports required under this Order.

E. SPECIAL PROVISIONS

PART 1 – General Requirements

1. This Order and the provisions herein are intended to assist the City of Santa Rosa, County of Sonoma, and the Sonoma County Water Agency in developing, implementing and achieving a timely, comprehensive, cost-effective storm water pollution control program to reduce the discharge of pollutants in storm water to the MEP and achieve WQS. ~~for the City of Santa Rosa, County of Sonoma, and the Sonoma County Water Agency.~~
2. The current Management Plan and updates, when developed by the Co-Permittees and approved by the Regional Water Board, after public review, are incorporated into this Order and are fully enforceable.
3. Best Management Practice Program Substitution
 - (a) The Regional Water Board Executive Officer may approve any specific BMP program substitution ~~(except BMP program substitution specified elsewhere in this Order (see Special Provisions Part 6))~~ upon petition by a Co-Permittee(s) and after public notice, if the Co-Permittee can document that:
 - (1) The proposed alternative BMP program will meet or exceed the objective of the original BMP program in the reduction of storm water pollutants;
 - (2) The fiscal burden of the original BMP program is substantially greater than the proposed alternative and does not achieve a substantially greater improvement in storm water quality; and
 - (3) The proposed alternative BMP program will be implemented within a similar period of time.
4. Best Management Practice Substitution
 - (a) The Co-Permittees may substitute a site-specific BMP and will notify the Regional Water Board, for Executive Officer review, keep records of any site-specific BMP substitution and document the reasoning for the substitution, including a demonstration that:

- (1) The proposed alternative BMP will meet or exceed the objective of the original BMP in the reduction of storm water pollutants;
- (2) The fiscal burden of the original BMP is greater than the proposed alternative and does not achieve a greater improvement in storm water quality; and
- (3) The proposed alternative BMP will be implemented within a similar period of time.

PART 2 – Public Information and Participation Program (PIPP)

1. The Co-Permittees shall implement a Public Information and Participation Program (PIPP) that includes, but is not limited to, the requirements listed in this section. The Co-Permittees shall be responsible for developing and implementing the PIPP, and shall coordinate with other entities (such as Sonoma State University and the Santa Rosa Junior College) to implement specific requirements. The objectives of the PIPP are as follows:
 - (a) To measurably increase the knowledge of the target audience about the MS4, the adverse impacts of storm water pollution on receiving waters and potential solutions to mitigate the impacts;
 - (b) To measurably change behavior of target audiences regarding waste disposal and activities that generate storm water pollution by encouraging implementation of appropriate solutions;
 - (c) To involve and engage communities in Sonoma County to participate in mitigating the impacts of storm water pollution; and
 - (d) To regularly review PIPP program elements to ensure that efforts are effective in educating the public and changing behavior. At a minimum, the Co-Permittees shall devote one regular MS4 Co-Permittee meeting per year to discuss PIPP program effectiveness.
2. Residential Program
 - (a) "No Dumping" Message
 - (1) Each Co-Permittee shall label all storm drain inlets in parking lots, gutters and streets that they own with a legible "no dumping" message. In addition, signs with prohibitive language discouraging illegal dumping shall be posted at selected designated public access points to creeks, and channels where dumping has occurred. Signage and storm drain messages shall be legible and maintained. The Co-Permittees shall label 20 percent of all unlabeled storm drain inlets each year, with a goal of 100 percent of all storm drain inlets to be labeled by October 1, 2013.
 - (b) Public Reporting
 - (1) Co-Permittees shall include contact information in outreach efforts for reporting clogged catch basin inlets and illicit discharges/dumping, faded or missing catch basin labels, and general storm water management information. This information

- (5) The Co-Permittees shall make impressions on at least 25% of the permanent population within the permit area per year relating to storm water quality, with a minimum of (15%) impressions via newspaper, local TV access, billboard, local radio, internet access, and/or other advertising techniques or media;
 - (6) The Co-Permittees, shall provide schools with materials, including, but not limited to, videos, live presentations, and other information necessary to educate a minimum of 40% of all school children (K-12) every 2 years on storm water pollution;
 - (7) The Co-Permittees shall develop and implement a strategy to measure the effectiveness of school educational programs. The protocol shall include assessment of students' knowledge of the adverse impacts of storm water pollution and its solutions before and after educational programs are conducted. The strategy shall be implemented no later than ~~October 1, 2010~~September 1, 2011; and
 - (8) The Co-Permittees shall develop and implement a behavioral change assessment strategy no later than October 1, 2012, to assess whether the PIPP is demonstrably effective in changing the behavior of the public.
- (d) Pollutant-Specific Outreach
- (1) The Co-Permittees shall coordinate to develop outreach programs that focus on watershed-specific pollutants identified in Table 1 in the Fact Sheet (Impaired Water Bodies) no later than October 1, 2011.
3. Businesses Program
- (a) Corporate Outreach
 - (1) The Co-Permittees shall work with other regional or statewide agencies and associations such as the California Storm Water Quality Association (CASQA), to develop and implement a Corporate Outreach program to educate and inform corporate and/or franchise operators and local facility managers about storm water regulations and BMPs. The program shall target a minimum of four retail gasoline outlets (RGOs) franchisers and cover a minimum of 80% of RGO franchisees in the county, four retail automotive parts franchisers, two home improvement center franchisers and six restaurant franchisers. Corporate Outreach for all target facilities shall be conducted not less than once during the term of this Order, with the first outreach contact to begin no later than October 1, 2013. At a minimum, this program shall include:
 - (A) Meetings with corporate management and/or facility operators and local facility managers to explain storm water regulations; and

- (B) Distribution and discussion of educational material regarding storm water pollution and BMPs, and provide managers with recommendations to facilitate employee and facility compliance with storm water regulations.
- (b) Business Assistance Program
 - (1) The Co-Permittees shall implement a Business Assistance Program to provide technical resource assistance to small businesses to reduce the discharge of pollutants in storm water. The Co-Permittees shall develop a Business Assistance Program no later than ~~October 1, 2011~~April 1, 2012. The Program shall include:
 - (A) A website with telephone and e-mail contact information to arrange for staff consultation regarding the responsibilities of businesses to reduce the discharge of pollutants, pollution prevention methods and BMPs, and available guidance material; and
 - (B) Distribution of storm water pollution prevention education materials to operators of auto repair shops, car wash facilities (including mobile car detailing), mobile carpet cleaning services, commercial pesticide applicator services and restaurants.

PART 3 – Industrial/Commercial Facilities Program

1. Using local ordinances, each Co-Permittee shall require implementation of pollutant reduction and control measures at industrial and commercial facilities, with the objective of reducing pollutants in storm water. Except where specified otherwise in this Order, pollutant reduction and control measures may include structural treatment control, source control BMPs, and operation and maintenance procedures, which may be applied before, during, and/or after pollutant generating activities. At a minimum, the Industrial/Commercial Facilities Program shall include requirements to:
 - (a) Identify applicable facilities;
 - (b) Inspect;
 - (c) Ensure compliance with municipal ordinances at industrial and commercial facilities that are critical sources of pollutants in storm water;
 - (d) Refer non-filers under the Industrial General Permit to the Regional Water Board; and
 - (e) Track local compliance and inspections.
2. Inventory of Critical Sources
 - (a) Each Co-Permittee shall maintain a database or watershed-based inventory ~~or database~~ of facilities within its jurisdiction that are critical sources of storm water pollution. At a minimum, the following critical sources to be tracked are summarized below.

- (1) Commercial Facilities:
 - (A) Restaurants;
 - (B) Automotive service facilities including those in dealerships;
 - (C) Retail gasoline outlets - RGOs;
 - (D) Nurseries⁶ and landscape material yards;
 - (E) Facilities that store, use or transport pre-production plastic pellets (nurdles) once information is observed by or provided to the Co-Permittees that the facility is discharging or threatening to discharge these materials to the MS4;
 - (F) Automotive dealerships, rental businesses, and other businesses where commercial car washing occurs; and
 - (G) Other commercial facilities specifically identified by the Co-Permittees or Regional Water Board staff that are found to be discharging ~~may discharge pollutants~~ nutrients or sediments to the MS4 in levels that may result in a condition of pollution or nuisance ~~of concern~~.
- (b) Each Co-Permittee shall include in its inventory of critical sources the following minimum fields of information for each industrial and commercial facility:
 - (1) Name of facility and name and contact information of owner/operator;
 - (2) Address of facility; and
 - (3) A narrative description, including Standard Industrial Classification (SIC) system/North American Industry Classification System (NAICS) codes, that best describe the industrial activities performed and principal products used at each facility, and status of exposure to storm water.
- (c) The Regional Water Board recommends that Co-Permittees include additional fields of information, such as material usage and/or industrial output, and discrepancies between SIC system/NAICS code designations (as reported by facility operators) and identify the actual type of industrial activity that has the potential to pollute storm water. In addition, the Regional Water Board recommends the use of an automated database system, such as a Geographical Information System (GIS) or Internet-based system.
- (d) Each Co-Permittee shall update its inventory of critical sources at least annually. The update may be accomplished through collection of new information obtained through field activities or through other readily available inter and intra-agency informational databases (e.g. business

⁶ For the implementation of this Order, commercial nurseries are nurseries that sell plants, or planting and gardening products and have built in drains or other conveyance systems to the MS4. Nurseries which drain to the sewer are not included. Businesses that sell plants, or planting and gardening products but do not have built in storm drains, but may discharge non-storm water flows to the MS4 drains in the parking lot or street, are not included and shall be addressed using Part 10 – Illicit Connections and Illicit Discharges Elimination Program.

The inspections shall verify that typical BMPs in Table 7 (BMPs at Nurseries, Landscape Bulk Material Yards, and Nursery Centers) are being implemented, unless the pollutant generating activity does not occur.

Table 7. BMPs at Nurseries, Landscape Bulk Material Yards, and Nursery Centers

Pollutant-Generating Activity	BMP Narrative Description	2003¹⁰ California Stormwater BMP Handbook Industrial and Commercial BMP Identification No.
Unauthorized Non-Storm Water Discharges	Effective elimination of non-storm water discharges	SC-10
Outdoor Loading/Unloading	Implementation of effective outdoor loading/unloading practices	SC-30
Outdoor Liquid Storage	Implementation of effective outdoor liquid storage source controls and practices	SC-31
Outdoor Equipment Operations	Implementation of effective outdoor equipment source control devices and practices	SC-32
Outdoor Storage of Raw Materials	Implementation of effective source control practices and structural devices	SC-33
Building and Grounds Maintenance	Implementation of effective facility maintenance practices	SC-41

- (f) Ensure Compliance of Critical Sources
 - (1) BMP Implementation: Facilities shall implement applicable source control BMPs in Appendix D, California Stormwater Industrial and Commercial BMP Handbook (2003¹¹). In the event that a Co-Permittee determines that a BMP is infeasible at any site, the Co-Permittee shall require implementation of similar BMPs that will achieve the equivalent reduction of pollutants in the storm water discharges. Likewise, for those BMPs that are not adequate to achieve WQS, Co-Permittees shall require additional site-specific controls.
 - (2) Impaired Waters: For critical sources that discharge to CWA section 303(d) listed impaired water bodies, the Co-Permittees shall require operators of facilities identified by the Co-Permittees

¹⁰ Including future updates and revisions.

¹¹ Including future updates and revisions.

or Regional Water Board staff to implement additional controls as needed to reduce pollutants in storm water runoff that may be causing or contributing to exceedances of WQS.

- (3) Progressive Enforcement: Each Co-Permittee shall implement a progressive enforcement policy to ensure that facilities are brought into compliance with all storm water requirements within a reasonable time period as specified below.
 - (A) In the event that a Co-Permittee determines, based on an inspection, that an operator has failed to adequately implement all necessary BMPs, that Co-Permittee shall take progressive enforcement actions which, at a minimum, shall include a follow-up inspection within four weeks from the date of the initial inspection.
 - (B) In the event that a Co-Permittee determines that an operator has failed to adequately implement BMPs after a follow-up inspection, that Co-Permittee shall take further enforcement action as established through authority in its municipal code and ordinances or through the judicial system.
 - (C) Each Co-Permittee shall maintain records and make them available on request to the Regional Water Board, including inspection reports, warning letters, notices of violations, and other enforcement records, demonstrating a good faith effort to bring facilities into compliance.

4. Interagency Coordination

- (a) A Co-Permittee may refer a violation(s) of municipal storm water ordinances and the Water Code resulting from discharges of storm water or non-storm water into the MS4 by industrial and commercial facilities to the Regional Water Board provided that that Co-Permittee has made a good faith effort of progressive enforcement. At a minimum, a Co-Permittee's good faith effort must be documented with:
 - (1) Two follow-up inspections; and
 - (2) Two warning letters, correction notices or notices of violation.
- (b) Referral of violations of the Industrial General Permit, including requirements to file a notice of intent or no exposure certification: For those facilities in violation of the municipal storm water ordinance and subject to the Industrial General Permit, Co-Permittees may escalate referral of such violations to the Regional Water Board after one inspection and one written notice (copied to the Regional Water Board) to the operator regarding the violation. In making such referrals, Co-Permittees shall include, at a minimum, the following documentation:
 - (1) Name of the facility;
 - (2) Operator of the facility;
 - (3) Owner of the facility;
 - (4) WDID Number (if available);

- (b) Minimize the percentage of impervious surfaces on land development projects and implement mitigation measures to mimic the pre-development water balance through infiltration, evapotranspiration, and capture and reuse of storm water. Pre-development water balance determinations shall include assessments of runoff stored on the surface in natural depressions, runoff captured by topsoil and debris layers and runoff evapotranspiration by vegetation.
- (c) Minimize pollutant loadings from impervious surfaces such as roof-tops, parking lots, and roadways through the use of properly designed, technically appropriate BMPs (including source control BMPs such as trash enclosures, good housekeeping practices), Low Impact Development strategies, and treatment control BMPs.
- (d) Properly select, design and maintain treatment control BMPs and hydromodification control BMPs to address pollutants that are likely to be generated by land development, minimize post-development surface flows and velocities, assure long-term functionality of the BMPs, and avoid the breeding of vectors.¹²
- (e) Prioritize the selection of post-development BMPs to remove storm water pollutants specific to the proposed development, minimize storm water runoff volume and velocity, and beneficially reuse storm water to support an integrated approach to protecting water quality and managing water resources. BMPs currently required in the existing SUSMP manual and subsequent updates of the SUSMP manual, shall be selected in the following order of preference:
 - (1) Low Impact Development strategies (see the following Special Provisions E. Part 5) Including:
 - (A) Bioretention BMPs such as raingardens, green roofs, tree boxes (water quality treatment only), vegetated planters, and bioretention swales;
 - (B) Non-mechanical landscape/soil filtration based BMPs:
 - (i) Infiltration and dispersal BMPs (including porous pavement where no underdrain is installed);
 - (ii) BMPs that incorporate vegetation to remove pollutants and reduce storm water runoff volume;
and
 - (iii) BMPs that store and reuse storm water runoff.
 - (C) Approved modular/proprietary treatment control BMPs that are based on bioretention or LID concepts and that meet pollution removal goals;
 - (D) Regional Water Board and Co-Permittee approved offset project; or
 - (E) Detention ponds (hydromodification control only).

¹² Treatment BMPs when designed to drain within 72 hours of the end of rainfall minimize the potential for breeding of vectors.

5. Entitlement Process

- (a) Each Co-Permittee shall incorporate into its entitlement process standard procedures that require consideration of potential storm water quality impacts early in the planning process of any project that meets the criteria of this Order (E. Standard Provisions, Part 4, section 6) for new development and redevelopment projects. The Co-Permittees shall clearly demonstrate the developer and Co-Permittee considered storm water quality site issues before the facilities/projects reached final design. The Co-Permittees must demonstrate involvement in the conceptual design of storm water quality protection at either of two different points in the project planning and permitting process:
- (1) During the discretionary approval process of a proposed project, when the Co-Permittee must exercise judgment or deliberation in order to approve or disapprove a development or significant redevelopment project; or
 - (2) During the ministerial approval process of issuing a grading, building, demolition, or similar "construction" permits in which only fixed standards or objective measures are applied.

6. New Development and Redevelopment Projects: for purposes of this Order, impervious surface is defined as an area that has been modified in such a way as to reduce storm water runoff capture, treatment and percolation into underlying soils. For example, such surfaces include rooftops, walkways, plastic liners and parking areas. Permeable pavements shall be considered impervious for this section if they have subdrains, ~~without a properly engineered soil-based filter medium to provide sufficient treatment of the storm water prior to entering the MS4.~~ For purposes of this Order, structural areas that are covered under a green or eco-roof shall not be considered impervious surface.

- (a) New development and redevelopment projects that are required to implement post-construction treatment controls to mitigate all project-related storm water pollution include:
- (1) All development and redevelopment projects with creating or replacing a combined total of 1.0 acre or greater more of impervious surface;
 - (2) Streets, roads, highways, and freeway construction or reconstruction of creating or replacing a combined total of 10,000 ft² or more of impervious surface¹³;
 - (3) All development and redevelopment projects that include four or more houses;
 - (4) Industrial parks creating or replacing a combined total of with 10,000 ft² or more of impervious surface;

¹³ See exception in Part 4 – 6(b)(3).

- (5) Commercial strip malls creating or replacing a combined total of with 10,000 ft² or more of impervious surface;
 - (6) Retail gasoline outlets creating or replacing a combined total of with 10,000 ft² or more of impervious surface;
 - (7) Restaurants (SIC 5812) creating or replacing a combined total of with 10,000 ft² or more of impervious surface;
 - (8) Parking lots (if not included as part of a project type listed above) creating or replacing a combined total of with 10,000 ft² or more of impervious surface, or with 25 or more parking spaces; and
 - (9) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534 and 7536-7539) creating or replacing a combined total of with 10,000 ft² or more of impervious surface; and.
- ~~(9) Single-family hillside homes.~~
- ~~(A) Measures to be implemented:~~
- ~~(i) Conserve natural areas;~~
 - ~~(ii) Protect slopes and channels;~~
 - ~~(iii) Divert roof runoff to vegetated areas before discharge, unless the diversion would result in slope instability as determined by a registered engineer or geologist; and~~
- (i) Direct surface flow to vegetated areas before discharge unless the diversion would result in slope instability as determined by a registered engineer or geologist.
- (b) Redevelopment projects that are not required to implement post-construction treatment controls include:
- (1) Routine maintenance activities¹⁴ that are conducted to maintain original line and grade, hydraulic capacity, and original purpose of facility (ex. resurfacing existing roads and parking lots);
 - (2) Emergency redevelopment activities required to protect public health and safety¹⁵;
 - (3) Projects undertaken solely to install or reinstall public utilities (ex. sewer or water lines) and do not include any additional street or road development or redevelopment activities;
 - (4) Reconstruction projects, undertaken by a public agency, of streets or roads remaining within the original footprint and less than 48 feet wide¹⁶; and
 - (5) Stand alone pedestrian pathways, trails, and off-street bicycle lanes.

¹⁴ Impervious surface replacement, such as the reconstruction of parking lots or excavation to roadway subgrades, is not a routine maintenance activity.

¹⁵ The Regional Water Board must agree that the activities are needed to protect public health and safety to qualify for this exception.

¹⁶ Measured from face-of-curb to face-of-curb.

7. **Effective Date:** The updated New Development and Redevelopment sizing requirements referenced above shall apply to projects or project phases that have not received tentative tract map, use permit or other permit prior to ~~October~~June 1, 2010.

PART 5 – New Development/Redevelopment Integrated Water Quality/Resource Plan

1. The requirements in Part 5 – New Development/Redevelopment Integrated Water Quality/Resource Plan apply to both public and private projects.
2. The Co-Permittees shall develop a new development and redevelopment integrated water quality and water resource plan, for Executive Officer approval, which includes an LID manual, post-construction treatment BMP choice criteria, and a hydromodification control and mitigation plan. The integrated water quality/resource plan shall be included in an updated SUSMP manual, and shall include the following:
 - (a) **Low Impact Development Measures**
 - (1) All new development and redevelopment projects identified in Special Provisions E Part 4 shall integrate LID principles into project design. LID is a storm water management and land development strategy that emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect predevelopment hydrologic functions.
 - (2) The Co-Permittees shall initiate SUSMP guidance intended to formally prioritize LID treatment BMPs consistent with Part 5 - 2(b)(2) for new development and redevelopment projects (both public and private) by January 1, 2010. The Co-Permittees can comply with this requirement by adopting a resolution or issuing a guidance letter.
 - (3) The Co-Permittees shall develop and/or adopt, and implement a comprehensive LID technical guidance manual approved by the Regional Water Board Executive Officer no later than October 1, 2011, for use by land planners, engineers and developers for both public and private development and redevelopment projects. The LID guidance manual shall include objectives and specifications for integration of LID strategies into:
 - (A) Site assessment;
 - (B) Site planning and layout;
 - (C) Vegetative protection, revegetation, and maintenance;
 - (D) On-site soil protection with the goals of reducing soil compaction, retaining topsoil and facilitating runoff capture;
 - (E) Retention of natural runoff infiltration, storage and evapotranspiration rates;
 - (F) Techniques to minimize land disturbance;

- (G) Techniques to implement LID measures;
 - (H) LID BMP design guidance;
 - (I) LID BMP maintenance guidance;
 - (J) Integrated water resources management practices;
 - (K) LID design and flow modeling guidance;
 - (L) Hydrologic analysis; and
 - (M) LID offset credits.
- (4) The Co-Permittees shall provide Regional Water Board staff quarterly or more frequently if needed, verbal updates on the progress of the LID technical guidance manual and invite Regional Water Board staff to all meetings held to develop the LID technical guidance manual.
- (5) The Co-Permittees shall facilitate implementation of LID by providing key industry, regulatory, and other stakeholders with information regarding LID objectives and specifications contained in the LID technical guidance manual (Part 5) through an LID training program. The LID training program shall begin by April 1, 2012, and include the following:
- (A) LID targeted sessions and materials for builders, design professionals, regulators, resource agencies, and stakeholders that describe LID techniques;
 - (B) Information, data, materials, and case studies regarding national efforts and local experience gained through LID pilot projects and demonstration projects;
 - (C) Guidance on how to integrate LID requirements into the local regulatory program(s) and requirements;
 - (D) Guidance on how to integrate LID measures at various project scales; and
 - (E) Guidance on the relationship among LID strategies, source control BMPs, treatment control BMPs, and hydromodification control requirements.
- (b) Post-Construction BMP Choice Methodology
- (1) The Co-Permittees shall ensure that all storm water runoff from projects that meet the new development and redevelopment criteria in Part 4 and/or the hydromodification criteria in Part 5_2(c), below, is treated using LID design and landscape-based BMPs. For purposes of this section, LID priority projects identified in Part 5 – 2(b)2(A) and (B) below shall be designed for the treatment criteria (defined in Part 4 – 4(a)) and shall be designed so as to not exceed the pre-development water balance for flows up to the treatment design storm.
- ~~(2) If a project cannot comply with Part 5 – 2(b)(1) and substitute BMPs are approved for the project, the Co-Permittees shall document justification for the substitution and retain the records until adoption of an updated Order or until the project is constructed, whichever is longer.~~

- ~~(3)~~(2) The priority for approval of post-construction BMPs by the Co-Permittees shall be given in the following order:
- (A) Bioretention BMPs such as raingardens, green roofs, tree boxes (water quality treatment only), vegetated planters, and bioretention swales;
 - (B) Other Low Impact Development strategies that are based on~~include~~ the following concepts:
 - (i) Non-mechanical landscape/soil filtration based BMPs;
 - (ii) Infiltration and dispersal BMPs (including porous/pervious pavements where no underdrain is installed);
 - (iii) BMPs that incorporate vegetation to remove pollutants and reduce storm water runoff volume; and
 - (iv) BMPs that store and reuse storm water runoff.
~~(iv) BMPs that store and reuse storm water runoff; and BMPs that percolate storm water runoff through engineered soil.~~
 - (C) Approved modular/proprietary treatment control BMPs that are based on bioretention or LID concepts and that meet pollution removal goals;
 - (D) Regional Water Board and Co-Permittee approved offset project; or
 - (E) Detention ponds (hydromodification control only).
- (3) If a project cannot comply with Part 5 - 2(b)(2)(A) or (B) above (bioretention BMPs or LID BMPs) for the specified design storm, the Co-Permittees shall obtain Regional Water Board Executive Officer approval prior to approving BMPs included in Part 5 - 2(b)(2)(C), (D) or (E) above (modular/proprietary BMPs, offset project, or detention pond). The Co-Permittees shall submit adequate documentation and justification to the Regional Water Board to facilitate review and approval. The Executive Officer may find during the term of this Order that the Co-Permittees have developed an adequate program to require BMPs in compliance with Part 5 - 2(b)(2)(A) and (B) and the Executive Officer may waive this requirement for advance approval.
- (c) **Hydromodification (Flow/Volume/Duration) Control Criteria**
- (1) Each Co-Permittee shall require all new development and redevelopment projects identified in Special Provisions E Part 4 to implement hydrologic control measures, to prevent accelerated downstream erosion, minimize flooding and public nuisance conditions, to recharge ground water and to protect stream habitat in receiving waters. The purpose of the hydrologic controls is to minimize changes in post-development hydrologic storm water runoff discharge rates, velocities, and duration. This shall be

achieved by maintaining the project's pre-development storm water runoff flow rates, and duration. Pre-development hydrology shall be based on an analysis of natural infiltration, soils storage and evapotranspiration rates. The Co-Permittees shall also ensure that total storm water runoff volumes remain the same or lower as the pre-development volumes, when possible.

- (A) All new development or redevelopment projects (both public and private) with 1.0 acre or more of impervious surface shall implement hydromodification control.
- (B) Hydromodification control may include one, or a combination of on-site, regional or subregional hydromodification control BMPs, LID strategies, or stream restoration measures, with preference given to LID strategies and on-site hydromodification control BMPs. Any in-stream restoration measures that are proposed in conjunction with hydromodification BMPs, shall not adversely affect the beneficial uses of the receiving waters and appropriate permits shall be obtained prior to starting any restoration projects.
- (C) The Co-Permittees shall develop and implement a Hydromodification Control Plan approved by the Regional Water Board Executive Officer with input from local stakeholders ~~and no later than Regional Water Board staff by October 1, 2013,¹⁷ for Executive Officer approval,~~ to address hydromodification based on accepted practices. The plan shall be consistent with the requirements of this Order and shall include one or more of the following:
 - (i) A simplified method using LID BMPs with accepted sizing criteria to provide hydromodification control;
 - (ii) A numerical model to predict the hydrological changes resulting from new development and provide mitigation; or
 - (iii) A numerical model to identify effective end of pipe or flow duration control mitigation strategies.
- (D) The Hydromodification Control Plan shall:
 - (i) Minimize reduction of ground water recharge rates based on natural site conditions;
 - (ii) Describe authorized hydromodification management control BMPs;
 - (iii) Describe hydromodification management control BMP design criteria;

¹⁷ The Executive Officer may administratively extend this deadline if the Executive Officer determines that an extension will result in a superior plan, adequate progress has been made in developing a plan, and the interim requirements being used by the Co-Permittees are adequate.

- (iv) Describe the range of flows controllable with flow duration control methods;
 - (v) Describe the approved hydromodification method or model;
 - (vi) Describe any alternate hydromodification management model and design;
 - (vii) Describe stream restoration measures design criteria;
 - (viii) Allow a developer an exception to the hydromodification requirements if it can be adequately demonstrated to the Regional Water Board Executive Officer that the project runoff flows will have a positive impact on receiving waters (such as for sediment transport); and
 - (ix) Include a monitoring and effectiveness assessment.
- (E) The Co-Permittees shall provide Regional Water Board staff quarterly or more frequently if needed, verbal updates on the progress of the Hydromodification Control Plan and invite Regional Water Board staff to all meetings held to develop the Hydromodification Plan.
- (F) Interim Hydromodification Control Requirements
- (i) The Interim Hydromodification Control Requirements to protect receiving waters until Co-Permittees complete a Hydromodification Control Plan shall be provided to the Regional Water Board by ~~January~~ July 1, 2010, and may include: the use of hydrograph modification methods for post-construction BMPs found in other storm water management plans or BMP manuals, such as the Marin LID manual, the Contra Costa County sizing factor approach, the State Water Board stream erosion identification tool for hydromodification planning (Bowles), or TR-55 model. BMPs shall be sized for the two-year 24-hr rain event that keeps post-construction peak discharge, peak velocity, and peak duration at or below those respective pre-construction levels. The Co-Permittees shall also ensure that pre-construction storm water runoff volume is the same as the post-construction storm water runoff volume for flows up to the 85th percentile 24-hour storm ~~when~~ and larger storms where adverse impacts to receiving waters are possible.

PART 6 – Implementation of New Development/Redevelopment Post-Construction BMPs

1. Maintenance Agreement and Transfer
 - (a) Each Co-Permittee shall require that all new development and redevelopment projects subject to post-construction BMP requirements provide verification of maintenance provisions for LID BMPs, treatment control BMPs, and hydromodification control BMPs by way of final map conditions, legal agreements, covenants, conditions or restrictions, CEQA mitigation requirements, conditional use permits, and/or other legally binding maintenance agreements. The BMP maintenance shall ensure that the BMPs implemented will remain fully functional and that all areas identified for treatment will ~~remain tributary~~ discharge to the treatment BMP system.
 - (1) Verification at a minimum shall include the developer's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and either
 - (A) A signed statement from the public entity assuming responsibility for all structural BMP, treatment control BMP, and hydromodification control BMP maintenance; or
 - (B) Written conditions in the sales or lease agreement in enough detail to be easily understood by the owner or tenant, which require the property owner or tenant to assume responsibility for BMP maintenance and conduct a maintenance inspection at least once a year; or
 - (C) Written text in project covenants, conditions, and restrictions (CCRs) in enough detail to be easily understood by the owner or tenant, for residential properties assigning BMP maintenance responsibilities to the Home Owners Association (HOA); or
 - (D) Any other legally enforceable agreement or mechanism that assigns responsibility for the maintenance of BMPs.
2. Tracking, Inspection, and Enforcement of Post-Construction BMPs
 - (a) Each Co-Permittee shall implement a tracking system, and an inspection and enforcement program for new development and redevelopment post-construction storm water BMPs no later than October 1, 2010.
 - (1) Implement a GIS or other electronic system for tracking projects that have been conditioned to include construction/post-construction BMPs. The electronic system, at a minimum, should contain the following information:
 - (A) Municipal project identifying information;
 - (B) State WDID No., if applicable;
 - (C) Project acreage;
 - (D) BMP type and description;

progressive enforcement against the owner or operator and notify the Regional Water Board.

4. Alternative Post-Construction Storm Water Mitigation Programs
 - (a) A Co-Permittee may apply to the Regional Water Board for approval of a regional or sub-regional storm water mitigation program to substitute in part or wholly for on-site post-construction requirements.
 - (b) Upon review and a determination by the Regional Water Board Executive Officer that the proposal is technically valid and appropriate, the Regional Water Board may consider for approval such a program if its implementation will:
 - (1) Implement LID or provide justification of why it cannot;
 - (2) Result in equivalent or improved storm water quality;
 - (3) Protect stream habitat;
 - (4) Be fiscally sustainable and have secure funding;
 - (5) Promote cooperative problem solving by diverse interests; and
 - (6) Be completed in four years or less, including the construction and start-up of treatment facilities.
 - (c) Nothing in these provisions shall be construed as to delay the implementation of post-construction control requirements, as approved in this Order.
 - (d) Mitigation Funding
 - (1) A Co-Permittee may create a management framework, for Executive Officer approval, to fund regional or subregional solutions to storm water pollution, ~~where any of the following situations occur if:~~
 - (A) A waiver for impracticability is granted by the Regional Water Board Executive Officer or by a Co-Permittee based on criteria approved by the Executive Officer;
 - (B) Funds become available;
 - (C) Off-site mitigation is required because of loss of environmental habitat; ~~or~~
 - (D) An approved watershed management plan, or an integrated water resources management plan, or a regional storm water mitigation plan, or a wetlands recovery plan exists that incorporates an equivalent or improved strategy for storm water pollution mitigation; and
 - (E) Mitigation projects are funded and implemented prior to the impact from the development project.
5. Standard Urban Stormwater Mitigation Plan (SUSMP)
 - (a) The Co-Permittees shall update their SUSMP¹⁸ or incorporate appendices or references by April 1, 2011,¹⁹ and thereafter as needed to include, at a minimum, the following:

¹⁸ Or equivalent document.

- (1) Conditions to require compliance with Parts 4, 5 and 6 of this Order;
 - (2) The New Development and Redevelopment Integrated Water Quality and Water Resource Plan (Part 5);
 - (3) Expected BMP pollutant removal performance including effluent quality and removal efficiency ranges (ASCE/U.S. EPA International BMP Database, CASQA New Development BMP Handbook, technical reports, local data on BMP performance, and the scientific literature appropriate for northern California geography and climate);
 - (4) Selection and prioritization of appropriate BMPs for storm water pollutants of concern and in accordance with the New Development and Redevelopment Integrated Water Quality and Water Resource Plan (Part 5);
 - (5) Data on observed local effectiveness and performance of implemented BMPs;
 - (6) BMP maintenance information;
 - (7) Criteria to facilitate integrated water resources planning and management in the selection of BMPs, including consideration of water conservation, groundwater recharge, public recreation, multipurpose parks, open space preservation, and redevelopment retrofits;
 - (8) Updated analysis of the local design storm criteria; and
 - (9) Other requirements to be consistent with this Order.
6. Project Coordination
- (a) Each Co-Permittee shall facilitate a process for effective approval of post-construction storm water control measures. The process shall include:
 - (1) Detailed BMP review including BMP sizing calculations, BMP pollutant removal performance, and municipal approval; and
 - (2) An established structure for communication and delineated authority between and among municipal departments that have jurisdiction over project review, plan approval, and project construction.

PART 7 – State Statute Conformity

1. CEQA Document Update
 - (a) Each Co-Permittee shall incorporate into its CEQA process no later than October 1, 2010, those additional procedures necessary for considering potential storm water quality impacts and providing for appropriate mitigation when preparing and reviewing CEQA documents.
 - (1) The procedures shall require consideration of the following:

¹⁹ Unless otherwise specified in this Order.

- (A) Potential impact of project construction on storm water runoff;
- (B) Potential impact to water quality of project post-construction storm water runoff;
- (C) Potential for discharge of storm water from areas with material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas;
- (D) Potential for discharge of storm water to impair the beneficial uses of the receiving waters;
- (E) Potential for the discharge of storm water to cause significant harm on the biological integrity of the waterways and water bodies;
- (F) Potential for significant changes in the flow velocity or volume of storm water runoff to cause harm to or impair the beneficial uses of natural drainage systems;
- (G) Potential for significant increases in erosion from storm water flows at the project site or surrounding areas; and
- (H) Potential to cause or contribute to an exceedance of WQS.

2. General Plan Update

- (a) Each Co-Permittee shall amend, revise or update its General Plan to include watershed and storm water quality and quantity management considerations and policies as needed to remain consistent with this Order when any of the following General Plan elements are updated or amended:
 - (1) Land use;
 - (2) Housing;
 - (3) Conservation; and/or
 - (4) Open space.
- (b) Each Co-Permittee shall provide the Regional Water Board with the draft amendment or revision when a listed General Plan element or General Plan is noticed for comment in accordance with Government Code section 65350 et seq.

PART 8 – Development Construction Program

- 1. The requirements in Part 8 – Development Construction Program apply to both public and private construction projects.
- 2. Grading Restrictions
 - (a) Each Co-Permittee shall implement a program to control storm water discharges from construction activity at all construction sites within its jurisdiction. The program shall ensure that controls are adequate for full protection of water quality. During the wet season (~~October 1–~~

~~April 15~~ November 1st – April 30th), the program shall ensure that the following requirements are effectively implemented at ~~all the~~ construction sites ~~in the categories as~~ listed below:

- (1) No grading shall occur during the wet season for construction projects ~~in the following areas of high erosivity: On hillsides with slopes 20%²⁰ or steeper prior to land disturbance unless the project is granted an exception by a Co-Permittee as described in Part 8 – 2(c). (If hillside development is not defined by a zoning ordinance, then the prohibition will apply to steep or long continuous slopes, or areas with silty soils, fine sands, or soils lacking vegetative cover).~~
 - (b) If grading operations in these areas are not completed before the onset of the wet season and no exception is granted, grading shall be halted and effective erosion control measures shall be put in place to minimize erosion. Grading shall not resume until after ~~April 15th~~ April 30th. Depending on the project area, the developer/~~contractor/~~Co-Permittee shall implement the Erosion and Sediment Control BMPs listed in the following Tables 8 and 9.
 - (c) A Grading ~~Prohibition~~ Restriction Variance-Exception may be granted by a Co-Permittee where the project proponent can demonstrate through plan review, inspections, monitoring and use of an iterative BMP process that the proposed BMP measures can be reasonably expected to meet the following goals:
 - (1) Keep storm water from causing or contributing to degradation of water quality or impairing beneficial uses;
 - (2) Ensure that the storm event daily average Total Suspended Solids discharged from the site is 100 mg/L or less; and
 - (3) Ensure that the storm event daily average turbidity of the discharge from the site is 50 NTU or less.
 - (d) If an exception variance is granted by a Co-Permittee, a monitoring program must also be required to ensure BMP effectiveness and compliance with the above goals.
3. Construction Sites Less than 1 Acre
- (a) Each Co-Permittee shall require the implementation of a minimum set of BMPs in combination at all construction sites (see Table 8 BMPs at Construction Sites Less than 1 Acre) to prevent erosion and sediment loss, and the discharge of construction wastes.²¹ Erosion Control BMPs for erosion avoidance shall be the highest priority. If the site soils, hydrology, and geography are such that the BMPs in Table 8 are

²⁰ Steepness is measured prior to land disturbance.

²¹ The BMPs are taken from the *California BMP Handbook, Construction, January 2003* and the *Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices (BMPs) Manual, March 2003*, and addenda.

not adequate to meet WQS, additional (treatment train, redundant, and/or advanced) BMPs shall be deployed.

Table 8. BMPs at Construction Sites Less than 1 Acre

Minimum Set of BMPs for All Construction Sites	CASQA Handbook	Caltrans Handbook ²²
Erosion Control		
Scheduling	EC-1	SS-1
Preservation of Existing Vegetation	EC-2	SS-2
Sediment Controls		
Silt Fence	SE-1	SC-1
Sand Bag Barrier	SE-8	SC-8
Stabilized Construction Site Entrance/Exit	TR-1	TC-1
Non-Storm Water Management		
Water Conservation Practices	NS-1	NS-1
Dewatering Operations (Groundwater dewatering to surface water only under NPDES Permit No. 93-64R1-2009-0045) ²³	NS-2	NS-2
Waste Management		
Material Delivery and Storage	WM-1	WM-1
Stockpile Management	WM-3	WM-3
Spill Prevention and Control	WM-4	WM-4
Solid Waste Management	WM-5	WM-5
Concrete Waste Management	WM-8	WM-8
Sanitary/Septic Waste Management	WM-9	WM-9

4. Construction Sites Greater than 1 Acre
 - (a) Each Co-Permittee shall require the implementation of the BMPs in Table 9 (BMPs at Construction Sites Greater than 1 Acre) at all construction sites greater than 1 acre as needed to prevent erosion and sediment loss, and the discharge of construction wastes. If the site soils, hydrology, and geography are such that the BMPS in Table 9 are not adequate to meet WQS, additional BMPs (treatment train, redundant, and/or advanced) shall be deployed.

Table 9. BMPs at Construction Sites Greater than 1 Acre

BMPs	CASQA Handbook	Caltrans Handbook
Erosion Control		
Scheduling	EC-1	SS-1
Preservation of Existing Vegetation	EC-2	SS-2
Hydraulic Mulch	EC-3	SS-3

²² And updates.

²³ Or as [replaced by the Low Threat Discharge Permit currently being drafted to replace Order No. 93-64](#) updated or renewed.

BMPs	CASQA Handbook	Caltrans Handbook
Hydroseeding	EC-4	SS-4
Soil Binders	EC-5	SS-5
Straw Mulch	EC-6	SS-6
Geotextiles and Mats	EC-7	SS-7
Wood Mulching	EC-8	SS-8
Sediment Controls		
Fiber Rolls	SE-5	SC-5
Gravel Bag Berm	SE-6	SC-6
Street Sweeping and/or Vacuum	SE-7	SC-7
Storm Drain Inlet Protection	SE-10	SC-10
Sediment Basin	SE-2	SC-2
Check Dam	SE-4	SC-4
Silt Fence	SE-1	SC-1
Sand Bag Barrier	SE-8	SC-8
Tracking Control BMPs		
Stabilized Construction Entrance/Exit	TR-1	TC-1
Entrance/Exit Tire Wash	TC-3	TC-3
Additional Controls		
Wind Erosion Controls	WE-1	WE-1
Stabilized Construction Roadway	TC-2	TC-2
Non-Storm Water Management		
Water Conservation Practices	NS-1	NS-1
Dewatering Operations (Groundwater dewatering to surface water only under NPDES Permit No. 93-61R1-2009-0045) ²⁴	NS-2	NS-2
Vehicle and Equipment Washing	NS-8	NS-8
Vehicle and Equipment Fueling	NS-9	NS-9
Vehicle and Equipment Maintenance	NS-10	NS-10
Waste Management		
Material Delivery and Storage	WM-1	WM-1
Stockpile Management	WM-3	WM-3
Solid Waste Management	WM-5	WM-5
Spill Prevention and Control	WM-4	WM-4
Concrete Waste Management	WM-8	WM-8
Sanitary/Septic Waste Management	WM-9	WM-9

5. Local Agency Requirements

- (a) Each Co-Permittee shall require for all public and private construction sites 5 acres or greater, compliance with all conditions identified

²⁴ Or as [replaced by the Low Threat Discharge Permit currently being drafted to replace Order No. 93-61](#) updated or renewed.

activity or area described in the footnote below,²⁷ each Co-Permittee shall also implement as needed the BMPs in the Caltrans Storm Water Quality Handbook Maintenance Staff Guide described as B-4 in Table 10 (BMPs at Vehicle Maintenance/Material Storage Facilities/Corporation Yards) or other industry-accepted BMP manuals such as Fishnet 4-C or CASQA.

Table 10. BMPs at Vehicle Maintenance/Material Storage Facilities/Corporation Yards From the Caltrans Storm Water Quality Handbook Maintenance Staff Guide Appendix B (May 2003²⁸)

Activity Specific BMPs	Page
General BMPs	B-4
Flexible Pavement	B-9
Asphalt Cement Crack and Joint Grinding/Sealing	B-9
Asphalt Paving	B-10
Structural Pavement Failure (Digouts) Pavement Grinding and Paving	B-11
Emergency Pothole Repairs	B-13
Sealing Operations	B-14
Rigid Pavement	B-15
Portland Cement Crack and Joint Sealing	B-15
Mudjacking and Drilling	B-16
Concrete Slab and Spall Repair	B-17
Slope/Drains/Vegetation	B-19
Shoulder Grading	B-19
Non-landscaped Chemical Vegetation Control	B-21
Non-landscaped Mechanical Vegetation Control/Mowing	B-23
Non-landscaped Tree and Shrub Pruning, Brush Chipping, Tree and Shrub Removal	B-24
Fence Repair	B-25
Drainage Ditch and Channel Maintenance	B-26
Drain and Culvert Maintenance	B-28
Curb and Sidewalk Repair	B-30
Litter/Debris/Graffiti	B-32
Sweeping Operations	B-32
Litter and Debris Removal	B-33
Emergency Response and Cleanup Practices	B-34
Graffiti Removal	B-36
Landscaping	B-37
Chemical Vegetation Control	B-37

²⁷ Scheduling and Planning; Spill Prevention and Control; Sanitary/Septic Waste Management; Material Use; Safer Alternative Products; Vehicle/Equipment Cleaning, Fueling, and Maintenance; Illicit Connections Detection, Reporting and Removal; Illegal Spill/Discharge Control and Maintenance Facility Housekeeping Practices.

²⁸ Including future updates and revisions.

- (b) Each Co-Permittee shall obtain coverage under the Construction General Permit no later than ~~October 8, 2009~~ April 1, 2010 for long-term maintenance projects, including maintenance or replacement of streets, sidewalks, roads, and any other project that a Co-Permittee undertakes including all Capital Improvement Projects (CIP) if either one or more acres of land are disturbed by grading, clearing or excavation activities.
3. Sonoma County shall implement the Fishnet 4-C manual for road maintenance projects as well as the BMPs described below.
4. Roadway Paving or Repaving Operations (For Private or Public Projects)
 - (a) Each Co-Permittee shall require that for any project that includes roadbed or street paving, repaving, patching, digouts, or resurfacing roadbed surfaces, that the following BMPs be implemented for each project:
 - (1) Restrict paving and repaving activity to exclude periods of rainfall or predicted rainfall unless required by emergency conditions;
 - (2) Install sand bags or gravel bags and filter fabric at all susceptible storm drain inlets and at manholes to prevent spills of paving products and tack coat;
 - (3) Prevent the discharge of release agents including soybean oil, other oils, or diesel to the storm water drainage system or watercourses;
 - (4) Minimize non-storm water runoff from water use for the roller and for evaporative cooling of the asphalt;
 - (5) Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly;
 - (6) Collect liquid waste in a container, with a secure lid, for transport to a maintenance facility to be reused, recycled or disposed of properly;
 - (7) Collect solid waste by shoveling and vacuuming or sweeping and securing in an appropriate container for transport to a maintenance facility to be reused, recycled or disposed of properly;
 - (8) Cover the "cold-mix" asphalt (i.e., pre-mixed aggregate and asphalt binder) with protective sheeting during a rainstorm;
 - (9) Cover loads with tarp before haul-off to a storage site, ensuring that trucks are not overloaded;
 - (10) Minimize airborne dust by using water spray during grinding; and
 - (11) Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near storm water drainage system or watercourses.
5. Streets and Roads
 - (a) Maintenance

- (1) Each Co-Permittee shall perform street sweeping of curbed streets ~~in commercial areas and~~ areas subject to high trash generation six times per year.
 - (2) Each Co-Permittee shall perform street sweeping of curbed streets in residential and commercial areas identified in their SWMP at least four times per year.
 - (b) Road Construction and Reconstruction
 - (1) Each Co-Permittee shall implement the following BMPs for road reconstruction:
 - (A) Storm drain inlet protection from sediments;
 - (B) Dewatering of below grade construction areas;
 - (C) Secondary containment for cold mix;
 - (D) Sheeting underneath and covering cold mix (during storage) to prevent discharge of spray release; and
 - (E) If concrete will be used on site, Co-Permittees shall provide a vehicle wash off area that is isolated from the MS4.
 - (c) Post-Construction Controls
 - (1) Municipal activities involving pothole repairs and square cut patching will not trigger post construction controls.
6. Each Co-Permittee shall protect debris and material stockpiles from rain or wind erosion with a cover or sediment barriers.
7. Vehicle and Equipment Wash Areas
 - (a) Each Co-Permittee shall eliminate discharges of untreated wash waters from the washing of vehicles and equipment no later than October 1, 2011, by implementing any of the following measures at existing facilities with vehicle or equipment wash areas:
 - (1) Infiltrate on-site;
 - (2) Self-contain, and haul off for disposal;
 - (3) Equip with a clarifier;
 - (4) Equip with an alternative pre-treatment device; or
 - (5) Plumb to the sanitary sewer with permission from the sewerage agency.
 - (b) Each Co-Permittee shall ensure that any municipal facilities constructed, redeveloped, or replaced have all vehicle and equipment wash areas routed to a vegetated or gravel area for infiltration, plumbed to the sanitary sewer, or hauled away for legal disposal.
8. Landscape, Park, and Recreational Facilities Management
 - (a) Integrated Pest Management (IPM)
 - (1) IPM is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties.

- (6) Store pesticides and fertilizers indoors or under cover on paved surfaces or use secondary containment, and:
 - (A) Reduce the use, storage, and handling of hazardous materials to reduce the potential for spills; and
 - (B) Regularly inspect storage areas.
9. Storm Drain Operation and Management and Trash Management
 - (a) Catch Basin Cleaning
 - (1) Each Co-Permittee shall designate catch basin inlets within its jurisdiction as one of the following:
 - (A) Priority A: Catch basins that are designated as consistently generating the highest volumes of trash and/or debris;
 - (B) Priority B: Catch basins that are designated as consistently generating moderate volumes of trash and/or debris; or
 - (C) Priority C: Catch basins that are designated as generating low volumes of trash and/or debris.
 - (2) Each Co-Permittee shall submit a ~~map or list of catch basins, their locations, and their designation under the~~ catch basin cleanout plan that describes the criteria used to categorize catch basins in the priority system described above, including number of catch basins included in each priority level for Executive Officer approval by October 1, 2010.
 - (3) Each Co-Permittee shall inspect and clean catch basins as necessary, but at least consistent with the following schedule:
 - (A) Priority A: A minimum of 2 times during the wet season and once during the dry season every year;
 - (B) Priority B: A minimum of once per year; and
 - (C) Priority C: As needed, but not less than a minimum of once per permit term.
 - (4) In addition to the preceding schedule, Co-Permittees shall ensure that any catch basin that is at least 25% full of trash and/or debris shall be cleaned out.
 - (b) Trash Management at Public Events
 - (1) Each Co-Permittee shall require for any public event, permitted private event or wherever it is foreseeable that substantial quantities of trash and litter may be generated, that the following measures are implemented:
 - (A) Conditions be placed on any special use permit issued for such event to control and clean up trash; and
 - (B) Require the proper management of trash and litter generated; and
 - (C) Arrange for temporary screens to be placed on catch basins; or
 - (D) Clean out catch basins, trash receptacles, and grounds as needed in the event area within 24 hours subsequent to the event in a timely manner.

- (c) Trash Receptacles
 - (1) Each Co-Permittee shall install trash receptacles in areas subject to high trash generation (such as transit stops and schools) within its jurisdiction no later than October 1, 2011; and
 - (2) Each Co-Permittee shall ensure that trash receptacles are cleaned out and maintained as necessary to prevent trash overflow.
- (d) Catch Basin Labels
 - (1) Each Co-Permittee shall inspect 20% of the catch basins on an annual basis for the legibility of the catch basin stencil or label nearest each catch basin and inlet when performing storm drain inspections and maintenance.
 - (2) Each Co-Permittee shall record and re-stencil or re-label within 15 days of inspection, catch basins with illegible stencils.
- (e) Trash Excluders
 - (1) The Co-Permittees shall consider installing trash excluders, or equivalent devices on catch basins to prevent the discharge of trash to the storm drain system if a grant or other funding source becomes available.
- (f) Storm Drain Maintenance
 - (1) Each Co-Permittee shall implement a program for storm drain maintenance no later than October 1, 2010 that includes the following:
 - (A) Visual monitoring of prioritized Co-Permittee-owned open channels and other drainage structures for debris at least annually;
 - (B) Remove trash, debris and sediment as needed from open channels and roadside ditches in priority areas a minimum of once per year before the storm season;
 - (C) Use adequate BMPs to eliminate the discharge of contaminants during MS4 maintenance and clean outs; and
 - (D) Quantify the amount of materials removed using best estimates and ensure the materials are properly disposed of.
- (g) Spill Response Plan
 - (1) Each Co-Permittee shall implement a response plan for spills to the MS4 within their respective jurisdiction. The response plan shall clearly identify agencies required to respond, telephone numbers and e-mail addresses for contact and shall contain at a minimum the following:
 - (A) Initiation of investigation of all complaints received within one (1) business day or 24 hours, if there is an immediate threat to public health or beneficial uses, of the incident report;
 - (B) Response within 2 hours upon notification of spills; and
 - (C) Immediate notification of spills to appropriate sewer and public health agencies, Sonoma County Department of Emergency Services (DES) and the California Emergency

Management Agency (the Office of Emergency Services (OES) CalEMA).

- (h) Co-Permittee Owned Treatment Control BMPs
 - (1) Each Co-Permittee shall implement an inspection and maintenance program for all Co-Permittee owned treatment control BMPs, including post-construction treatment control BMPs.
 - (2) Each Co-Permittee shall ensure proper operation of all treatment control BMPs and maintain them as necessary for proper operation, including all post-construction treatment control BMPs.
 - (3) Any residual water not internal to the BMP performance within a treatment control BMP when being maintained shall be:
 - (A) Hauled away and legally disposed of;
 - (B) Discharged to the sanitary sewer system (with permits or authorization); or
 - (C) Treated or filtered to remove sediments and oil and grease, and meet the limitations set in Table 11 (Discharge Limitations for Dewatering Treatment BMPs) prior to discharge to the MS4.

Table 11. Effluent Discharge Limitations for Dewatering Storm Water Treatment BMPs²⁹

Parameter	Units	Limitation
Total Suspended Solids	mg/L	100
Turbidity	NTU	50
Oil and Grease	mg/L	10

- 10. Emergency Procedures
 - (a) Each Co-Permittee may conduct repairs of essential public service systems and infrastructure in emergency situations with a self-waiver of the provisions of this Order.
 - (1) Where the self-waiver has been invoked, the Co-Permittee shall submit to the Regional Water Board Executive Officer a statement of the occurrence of the emergency, an explanation of the circumstances, and the measures that were implemented to reduce the threat to water quality, no later than 10 business days after the situation of emergency has passed.

- 11. Municipal Employee and Contracted Municipal Employee Training
 - (a) Co-Permittees are required to either perform the training required by this section or obtain written verification of equivalent training from any contractors that manage facilities, perform tasks, or provide services to the Co-Permittees that may affect storm water quality.
 - (b) Each Co-Permittee shall, no later than October 1, 2010 and annually thereafter, train all of their employees in targeted positions (whose

²⁹ Technology based effluent limits.

- interactions, jobs and activities may affect storm water quality) on the requirements of the storm water program to:
- (1) Promote a clear understanding of the potential for activities to pollute storm water; and
 - (2) Identify opportunities to require, implement, and maintain appropriate BMPs in their line of work.
- (c) Each Co-Permittee shall, no later than October 1, 2010 and annually thereafter, train all of their employees who use or have the potential to use pesticides or fertilizers; training programs shall address:
- (1) The potential for pesticide-related surface water toxicity;
 - (2) Proper use, handling, storage, and disposal of pesticides;
 - (3) Least toxic methods of pest prevention and control, including IPM; and
 - (4) Reduction of pesticide use.
- (d) Each Co-Permittee shall, no later October 1, 2010 and annually thereafter, train all of their employees who are responsible for investigating illicit connections and illicit/illegal discharges. The training program shall address:
- (1) Identification;
 - (2) Investigation;
 - (3) Termination;
 - (4) Cleanup;
 - (5) Reporting of incidents; and
 - (6) Documentation of incidents.

PART 10 – Illicit Connections and Illicit Discharges Elimination Program

1. Each Co-Permittee shall implement a program to eliminate all illicit connections and illicit discharges (IC/ID) to the storm drain system, and shall document, track, and report all such cases in accordance with the elements and performance measures specified in the following subsections.
2. General Program Implementation
 - (a) Each Co-Permittee shall implement an IC/ID program. The IC/ID procedures shall be documented and made available for public review.
 - (b) Tracking
 - (1) All Co-Permittees shall, no later than October 1, 2013, map or document all³⁰ permitted connections to their storm drain system and include this in their next submitted annual report.
 - (2) All Co-Permittees shall maintain a database for recording information related to IC/ID and, to the extent possible, use mapping to assist in evaluating the data. Co-Permittees shall use this information to identify priority areas for further investigation and elimination of IC/ID.

³⁰ This means new connections and historic connections if documentation exists.

- (c) Co-Permittees shall include a summary of inspections, complaint response, investigation, enforcement and result of IC/ID activities in each annual report.
3. Public Reporting
- (a) Co-Permittees shall establish and maintain a phone hotline and internet site to receive all reports of IC/ID complaints within their jurisdictions. If a Co-Permittee receives a complaint in another jurisdiction, the Co-Permittee shall transmit the complaint to the appropriate entity.
 - (b) Co-Permittees shall document the location of the reported IC/ID and the actions undertaken in response to all IC/ID complaints.
4. Illicit Connections and Discharges
- (a) Screening for Illicit Connections and Non-Storm Water Flows
 - (1) Co-Permittees shall conduct field screening of their storm drain outfalls that have not already been screened by October 1, 2014 for illicit connections and discharges including:
 - (A) All storm drain outfall pipes 36 inches in diameter or greater;
 - (B) ~~High priority areas~~ Areas identified during the mapping of illicit connections and discharges ~~visual flow monitoring in~~ Monitoring and Reporting Program R1-2009-0050; and
 - (C) All portions of storm drain systems 50 years or older in age.
 - (2) Each Co-Permittee shall maintain a list containing all connections under investigation ~~for possible illicit connection~~ and their status.
 - (3) The results of the field screening shall be submitted in the Annual Reports as the activities are completed.
 - (b) Response to Illicit Connections
 - (1) Investigation
 - (A) Each Co-Permittee, upon discovery or upon receiving a report of a suspected illicit connection, shall complete an investigation within 21 days, to determine the following:
 - (i) Source of the connection;
 - (ii) Nature and volume of discharge through the connection; and
 - (iii) Responsible party for the connection.
 - (2) Termination
 - (A) Each Co-Permittee, upon confirmation of an illicit storm drain connection, shall ensure the following:
 - (i) Termination of the connection within 180 days of completion of the investigation, using formal enforcement authority to eliminate the illicit connection or submit information to the Regional Water Board justifying the status of non-compliance.
 - (3) Documentation

Administrator or the State determines appropriate for the control of such pollutants.
(See CWA §402(p)(3)(B)).

On November 16, 1990, pursuant to CWA § 402(p), the United States Environmental Protection Agency (U.S.EPA) promulgated regulations at section 122.26 of title 40 of the Code of Federal Regulations which established requirements for storm water discharges under the NPDES program. U.S.EPA defines storm water at 40 CFR 122.26 (b)(13) as 'storm water runoff, snow melt runoff, and surface runoff and drainage' (related to storm events or snow melt) (See also 55 Fed. Reg. 47990, 47995). Non-storm water discharges to the MS4 are to be "effectively prohibited" by the MS4 operator. "Effective prohibition" meant that the MS4 permittee was to implement programs to eliminate "illicit discharges" to the storm drain system ~~unless authorized under NPDES permits issued independent of the MS4 permit~~ (55 Fed. Reg. 47995). The storm water regulations also intended to not hold MS4 permittees responsible for certain categories of non-storm water discharges such as uncontaminated ground water infiltration, natural springs, rising groundwater, and stream diversions from the MS4. Such discharges might need to be addressed under independent NPDES permits when specifically identified on a case-by-case basis by the MS4 permittees or the permitting authority.

U.S.EPA intended that storm water discharges from the MS4 be primarily addressed through the implementation of Best Management Practices (BMPs) on an iterative approach because of the intermittent and variable nature of storm flows and pollutant concentrations as well as insufficient available effluent and receiving water data rather than numerical effluent limitations (61 FR 43761). However, U.S.EPA's scheme for non-storm water discharges from the MS4 is to bring them under the existing framework of the NPDES program at 40 CFR 122.44(d). (55 Fed. Reg. 47995). ~~Non-numerical limitations such as BMPs for non-storm water discharges may be authorized only where numerical limits are not feasible (40 CFR 122.44(k)).~~ In any case, if the permittee fails to implement adequate BMPs to prevent exceedance of receiving water objectives, the permitting authority "may have to consider other approaches to water quality protection" (61 Fed. Reg. 43761; *Interim Permitting Approach*, Response #6, EPA 833-D-96-00, 1996).

Legal Authority

The following statutes, regulations, and Water Quality Control Plans provide the basis for the requirements of Order No. R1-2009-0050:

- (a) Clean Water Act (CWA);
- (b) California Water Code (Water Code);
- (c) 40 CFR Parts 122, 123, 124 (National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, Final Rule);
- (d) Part II of 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);
- (e) Water Quality Control Plan – Ocean Waters of California (California Ocean Plan);

- (f) Water Quality Control Plan for the North Coast Basin (Basin Plan); and
- (g) 40 CFR 131 Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California Rule (California Toxics Rule), and the California Toxics Rule Implementation Plan.

The legal authority citations below generally apply to requirements in Order No. R1-2009-0050 (Order), and provide the [North Coast Regional Water Quality Control Board \(Regional Water Board\)](#)~~Regional Water Board~~ with ample underlying authority to require each of the requirements of this Order.

CWA 402(p)(3)(B)(ii) requires that permits for discharges from municipal storm sewers “shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers.”

CWA 402(p)(3)(B)(iii) requires that permits for discharges from municipal storm sewers “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and systems, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.”

CWA 402 prohibits the discharge of any pollutant to waters of the United States from a point source, unless that discharge is authorized by a NPDES permit. Though storm water runoff comes from a diffuse source, it is discharged through MS4s, which are point sources under the CWA. Federal NPDES regulation 40 CFR 122.26(a) (iii) and (iv) provide that discharges from MS4s, which service medium or large populations greater than 100,000 or 250,000 respectively, and interconnected MS4s, shall be required to obtain an NPDES permit. Federal NPDES regulation 40 CFR 122.26(a)(v) also provides that a NPDES permit is required for “A [storm water] discharge which the Director, or in states with approved NPDES programs, either the Director or the U.S.EPA Regional Administrator, determines to contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.” Such sources are then designated into the program. The discharges from the Co-Permittees’ MS4s as detailed in the Fact Sheet, contribute to violations of water quality standards and are a contributor of pollutants to the Laguna watershed.

40 CFR 122.26(d)(2)(i)(B,C,E, and F) provide that each permittee’s permit application “shall consist of: adequate legal authority. A demonstration that the applicant can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the applicant at a minimum to: prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer; control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water; require compliance with condition in ordinances, permits, contracts or orders; and carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition of illicit discharges to the municipal separate storm sewer.”

establishes a framework for coordination of actions by U.S.EPA, the Services, and CWA delegated States on CWA permit issuance under § 402 of the CWA [66 Fed. Reg. 11202-11217].

This Order is intended to develop, achieve, and implement a timely, comprehensive, cost-effective storm water pollution control program to reduce the discharge of pollutants in storm water to MEP from the MS4 ~~to surface waters~~ subject to the jurisdiction of the City of Santa Rosa, County of Sonoma, and the Sonoma County Water Agency (Co-Permittees) to surface waters subject to the jurisdiction of the Regional Water Board.

Federal regulations (40 CFR 122.26(d)(2)(iv)(A) and 40 CFR 122.26(d)(2)(iv)(C)) require that MS4 Co-Permittees implement a program to monitor and control pollutants in discharges to the municipal system from industrial and commercial facilities that contribute a substantial pollutant load to the MS4. The regulations require that Co-Permittees establish priorities and procedures for inspection of industrial facilities and priority commercial establishments. This Order, consistent with U.S.EPA policy, incorporates a cooperative partnership, including the specifications of minimum expectations, between the Regional Water Board and the Co-Permittees for the inspection of industrial facilities and priority commercial establishments to control pollutants in storm water discharges.

The State Water Board has issued NPDES General Permits for the regulation of storm water discharges associated with industrial and construction activities. In addition, the Regional Water Board has ~~issued adopted a General Permit Order No. R1-2009-004593-61 for construction dewatering low threat discharges to surface waters, including discharges to MS4s owned and operated by the Co-Permittees. Order No. 93-61 is being updated and will cover several types of low threat discharges in conjunction with the low threat discharge basin plan amendment.~~ Under the CWA, the Co-Permittees cannot enforce these NPDES permits. However, the Co-Permittees are required to enforce local storm water ordinances and permit conditions at industrial facilities and construction sites. If the Co-Permittees become aware of industrial or construction site discharges that are in violation of statewide general NPDES permits, the Regional Water Board will rely on the Co-Permittees to promptly report such incidents to Regional Water Board staff for appropriate follow-up actions. In those areas where the local and state requirements overlap, the staffs of the respective agencies will work together to gain compliance in a streamlined manner.

It is the Regional Water Board's intent that this Order shall ensure attainment of water quality standards, applicable water quality objectives, and protection of beneficial uses of receiving waters. This Order therefore prohibits discharges from causing violations of water quality objectives or causing conditions to occur that create a condition of nuisance or water quality impairment in receiving waters as a result of MS4 discharge. Accordingly, these requirements shall be addressed through the effective implementation of BMPs to reduce pollutants in storm water discharges.

There may be federal or state entities within the Co-Permittees' boundaries that operate storm drain facilities and/or discharge storm water to storm drain systems regulated by this Order. The Co-Permittees may lack legal jurisdiction over these entities. Consequently, the Regional Water Board recognizes that the Co-Permittees should not be held directly responsible for such federal or state facilities and/or discharges, if the Co-Permittees have exercised due diligence to reduce or eliminate the discharge of pollutants. Some of these entities have their own MS4-type discharges to surface waters and are required to obtain storm water permit coverage in accordance with U.S.EPA Phase II storm water program. If these entities are not required to obtain permit coverage under Phase II but are found to be discharging storm water that causes or threatens to cause a violation of water quality objectives, they may be required to obtain an individual storm water discharge permit from the Regional Water Board. The California Department of Transportation (Caltrans) is a state agency that discharges storm water within the permit boundary. On July 15, 1999, the State Water Resources Control Board issued a separate NPDES storm water permit to Caltrans (NPDES No. CAS000003 - Order No. 99-06-DWQ.)

Small MS4s, such as those serving universities and community colleges, exist within the watersheds included in this Order. While these MS4s are not subject to this Order, they are subject to the Phase II NPDES storm water regulations. Over time, these MS4s will be designated for coverage under the State Water Board's statewide general storm water permit for small MS4s.

MS4 Pollutants and Non-Storm Water Discharges

As operators of the MS4s, the Co-Permittees cannot passively receive and discharge pollutants from third parties. By providing free and open access to an MS4 that conveys discharges to waters of the United States, a Co-Permittee essentially accepts responsibility for discharges into the MS4 that it does not prohibit or control. These discharges may cause or contribute to a condition of pollution, contamination or a violation of water quality standards.

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

Furthermore, third party discharges may cause a municipality to be out of compliance with its permit. Since pollutants from third parties which enter the MS4 will eventually be discharged from the MS4 to receiving waters, the third party discharges can result in a situation of municipality non-compliance if the discharges lead to an exceedance of water quality standards. For these reasons, each Co-Permittee must prohibit and/or

- (A) If such treatment or control results in a discharge that maintains the existing water quality, then a lowering of water quality would not be consistent with State Antidegradation Policy.
- (B) Likewise, the discharge could not be allowed under State Antidegradation Policy if:
 - (i) The discharge, even after treatment, would unreasonably affect beneficial uses; or
 - (ii) The discharge, would not comply with applicable provisions of Water Quality Control Plans.

The Hydromodification Control and Low Impact Development (LID) provisions of this Order are intended to promote the State Water Board and Federal Antidegradation policies by preventing water quality and habitat degradation, consistent with beneficial uses identified in the Basin Plan.

On June 17, 1999, the State Water Board adopted Order No. WQ 99-05, which specifies standard receiving water limitation language to be included in all municipal storm water permits issued by the State and Regional Water Boards.

The State Water Board adopted a revised Water Quality Control Plan for Ocean Waters of California (Ocean Plan) in 2005. The California Ocean Plan establishes water quality objectives for California's ocean waters and provides the basis for regulation of wastes discharged into the State's coastal waters. It applies to point and nonpoint source discharges. The Ocean Plan identifies the applicable beneficial uses of marine waters that include preservation and enhancement of designated Areas of Special Biological Significance (ASBS) (now called "State Water Quality Protection Areas") and establishes a set of narrative and numerical water quality objectives designed to protect beneficial uses. The State Water Board adopted the California Ocean Plan and amendments thereto, and both the State Water Board and the six coastal Regional Water Boards implement and interpret the California Ocean Plan.

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. 'Water quality standards' (WQS) means beneficial use designations, water quality objectives based upon those beneficial uses, an antidegradation policy, and certain policies generally affecting the application and implementation of water quality standards. (40 CFR §§ 131.6(a), (c), and (d); 40 CFR § 131.13.) Water quality objective(s) means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area. (Water Code §13050(h).) Water quality objectives and standards are referred to collectively in this Order as WQS, and generally consist of narrative or numeric water quality criteria contained in the Basin Plan, the California Ocean Plan, the National Toxics Rule, the California Toxics Rule, State Implementation Policy for the California Toxics Rule, and other state or federally approved surface water quality plans. This Order implements applicable sections of the Basin Plan.

Beneficial uses applicable to the receiving waters within the permit boundary and downstream waters are contained in Attachment A.

In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

This Order incorporates BMPs referenced in the *California Stormwater Quality Association (CASQA) Storm Water Best Management Practice Handbook Construction (January 2003⁴)* (website: <http://www.cabmphandbooks.com/Construction.asp>) and from the *Stormwater Quality Handbooks, Project Planning and Design Guide, Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Plan (WPCP) Preparation Manual, Construction Site Best Management Practices (BMPs) Reference Manual, March 2007* (Caltrans Document Number CTSW-RT-06-171.11-1) (website: <http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm>), and other CASQA handbooks (website: <http://www.cabmphandbooks.com/>)

On May 6, 2008, the State Water Board adopted Resolution No. 2008-30 Requiring Sustainable Water Resources Management. It was resolved that the State Water Board:

- (a) Continues to commit to sustainability as a core value for all Water Boards' activities and programs;
- (b) Directs Water Boards' staff to require sustainable water resources management such as LID and climate change considerations, in all future policies, guidelines, and regulatory actions; and
- (c) Directs Regional Water Boards to aggressively promote measures such as recycled water, conservation, and LID Best Management Practices where appropriate and work with Dischargers to ensure proposed compliance documents include appropriate, sustainable water management strategies.

On May 15, 2008, the California Ocean Protection Council (OPC) adopted the Resolution Regarding Low Impact Development. In the Resolution, OPC:

- (a) Resolves to promote the policy that new developments and redevelopments should be designed consistent with LID principles so that storm water pollution and the peaks and durations of runoff are significantly reduced and, in the case of a new development, are substantially the same as before development occurred on the site;
- (b) Finds that LID is a practicable and superior approach that new and redevelopment projects can implement to minimize and mitigate increases in runoff and runoff pollutants and the resulting impacts on downstream uses, coastal resources and communities; and

⁴ Including future updates and revisions.

Storm Water Pollutants and Hydromodification

The high volumes and velocities of storm water discharged from MS4s into natural watercourses can adversely impact aquatic ecosystems and stream habitat and cause stream bank erosion and physical modifications. These changes can also result in increased flooding, impacting downstream property owners and creating an added burden to flood control agencies. These changes are collectively termed hydromodification. Municipal point source discharges from urbanized areas remain a leading cause of impairment of surface waters in California.

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

- (a) Increased volume and velocity of surface runoff. There are three types of human-made impervious covers that increase the volume and velocity of runoff: (i) rooftop; (ii) transportation imperviousness; and (iii) non-porous (impervious) ground surfaces. As these impervious surfaces increase, infiltration will decrease, forcing more water to run off the surface, picking up speed and pollutants as well as altering the timing and magnitude of the flood hydrograph.
- (b) The concentration of pollutants in the runoff. Certain industrial, commercial, residential and construction activities are large contributors of pollutant concentrations in storm water runoff. As human population density increases, it brings with it proportionately higher levels of car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, and trash.

As a result of these two causes, runoff leaving developed urban areas is significantly greater in volume, velocity, and pollutant load than pre-development runoff from the same area.

By accommodating the traditional approach to storm water management, urbanization has also altered the flow regime (rate, magnitude, frequency, timing, and flashiness of runoff) that supports aquatic and riparian habitats. These hydrologic changes are driven by the loss of water storage capacity in the watersheds,⁹ and exacerbated by physical alterations of the stream channel network.¹⁰ This relationship between urbanization and stream channel integrity has been documented nationally and in localized studies.

Hydrologic changes from urban development also directly and indirectly adversely affect wetlands. Natural wetlands support many beneficial uses and provide important water-

⁹ Konrad, Christopher P. and Derek K. Booth, 2005. *Hydrologic Changes in Urban Streams and Their Ecological Significance*. American Fisheries Society Symposium Vol. 47 p.157-177.

¹⁰ Poff, N.L. et al. 1997. The Natural Flow Regime: A paradigm for river conservation and restoration. *Bioscience* Vol. 47, No. 11, p.769-784.

quality related ecological services, including pollutant removal, flood attenuation, and groundwater recharge.¹¹ The Center for Watershed Protection recently provided U.S.EPA with a synthesis of more than 100 scientific studies on the direct and indirect impacts of urbanization on wetlands and the role wetlands play in watershed quality. The report found that the three changes from land development with the most potential to impact wetlands include: increased storm water runoff, decreased ground water recharge, and flow constriction. Each of these changes may often be avoided or minimized by implementing site design and hydromodification BMPs.

When development reduces riparian buffers or flood plains are confined within levees, habitat loss and hydromodification can result. Modified flow characteristics, higher flow velocities and increased channel erosion are some of the impacts to receiving waters that may result from reduction of riparian buffers and loss of flood plain.

Studies have shown that the level of imperviousness in an area strongly correlates with the quality of nearby receiving waters.¹² One comprehensive study, which looked at numerous areas, variables, and methods, revealed that stream degradation occurs at levels of imperviousness in the watershed as low as 10 to 20 percent. Stream degradation is a decline in the biological integrity and physical habitat conditions that are necessary to support natural biological diversity. For instance, few urban streams can support diverse benthic communities with imperviousness within the watershed greater than or equal to 25 percent.

~~To provide some perspective, a medium density, single-family home area can be from 25 percent to 60 percent impervious (variation due to lot size, street and parking design).¹³~~

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

Increased volume and velocity of runoff adversely impacts receiving waters and their beneficial uses in many ways. According to the State Water Board Urban Runoff Technical Advisory Committee (TAC) Urban Runoff TAC report, increases in population density and imperviousness result in changes to stream hydrology including:

- (a) Increased peak discharges compared to pre-development levels;

¹¹ Water Quality Control Plan for the North Coast Region, Ch. 2 "Beneficial Uses," p. 2-16.00. Wright, Tiffany, et al. 2006. "Direct and Indirect Impacts of Urbanization on Wetland Quality." Prepared by the Center for Watershed Protection. Available at: <http://www.cwp.org>.

¹² U.S.EPA, 1999. Part II. 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. Federal Register.

¹³ Schueler, T.R., 1994. The Importance of Imperviousness. Watershed Protection Techniques. As cited in 64 Fed. Reg. 68725.

pollutants and their respective sources are: polycyclic aromatic hydrocarbons (PAHs) which are products of internal combustion engine operation, nitrates, bis (2-ethylhexyl) phthalate and mercury from atmospheric deposition, lead from fuels, copper from brake pad wear, zinc from tire wear, dioxins as products of combustion, and naturally occurring minerals from local geology. However, the presence of urban development and the MS4 system is responsible for delivering these pollutants to the receiving water. The implementation of the measures set forth in this Order is intended to reduce the entry of these pollutants into storm water and their discharge to receiving waters.

Municipal storm water and non-storm water discharges may contain pollutants that cause or threaten to cause an exceedance of water quality standards, as outlined in the Basin Plan. Wet weather and dry weather discharges are subject to the conditions and requirements established in the Basin Plan for point source discharges. Additionally, discharges from the MS4 that cause or contribute to exceedances of ~~to receiving waters must comply with~~ water quality standards within the receiving water are prohibited.

Sediment and Temperature

Storm water can be a significant source of sediment in waterways through two primary mechanisms: (1) External - direct transport of large volumes of sediment from impervious and developed landscapes into stream channels; and (2) Internal - destabilization of the stream channel and stream bed from excess hydraulic energy leading to high rates of erosion within the stream channel.

Some types of sediment (sands and gravels) are natural components of stream systems and often provide benefits for aquatic habitat. However, excessive ~~Sediment~~ Fine sediments, common in storm water runoff, may impacts beneficial uses in ~~many several~~ ways: (1) Filling in the stream channel and thus reducing the number and depth of pools and complexity of stream habitat features; (2) Creating a shallower stream environment that is more susceptible to increased temperature; (3) Increased nutrient loading, shallow pools, impaired flows all of which contribute to nuisance algal conditions; and (4) Direct effects from smothering of spawning gravels and benthic macroinvertebrate communities.

Natural peak flows may be beneficial to stream systems for sediment transport, promoting deeper pools with cooler water. Storm water flows may alter the natural temperature regime of receiving waters by changing the channel morphology and through direct differences in runoff temperature versus natural flows. Often direct flows are much warmer than the receiving water and can lead to temperature stress in many cold water aquatic species. For example, increased runoff from impervious surfaces such as paved areas and rooftops may increase the temperature of receiving waters. The impact of warmer flows can also be less direct, for example it can cause the stream to have less oxygen because ~~because~~ warmer water has a lower oxygen saturation potential and therefore lower dissolved oxygen. These temperature changes effects can impact the biotic community within an aquatic ecosystem. ~~Increased runoff from~~

~~impervious surfaces such as paved areas and rooftops may increase the temperature of receiving waters. Additionally, stream and aquatic ecosystems may already be stressed in summer due to lack of vegetation and ground water infiltration. Already stressed in summer due to~~ In the summer months, temperatures of receiving waters may also be increased by lack of vegetation and reduced ground water infiltration.

The majority of surface waters of Sonoma County within North Coast Regional Water Board jurisdiction are impaired for excess sediment and temperature. The Regional Water Board has adopted Board Resolution R1-2004-0087 which directs Regional Water Board staff to utilize existing regulatory programs, including storm water permitting, to address sources of sediment within sediment impaired watersheds. Development patterns in the County indicate that development ~~pressure~~ will continue, thereby increasing MS4 discharges into impaired waters.

~~The Regional Water Board has adopted Board Resolution R1-2004-0087 which directs Regional Water Board staff to utilize existing regulatory programs, including storm water permitting, to address sources of sediment within sediment impaired watersheds.~~

Impaired Water Bodies and TMDLs

CWA section 303(d) and 40 CFR 130.7 require States to identify water quality-impaired water bodies and pollutants of concern and develop TMDLs. A TMDL is a numerical calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing ~~pointsources~~ (point sources, which are given Waste Load Allocations (WLAs) and non-point sources, which are given ~~Load Allocations (LAs))~~. Storm water and non-storm water discharges from MS4s are considered point sources.

The Regional Water Board is currently in the process of developing TMDLs for listed water bodies within the Region. The Co-Permittees' discharge of storm water into an impaired water body will be subject to load allocations and implementation plans established under any TMDLs adopted by the Regional Water Board and approved by U.S.EPA. Certain early actions and/or assessments by the Co-Permittees to address 303(d) listed water bodies and pollutants of concern are warranted and required by this Order. The impaired water bodies that are within or downstream of the permit boundary are listed below in Table 1.

Table 1. Impaired Waters

Hydrologic Drainage	Pollutant
Russian River HU, Lower Russian River HA, Austin Creek HSA	Sediment Temperature
Russian River HU, Lower Russian River HA,	Pathogens ¹⁴

<u>Hydrologic Drainage</u>	<u>Pollutant</u>
Guerneville HSA	pH ¹⁵ Sediment Temperature
Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	Low Dissolved Oxygen Mercury Nitrogen Phosphorous Sediment Temperature
Russian River HU, Middle Russian River HA, Mark West Creek HSA	Sediment Temperature
Russian River HU, Middle Russian River HA, Santa Rosa Creek	Pathogens Sediment Temperature

Where reasonable potential has been established for a pollutant through the TMDL process, WLAs must be translated to water quality-based effluent limitations (WQBELs).

Laguna de Santa Rosa TMDL

On March 1, 1995, the Regional Water Board approved a TMDL for the Laguna watershed that assigned numeric, seasonal targeted reductions and net load goals for Total Nitrogen and Total Ammonia in urban storm water in four areas of the Laguna watershed. The Waste Reduction Strategy for the Laguna de Santa Rosa (Strategy) was approved on the same day to implement the TMDL. On May 4, 1995, U.S.EPA approved the TMDL and Strategy as a phased-approach TMDL. The Strategy anticipated attaining the targeted reductions and net load goals by July, 2000, to address excess nutrient and low dissolved oxygen impairment in the Laguna watershed. The Strategy found that storm water and non-storm water runoff contributed to the impairment of the Laguna de Santa Rosa.

The Strategy implements the TMDL using four programs aimed at reducing nitrogen and organic matter inputs to the Laguna. One of these programs is the storm water permit program to eliminate or reduce the discharge of pollutants from storm water systems. The estimated waste loads were separated into storm event, non-storm loadings and summer loadings.

¹⁴ Listing covers only the Monte Rio area of this watershed from the confluence of Dutch Bill Creek to the confluence of Fife Creek and Healdsburg Memorial Beach from the Hwy 101 crossing to the railroad crossing upstream of the Beach.

¹⁵ Listing only applies to Pocket Canyon Creek, a tributary to the lower Russian River within the greater Guerneville HSA.

The Strategy identified the City of Santa Rosa, the City of Rohnert Park, the City of Cotati, the City of Sebastopol, and the Town of Windsor as contributing urban storm water to the Laguna watershed, and it recommended that all urban areas reduce nutrient loads to the Laguna watershed. The Strategy states, “Urban development has increased rapidly in the greater Santa Rosa area and contributes to the water quality problems in the Laguna.” Sonoma County was identified in the Strategy for development of a storm water program ~~in cooperation~~ as a Co-Permittee with Santa Rosa because of their discharges of storm water to the Laguna watershed and the interconnectedness of the City and County’s storm drain system.

The Strategy anticipated that TMDL implementation would reduce the total nitrogen, ammonia, total phosphate and organic matter discharges to the Laguna, and lead to a reduction of algal productivity and reduce the daily dissolved oxygen and pH excursions in the Laguna.

The Strategy was based on a watershed approach, and proposed targeting specific pollutant sources found within different areas of the watershed. The Laguna watershed was divided into four attainment areas, the lowermost point in the stream for each area being the point of attainment. Attainment point one is located in the Laguna at Trenton-Healdsburg Road, attainment point two at Guerneville Road, attainment point three at Occidental Road, and attainment point four at Stony Point Road.

These net load goals are not enforceable and are included in this Fact Sheet for reference only, because the Strategy did not include a firm compliance date. These goals will be replaced with updated waste load allocations when the updated Laguna TMDL is adopted.

Table 2. Laguna TMDL Net Load Goals for Total Nitrogen (pounds/season) in Urban Runoff

<u>Attainment Point</u>	<u>Winter Net¹⁶</u>	<u>Spring Net</u>	<u>Summer Net</u>	<u>Fall Net</u>
<u>1. Trenton-Healdsburg Road</u>	<u>182,353</u>	<u>11,789</u>	<u>0</u>	<u>7,718</u>
<u>2. Guerneville Road</u>	<u>129,960</u>	<u>5,321</u>	<u>0</u>	<u>2,543</u>
<u>3. Occidental Road</u>	<u>42,025</u>	<u>1,161</u>	<u>0</u>	<u>514</u>
<u>4. Stony Point Road</u>	<u>17,054</u>	<u>1,161</u>	<u>0</u>	<u>514</u>

¹⁶ Net Load in (pounds/season).

Table 3. Laguna TMDL Net Load Goals for Total Ammonia (pounds/season) in Urban Runoff

<u>Attainment Point</u>	<u>Winter Net¹⁷</u>	<u>Spring Net</u>	<u>Summer Net</u>	<u>Fall Net</u>
<u>1. Trenton-Healdsburg Road</u>	<u>16,174</u>	<u>942</u>	<u>0</u>	<u>539</u>
<u>2. Guerneville Road</u>	<u>11,593</u>	<u>376</u>	<u>0</u>	<u>140</u>
<u>3. Occidental Road</u>	<u>3,589</u>	<u>50</u>	<u>0</u>	<u>10</u>
<u>4. Stony Point Road</u>	<u>1,318</u>	<u>50</u>	<u>0</u>	<u>10</u>

Until adoption of this Order, the storm water program did not include monitoring to determine compliance with the waste loads for each attainment point. This Order includes a Monitoring and Reporting Program with outfall monitoring to collect data related to Strategy compliance.

This Order includes several programs to implement the Strategy, such as treatment requirements for new development, inspections for nurseries, information and outreach for businesses and the public on fertilizer use and storage, municipal operations fertilizer use and catch basin clean out, new outfall monitoring, BMPs to control non-storm water flows, and special studies. Section A. Discharge Prohibitions and Section E. Special Provisions of this Order include requirements to meet the goals of the Laguna TMDL for storm water and non-storm water discharges. Monitoring and Reporting Program No. R1-2009-0050 includes requirements to monitor MS4 outfalls to compare with the goals of the TMDL.

Regional Water Board staff is currently developing an updated TMDL for the Laguna watershed and anticipates that it will be adopted within the term of this Order. This Order includes a requirement in year five to submit a report on compliance with Strategy goals, unless the updated TMDL is adopted prior to the due date of the report.

In support of the TMDL effort, Regional Water Board staff recently collaborated with the Laguna de Santa Rosa Foundation to conduct an assessment of existing water quality, hydrology, sediment transport, and ecosystem function to develop a conceptual framework for conducting the updated Laguna TMDL. The Altered Laguna, A Conceptual Model for Watershed Stewardship, published in 2007, was developed with a Technical Advisory Committee and was peer reviewed by the San Francisco Estuary Institute. The Altered Laguna confirmed the impaired conditions within the Laguna relative to temperature, nutrients, sediments, and dissolved oxygen.

¹⁷ Net Load in (pounds/season).

Table 3. Laguna TMDL Net Load Goals for Total Ammonia (pounds/season) in Urban Runoff

<u>Attainment Point</u>	<u>Winter Net¹⁷</u>	<u>Spring Net</u>	<u>Summer Net</u>	<u>Fall Net</u>
<u>1. Trenton-Healdsburg Road</u>	<u>16,174</u>	<u>942</u>	<u>0</u>	<u>539</u>
<u>2. Guerneville Road</u>	<u>11,593</u>	<u>376</u>	<u>0</u>	<u>140</u>
<u>3. Occidental Road</u>	<u>3,589</u>	<u>50</u>	<u>0</u>	<u>10</u>
<u>4. Stony Point Road</u>	<u>1,318</u>	<u>50</u>	<u>0</u>	<u>10</u>

Until adoption of this Order, the storm water program did not include monitoring to determine compliance with the waste loads for each attainment point. This Order includes a Monitoring and Reporting Program with outfall monitoring to collect data related to Strategy compliance.

This Order includes several programs to implement the Strategy, such as treatment requirements for new development, inspections for nurseries, information and outreach for businesses and the public on fertilizer use and storage, municipal operations fertilizer use and catch basin clean out, new outfall monitoring, BMPs to control non-storm water flows, and special studies. Section A. Discharge Prohibitions and Section E. Special Provisions of this Order include requirements to meet the goals of the Laguna TMDL effort for storm water and non-storm water discharges. Monitoring and Reporting Program No. R1-2009-0050 includes requirements to monitor MS4 outfalls to compare with the goals of the TMDL.

Regional Water Board staff is currently developing an updated TMDL for the Laguna watershed and anticipates that it will be adopted within the term of this Order. This Order includes a requirement in year five to submit a report on compliance with Strategy goals, unless the updated TMDL is adopted prior to the due date of the report.

In support of the TMDL effort, Regional Water Board staff recently collaborated with the Laguna de Santa Rosa Foundation to conduct an assessment of existing water quality, hydrology, sediment transport, and ecosystem function to develop a conceptual framework for conducting the updated Laguna TMDL. The Altered Laguna, A Conceptual Model for Watershed Stewardship, published in 2007, was developed with a Technical Advisory Committee and was peer reviewed by the San Francisco Estuary Institute. The Altered Laguna confirmed the impaired conditions within the Laguna relative to temperature, nutrients, sediments, and dissolved oxygen.

¹⁷ Net Load in (pounds/season).

- (e) Public Construction Activities Management
- (f) Landscape and Recreational Facilities Management
- (g) Storm Drain System Operation and Management
- (h) Street and Road Maintenance
- (i) Parking Facilities Management
- (j) Emergency Procedures
- (k) Illicit Discharge Detection and Elimination
- (l) Public Education and Outreach
- (m) Industrial/Commercial Outreach
- (n) School Education
- (o) Effectiveness Evaluation
- (p) Fiscal Analysis

The Management Plan contains specific measurable goals that the Co-Permittees believe would achieve pollution reductions to the MEP. The selection of the measurable goals was made using projections of future revenues to fund the implementation of these goals. Those revenue projections may change considerably over the permit term, especially when considering forecasts for the state budget as a whole. If the state makes budgetary changes that reduce available discretionary funding for the municipalities, certain measurable goals now required by the Management Plan may become cost prohibitive. The Regional Water Board has delayed the implementation of the majority of the requirements in the Order to April 1, 2011 or later. In such budgetary conditions, it may be necessary to delay the implementation of those measurable goals. If this situation occurs, the Co-Permittees may request a delay or modification of the measurable goals. It is expected that these requests will be included in the annual report for that year. The Co-Permittees will have the burden to demonstrate to the Regional Water Board that a delay in measurable goals is appropriate based on a showing of the applicable budgetary constraints, prior best efforts to secure financing, and a plan to prospectively restore the prior level measurable goal implementation. The Co-Permittees will identify the measurable goals proposed to be delayed and will discuss program priorities and funding limitations with Regional Water Board staff. Proposed modifications of the Management Plan to delay the implementation of cost prohibitive measurable goals would then be proposed for consideration by the Regional Water Board at a duly noticed public hearing.

Regional Water Board staff has worked with the Co-Permittees in order to develop a Management Plan that meets the MEP criteria, would be consistent with the iterative BMP implementation process and would include measurable goals to evaluate program performance. The submitted Management Plan contains many significant improvements over the Management Plan for the previous permit term. However, Regional Water Board staff has identified several other tasks that are necessary to help improve storm water quality and meet the MEP criteria. These tasks are consistent with permit language in other MS4 permits in California and reflect current storm water management practices, and are being required in this Order.

discharges that must be met to comply with this Order prior to the municipalities providing ministerial approvals for projects. For water quality purposes, regardless of whether approvals for projects that may cause storm water impacts are discretionary or ministerial, the Regional Water Board requires in this Order that all new development and significant redevelopment activity in specified categories incorporate storm water treatment requirements.

The objective of this Order is to protect the beneficial uses of receiving waters in that part of Sonoma County within the jurisdiction of the Regional Water Board. To meet this objective, the Order requires that BMPs will be implemented to reduce the discharge of pollutants in storm water to MEP, and achieve water quality objectives and standards. U.S.EPA envisioned that municipal storm water programs would be implemented in an iterative manner and improved with each iteration by using information and experience gained during the previous permit term. (*Interpretative Policy Memorandum on Reapplication Requirements for MS4 permits* - 61 Fed. Reg. 41697.) Municipalities are required to evaluate what is effective and make improvements in order to protect beneficial uses of receiving waters. This Order requires implementation of an effective combination of pollution control and pollution prevention measures, education, public outreach, planning, and implementation of source control BMPs and structural and treatment control BMPs. The prescribed BMPs combined with the performance objectives outlined in this Order have the purpose of attaining water quality objectives and standards (*Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits*- 61 Fed. Reg. 43761).

The implementation of measures set forth in this Order is reasonably expected to reduce the discharge of pollutants conveyed in storm water and non-storm water discharges into receiving waters.

During the term of the Order, the Co-Permittees shall implement all necessary control measures to reduce pollutant(s) which may cause or contribute to water quality impairments, but for which TMDLs have not yet been developed or approved to eliminate the water quality impairment(s). Successful efforts to reverse MS4 related impairments during the permit term for such pollutants may avoid the need for a WLA or the need to develop a TMDL in the future.

This Order provides flexibility for Co-Permittees to petition the Regional Water Board Executive Officer to substitute a BMP program under this Order with an alternative BMP program, if they can provide information and documentation that the effectiveness of the alternative is equal to or greater than the prescribed BMP program in meeting the objectives of this Order.

Co-Permittees are to work cooperatively to control the contribution of pollutants from one portion of the MS4 to another portion of the system through inter-agency agreements or other formal arrangements.

Updating ordinances and approval processes is necessary in order for the

WQ 91-03 and WQ 91-04), and the Regional Water Board have maintained that MS4 permits can contain narrative requirements for the implementation of BMPs in place of numeric effluent limits.¹⁹

In addition to relying on U.S.EPA's legal opinion concluding that MS4s must meet MEP and water quality standards, the State Water Board also relied on the CWA's explicit authority for States to require "such other provisions that the Administrator or the State determines appropriate for the control of such pollutants" in addition to the technology based standard of MEP. To further support its conclusions that MS4 permit dischargers must meet water quality standards, the State Water Board relied on provisions of the Water Code that specify that all waste discharge requirements must implement applicable Basin Plans and take into consideration the appropriate water quality objectives for the protection of beneficial uses.

The State Water Board first formally concluded that permits for MS4s must contain effluent limitations based on water quality standards in its Order No. WQ 91-03. In that Order, the State Water Board also concluded that it was appropriate for Regional Water Boards to achieve this result by requiring best management practices, rather than by inserting numeric effluent limitations into MS4 permits. Later, in Order No. WQ 98-01, the State Water Board prescribed specific precedent setting RWL language to be included in all future MS4 permits. This language specifically requires that MS4 dischargers meet water quality standards and allows for the use of narrative BMPs (increasing in stringency and implemented in an iterative process) as the mechanism by which water quality standards can be met.

In Order No. WQ 99-05, the State Water Board modified its RWL language in Order No. WQ 98-01 to meet specific objections by U.S.EPA (the modifications resulted in stricter compliance with water quality standards). State Water Board Order No. WQ 99-05 sets out receiving water limitations, based upon U.S.EPA's objection to the receiving water limitation language in Order No. WQ 98-01 and its adoption of alternative language. That alternative language requires permittees to comply with discharge prohibitions and receiving water limitations through timely implementation of control measures and other actions to reduce pollutants in discharges in accordance with the storm water management plan (SWMP), which is designed to achieve compliance with receiving water limitations, and other requirements of the permit. If exceedances of water quality objectives or water quality standards (collectively referred to as WQS) persist notwithstanding implementation of the SWMP and other requirements of the permit, the permittees must assure compliance with discharge prohibitions and receiving water limitations by complying with a procedure that implements an iterative process that requires modification of BMPs and updates to the SWMP. In this Order, the Regional Water Board made a slight modification of the language from Order No. WQ 99-05. In

¹⁹ For the most recent assessment, see Storm Water Panel Recommendations to the California State Water Resources Control Board, 2006. *The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial, and Construction Activities.*

that Order, the permittees are not required to repeat procedures for continuing or recurring exceedances of the same RWL unless directed by the Regional Water Board to develop additional BMPs. Based on the Regional Water Board staff's experience in the implementation of this section, the Regional Water Board changed ~~that~~the section to require that the Co-Permittees continue to implement the iterative process, using alternative BMPs or combination of BMPs unless otherwise directed by the Regional Water Board Executive Officer. The concern was that without the requirement to continue the iterative process unless otherwise directed, the Co-Permittees would stop the process of trying additional BMPs, and too much time would pass before the Regional Water Board would know of the continuing violation and be able to require additional BMPs. If, however, the Co-Permittees find that their efforts are futile, they can come to the Regional Water Board Executive Officer to request that they not be required to continue the iterative process.

In the 1999 case involving MS4 permits issued by U.S.EPA to several Arizona cities (*Defenders of Wildlife v. Browner*, 1999, 197 F. 3d 1035), the United States Court of Appeals for the Ninth Circuit upheld U.S.EPA's requirement for MS4 dischargers to meet water quality standards, but it did so on the basis of U.S.EPA's discretion rather than on the basis of strict compliance with the Clean Water Act. In other words, while holding that the Clean Water Act does not require all MS4 discharges to comply strictly with state water quality standards, the Court also held that U.S.EPA has the authority to determine that ensuring strict compliance with state water quality standards is necessary to control pollutants. On the question of whether MS4 permits must contain numeric effluent limitations, the court upheld U.S.EPA's use of iterative BMPs in place of numeric effluent limits.

On October 14, 1999, the State Water Board issued a legal opinion on the federal appellate decision and provided advice to the Regional Water Boards on how to proceed in the future. In the memorandum, the State Water Board concludes that the recent Ninth Circuit opinion upholds the authority of U.S.EPA and the State to (continue to) issue permits to MS4s that require compliance with water quality standards through iterative BMPs. Moreover, the memorandum states that "[...] because most MS4 discharges enter impaired water bodies, there is a real need for permits to include stringent requirements to protect those water bodies. As TMDLs are developed, it is likely that MS4s will have to participate in pollutant load reductions, and the MS4 permits are the most effective vehicles for those reductions." In summary, the State Water Board found that the Regional Water Boards should continue to include the RWL established in State Water Board Order No. WQ 99-05 in all future permits.

The issue of the RWL language was also central to the Building Industry Association's appeal of Order No. 2001-01 (San Diego MS4 permit). The Building Industry Association (BIA) contended that the MEP standard was a ceiling on what could be required of the Co-Permittees in implementing their storm water runoff management programs, and that Order No. 2001-01's RWL requirements exceeded that ceiling. In other words, BIA argued that the Co-Permittees could not be required to comply with receiving water limitations if they necessitated efforts which went beyond the MEP

remainder of the program costs were either pre-existing or resulted from enhancement of pre-existing programs.

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 ~~Although the Co-Permittees have not submitted cost information with adequate detail for analysis, it is unlikely that the program costs are higher than the ranges discussed above.~~

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 ~~bathing/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

³¹ Ribaldo 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.

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 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 ~~staff is currently working on~~ 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

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~~ Water runoff-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. Brashear, 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).

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 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:

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.

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

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 ~~variance~~ exception to these requirements, and the process to grant a ~~variance~~ 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 constructions 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

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 therefore being placed on the State's CWA section 303(d) list of impaired waters. Water quality monitoring is needed ~~to assess compliance~~ 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.

California Regional Water Quality Control Board
North Coast Region

Monitoring and Reporting Program No. R1-2009-0050
NPDES No. CA0025054

For

The City of Santa Rosa, the County of Sonoma, and
the Sonoma County Water Agency

Storm Water and Non-Storm Water Discharges from Municipal Separate Storm Sewer
Systems

Sonoma County

Monitoring Program

1. The primary objectives of the Monitoring Program include, but are not limited to:
 - (a) Assessing the chemical, and biological impacts of storm water discharges on receiving waters resulting from urban storm water discharges;
 - (b) Assessing the overall health and evaluating long-term trends in receiving water quality;
 - (c) Assessing compliance with water quality ~~objectives~~standards;
 - (d) Characterization of the quality of storm water discharges;
 - (e) Identifying sources of pollutants; and
 - (f) Measuring and improving the effectiveness of requirements implemented under this Order and assessing the resultant reductions in pollutant loads.
2. The results of the monitoring requirements outlined below shall be used to refine BMPs for the reduction of pollutant loading and the protection and enhancement of the beneficial uses of the receiving waters in Sonoma County.
3. The Co-Permittees shall implement the Monitoring Program described below.

A. Chemical Monitoring

1. Outfall Mass Chemical Monitoring
 - (a) For each outfall, samples shall be collected in accordance with 40 CFR 122.21(g)(7).
 - (b) Frequency: The Co-Permittees will be responsible for annually monitoring six outfalls within the Laguna de Santa Rosa watershed. Wet weather samples shall be flow weighted composites, collected during the first 24 hours or for the duration of the storm event if it is less than 24 hours. Samples shall be collected from an outfall discharge resulting from a storm event that is 0.25 inches or greater. The flow-weighted composite sample for a storm water discharge shall be taken with a continuous sampler, or it shall be taken as a combination of a minimum of 3 sample aliquots, taken in each hour of discharge for the first 24 hours of the discharge or for the entire discharge if the storm event is less than 24

hours, with each aliquot being separated by a minimum of 15 minutes within each hour of discharge. The outfall locations shall be developed in consultation with Regional Water Board staff and shall be submitted to the Executive Officer for approval by January 1, 2010. The monitoring shall include four events per year (two events during the wet season and two events during the dry season) at each outfall. Flow may be estimated using U.S.EPA methods at sites where flow measurement devices are not feasible. Grab samples (or instantaneous automatic measurements) shall be taken only for pathogen indicators, hardness (as mg/L CaCO₃), pH, temperature, and DO.

(c) Outfall Chemical Monitoring Constituents:

Total Suspended Solids (TSS)	Total Phosphorus
pH	Orthophosphate
Temperature	13 Priority Pollutant Metals USEPA Method 200 ¹ or 6000/7000
Biological Oxygen Demand (BOD)	Fecal Coliform
Total Kjeldahl Nitrogen (TKN)	E. Coli
Nitrate as N	Enterococcus
Nitrite as N	Hardness as CaCO ₃
Ammonia	Dissolved Oxygen (DO)

2. Receiving Water Chemical Monitoring

(a) For each sampling location, samples shall be collected in accordance with 40 CFR 122.21(g)(7).

(b) Frequency: monthly grab samples on Santa Rosa Creek - one site upstream and one site downstream of the urban area of the City of Santa Rosa.

(c) Receiving Water Monitoring Constituents:

TSS	Ammonia
pH	Total Phosphorus
Temperature	Orthophosphate
BOD	Fecal Coliform
TKN	E. Coli
Nitrate as N	Enterococcus
Nitrite as N	DO

B. Aquatic Toxicity Monitoring

1. The objective of aquatic toxicity monitoring is to evaluate if discharges from the MS4 are causing or contributing to aquatic life toxicity in receiving waters.

¹ Frequency is once during the term of this Order.

2. Chronic Bioassays

- (a) Frequency: Twice per year during periods of storm runoff discharge, three locations in receiving waters (Santa Rosa Creek – two sites) and downstream from discharge outfalls (Colgan and Piner Creeks – one site per event). The storm events shall be separated by a minimum of seven days of dry weather.
 - (b) Test species for chronic testing shall be a vertebrate, the fathead minnow, *Pimephales promelas* (larval survival and growth test), an invertebrate, the water flea, *Ceriodaphnia dubia* (survival and reproduction test), and a plant, the green alga, *Selenastrum capricornutum* (growth test).
3. Samples for toxicity can be taken as grab or flow-weighted composites samples during periods of urban storm runoff discharge influence on the receiving water, and can be collected manually or automatically.
 4. Sample storage (holding time) time shall not exceed 72 hours (from collection through lab processing).
 5. All constituents that caused toxicity or exceeded any applicable water quality objectives the previous year shall be listed in each Annual Storm Water Report.
 6. A summary of the years' aquatic toxicity monitoring results with corresponding sampling dates shall be included with the Annual Storm Water Report.

C. Bioassessment

1. The Co-Permittees shall perform a bioassessment on five creek reaches, once during the permit term following the procedures set out in the Surface Water Ambient Monitoring Protocol (SWAMP).

D. Special Studies

1. Temperature Monitoring
 - (a) Each year the Co-Permittees shall monitor ten sites on Santa Rosa, Brush, Colgan, and Paulin Creeks with remote data loggers during the low flow season.
2. Bacteria Monitoring
 - (a) The Co-Permittees shall use bacteria infrared aerial imagery over Santa Rosa Creek and tributaries upstream of the Prince Memorial Greenway to identify any potential sewage leaks or locations needing further investigation once during the permit term.
3. Visual Flow Monitoring
 - (a) Volunteers and Co-Permittees' staff shall visually monitor flows in streams and storm drain outfalls within the Co-Permittees' jurisdiction to detect

~~excessive~~ summertime non-storm water flows or abnormal discharges. Data collected shall include photographs (if possible), estimates of flow rate, description of algae growth if found, and descriptions of color, odor, floatables, debris, etc. This data shall be used to investigate, as needed, the drainage area contributing to storm drain outfalls for non-storm water flows. This information will be summarized in Annual Reports.

4. Kelly Farm Nutrient Monitoring

- (a) The Co-Permittees shall monitor the Laguna Subregional Water Reclamation System's Kelly Farm for nutrient runoff during storm events. This program shall monitor surface water runoff from the Kelly Farm in Duer Creek. The Co-Permittees shall sample two runoff events per year for two years. Multiple samples per event must be collected from Duer Creek as it enters and leaves the Kelly Farm for ammonia, nitrate nitrogen, total nitrogen and phosphorus. The draft study plan shall be submitted to the Regional Water Board for Executive Officer approval. The study shall be completed and results submitted to the Regional Water Board as part of the Year 4 annual report.

5. BMP Effectiveness Special Study

- (a) The Co-Permittees are proposing to develop and implement a water quality based study to (1) provide storm drain outfall monitoring data, and (2) evaluate the effectiveness of specific BMPs through a controlled study. Storm water discharges will be collected and analyzed in response to rain events. BMPs will be installed and monitoring will be completed to quantify the effectiveness of the BMPs. The draft study proposal shall be submitted to the Regional Water Board for Executive Officer approval. Study results and findings and recommendations will be reported as part of the Year 4 annual report.

6. Volunteer Monitoring Programs

- (a) The Co-Permittees shall encourage or support the development and implementation of volunteer monitoring programs in watersheds within the permit boundary.

E. Standard Monitoring and Reporting Provisions

1. All monitoring activities shall meet the following requirements:

- (a) Monitoring and Records [40 CFR 122.41(j)(1)]
 - (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- (b) Monitoring and Records [40 CFR 122.41(j)(2)] [Water Code §13383(a)]
 - (1) The Co-Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the Report of Waste Discharge

- (1) An actual numerical value for sample results greater than or equal to the ML;
 - (2) Not-detected (ND) for sample results less than the laboratory's MDL with the MDL indicated for the analytical method used; or
 - (3) Detected, but Not Quantified (DNQ) if results are greater than or equal to the laboratory's MDL but less than the ML. The estimated chemical concentration of the sample shall also be reported. This is the concentration that results from the confirmed detection of the substance by the analytical method below the ML value.
- (i) For priority toxic pollutants, if the Co-Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Co-Permittees must submit documentation from the laboratory to the Regional Water Board Executive Officer for approval prior to raising the ML for any constituent.
 - (j) Monitoring Reports [40 CFR 122.41(I)(4)(ii)]
 - (1) If the Co-Permittees monitor any pollutant more frequently than required by this Order using test procedures approved under 40 CFR part 136, unless otherwise specified in the Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Annual Monitoring Reports.
 - (k) Monitoring Reports [40 CFR 122.41(I)(4)(iii)]
 - (1) Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order.
 - (l) The Regional Water Board Executive Officer or the Regional Water Board, consistent with 40 CFR 122.41, may approve changes to the Monitoring Program, after providing the opportunity for public comment, either:
 - (1) By petition of the Co-Permittees or by petition of interested parties after submittal of the Monitoring Report. Such petition shall be filed not later than 60 days after the Monitoring Report submittal date; or
 - (2) As deemed necessary by the Regional Water Board Executive Officer following notice to the Co-Permittees.

Reporting Program

F. Reporting Program Requirements

~~The Co-Permittees shall submit an annual report in compliance with the Storm Water Management Plan (SWMP) and the requirements of Order No. R1-2009-0050 to the Regional Water Board Executive Officer in the form of a one hard copy and one electronic copy. The Annual Report shall document the status of the general storm water program, the results of monitoring conducted under this Order, progress on implementing measurable goals, and compliance with the SWMP and Order No. R1-2009-0050.~~