

## VI. Provisions

### A. Standard Provisions (TBD)

### B. Monitoring and Reporting Program (MRP) Requirements (TBD)

### C. Special Provisions

#### 1. General Requirements

- a. Each Permittee shall implement the requirements in Parts [TBD for each Minimum Control Measure (MCM)] below, or customized actions within each of these general categories of control measures to achieve equivalent pollutant control, considering the water quality conditions in the area under the Permittee's jurisdiction or within the watershed, where approved by the Executive Officer. [Placeholder for language linking customized MCMs to TMDL provisions, including reasonable assurance provisions.] Implementation shall be consistent with the requirements of 40 CFR § 122.26(d)(2)(iv).

#### b. Timelines for Implementation

- i. Unless otherwise noted in Part VI.C.6 or in Table [TBD] below, each Permittee shall ensure implementation of the requirements contained in Part VI.C.6. upon the Effective Date of the Order.
- ii. Each Permittee shall ensure implementation of the following requirements per the schedule specified in Table [TBD] below:

**Table [TBD] -**

Part	Provision	Due Date

### c. Minimum Control Measure Definitions

- i. **BMP:** Best Management Practice; a practice or physical device or system designed to prevent or reduce pollutant loading from stormwater or non-stormwater discharges to receiving waters, or designed to reduce the volume of stormwater or non-stormwater discharged to the receiving water.
- ii. **Biofiltration:** A LID BMP that reduces stormwater pollutant discharges by intercepting rainfall on vegetative canopy, and through evapotranspiration, incidental infiltration, and filtration. As described in the *Ventura County Technical Guidance Manual*, studies have demonstrated that bioinfiltration of 1.5 times the stormwater quality design volume (SWQDv) provides approximately equivalent or greater reductions in pollutant loading when compared to bioretention or infiltration of the SWQDv.<sup>1</sup> Incidental infiltration is an important factor in achieving the required pollutant load reduction. Therefore, the term “biofiltration” as used in this Order is defined to include only systems designed to facilitate incidental infiltration. Biofiltration BMPs include bioretention systems with an underdrain and bioswales.
- iii. **Bioretention:** A LID BMP that reduces stormwater runoff by intercepting rainfall on vegetative canopy, and through evapotranspiration and infiltration. The bioretention system typically includes a minimum 2-foot top layer of a specified soil and compost mixture underlain by a gravel-filled temporary storage pit dug into the *in-situ* soil. As defined in this Order, a bioretention BMP may be designed with an overflow drain, but may not include an underdrain. When a bioretention BMP is designed or constructed with an underdrain it is regulated in this Order as biofiltration.
- iv. **Bioswale:** A LID BMP consisting of a shallow channel lined with grass or other dense, low-growing vegetation. Bioswales are designed to collect stormwater runoff and to achieve a uniform sheet flow through the dense vegetation for a period of several minutes.
- v. **Effective impervious area (EIA):** the portion of the surface area that is hydrologically connected to a drainage system via a hardened conveyance or impervious surface without any intervening median to mitigate the flow volume.
- vi. **Green roof:** A LID BMP using planter boxes and vegetation to intercept rainfall on the roof surface. Rainfall is intercepted by vegetation leaves and through evapotranspiration. Green roofs may be designed as either a bioretention BMP or as a planter box flow-through treatment BMP. To receive credit as a bioretention BMP, the

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<sup>1</sup> Geosyntec Consultants and Larry Walker Associates. 2011. *Ventura County Technical Guidance Manual for Stormwater Quality and Control Measures, Manual Update 2011. Appendix D*. Prepared for the Ventura Countywide Stormwater Quality Management Program. July 13, 2011. pp. D-6 – D-15.

green roof system planting medium shall be of sufficient depth to provide capacity within the pore space volume to contain the design storm depth and may not be designed or constructed with an underdrain.

- vii. Improved drainage system:** a drainage system that has been channelized or armored. The clearing or dredging of a natural drainage system does not cause the system to be classified as an improved drainage system.
- viii. Infiltration:** A LID BMP that reduces stormwater runoff by capturing and infiltrating the runoff into in-situ soils or amended on-site soils. Examples of infiltration BMPs include infiltration basins, dry wells, and pervious pavement.<sup>2</sup>
- ix. LID:** Low Impact Development; building and landscape features designed to retain or filter stormwater runoff.
- x. Natural drainage system:** a drainage system that has not been improved (e.g., channelized or armored). The clearing or dredging of a natural drainage system does not cause the system to be classified as an improved drainage system.
- xi. Planter boxes and other flow-through treatment BMPs:** modular, vault type planter boxes or “high flow biotreatment” devices contained within an impervious vault with an underdrain or designed with an impervious liner and an underdrain. Planter boxes do not allow for incidental infiltration and therefore do not meet the requirements for biofiltration as defined in this Order. However, planter boxes may be used to meet the Water Quality Mitigation Criteria as specified in Part [TBD] of this Order.
- xii. Rainfall harvest and use:** an LID BMP system designed to capture runoff from a roof and to provide for temporary storage until the harvested water can be used for irrigation or non-potable uses. The harvested water may also be used for potable water uses if the system includes disinfection treatment and is approved for such use by the local building department.

## 2. Legal Authority

- a.** Each Permittee must establish and maintain adequate legal authority, within its respective jurisdiction, to control pollutant discharges into and from its MS4 through ordinance, statute, permit, contract or similar means. This legal authority must, at a minimum, authorize or enable the Permittee to:

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<sup>2</sup> Some types of infiltration BMPs such as dry wells, may meet the definition of a Class V, deep well injection facility and may be subject to permitting under U.S. EPA requirements.

- i.** Control the contribution of pollutants to its MS4 from stormwater discharges associated with industrial and construction activity and control the quality of stormwater discharged from industrial and construction sites. This requirement applies both to industrial and construction sites with coverage under an NPDES permit, as well as to those sites that do not have coverage under an NPDES permit. Grading ordinances must be updated and enforced as necessary to comply with this Order;
- ii.** Prohibit all non-stormwater discharges not otherwise conditionally allowed pursuant to Part [TBD];
- iii.** Prohibit and eliminate illicit discharges and illicit connections to the MS4;
- iv.** Control the discharge of spills, dumping, or disposal of materials other than stormwater to its MS4;
- v.** Require compliance with conditions in Permittee ordinances, permits, contracts or orders (i.e., hold dischargers to its MS4 accountable for their contributions of pollutants and flows);
- vi.** Utilize enforcement mechanisms to require compliance with applicable ordinances, permits, contracts, or orders;
- vii.** Control the contribution of pollutants from one portion of the shared MS4 to another portion of the MS4 through interagency agreements among Co-permittees;
- viii.** Control of the contribution of pollutants from one portion of the shared MS4 to another portion of the MS4 through interagency agreements with other owners of the MS4 such as the State of California Department of Transportation;
- ix.** Carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with applicable municipal ordinances, permits, contracts and orders, and with the provisions of this Order, including the prohibition of non-stormwater discharges into the MS4 and receiving waters. This means the Permittee must have authority to enter, monitor, inspect, take measurements, review and copy records, and require regular reports from entities discharging into its MS4;
- x.** Require the use of control measures to prevent or reduce the discharge of pollutants to achieve Water Quality Standards;
- xi.** Require that structural BMPs are properly operated and maintained; and



## **5. Responsibilities of the Permittees (TBD)**

## **6. Public Information and Participation Program**

### **a. General**

- i. Each Permittee shall implement a Public Information and Participation Program (PIPP) that includes, but is not limited to, the requirements listed in this part. Each Permittee shall be responsible for developing and implementing the PIPP and implementing specific PIPP requirements. The objectives of the PIPP are as follows:
- ii. To measurably increase the knowledge of the target audiences about the MS4, the adverse impacts of stormwater pollution on receiving waters and potential solutions to mitigate the impacts.
- iii. To measurably change the waste disposal and stormwater pollution generation behavior of target audiences by developing and encouraging the implementation of appropriate alternatives.
- iv. To involve and engage a diversity of socio-economic groups and ethnic communities in Los Angeles County to participate in mitigating the impacts of stormwater pollution.

### **b. PIPP Implementation**

- i. Each Permittee shall implement the PIPP requirements listed in this part using one or more of the following approaches:
  - (1) By participating in a County sponsored PIPP
  - (2) By participating in one or more Watershed Group sponsored PIPPs
  - (3) Or individually within its jurisdiction.
- ii. If participating in a County or Watershed Group PIPP, provide the contact information for their appropriate staff responsible for stormwater public education activities to the organizing body (i.e., County or Watershed Group) and contact information changes no later than 30 days after a change occurs.

### **c. Public Participation**

- i. Each Permittee, whether participating in a County or Watershed Group sponsored PIPP, or acting individually, shall provide a means for public reporting of clogged catch basin inlets and illicit discharges/dumping, faded or missing catch basin labels, and general stormwater management information.

- (1) Permittees may elect to use the 888-CLEAN-LA hotline as the general public reporting contact or each Permittee or Watershed Group may establish its own hotline, if preferred.
  - (2) Each Permittee shall include the reporting information, updated when necessary, in public information, and the government pages of the telephone book, as they are developed or published.
  - (3) Each Permittee shall identify staff or departments who will serve as the contact person(s) and shall make this information available on its website.
  - (4) Each Permittee is responsible for providing current, updated hotline contact information to the general public within its jurisdiction.
- ii. Organize events targeted to residents and population subgroups to educate and involve the community in stormwater pollution prevention and clean-up (e.g., education seminars, clean-ups, and community catch basin stenciling).

**d. Residential Outreach Program**

- i. Working in conjunction with a County or Watershed Group sponsored PIPP or individually, each Permittee shall implement the following activities:
- (1) Conduct stormwater pollution prevention public service announcements and advertising campaigns
  - (2) Public education materials shall include but are not limited to information on the proper handling (i.e., disposal, storage and/or use) of:
    - (a) Vehicle waste fluids
    - (b) Household waste materials (i.e., trash and household hazardous waste, including personal care products and pharmaceuticals)
    - (c) Construction waste materials
    - (d) Pesticides and fertilizers (including integrated pest management practices [IPM] to promote reduced use of pesticides),
    - (e) Green waste (including lawn clippings and leaves)
    - (f) Animal wastes

- (3) Distribute activity specific stormwater pollution prevention public education materials at, but not limited to, the following points of purchase:
  - (a) Automotive parts stores
  - (b) Home improvement centers / lumber yards / hardware stores
  - (c) Landscaping / gardening centers
  - (d) Pharmacies
  - (e) Pet shops / feed stores
- (4) Maintain stormwater websites or provide links to stormwater websites via the Permittee's website, which shall include educational material and opportunities for the public to participate in stormwater pollution prevention and clean-up activities listed in Part [TBD – this part].
- (5) Provide independent, parochial, and public schools within in each Permittee's jurisdiction with materials to educate school children (K-12) on stormwater pollution. Material may include videos, live presentations, and other information. Permittees are encouraged to work with, or leverage, materials produced by other statewide agencies and associations such as the State Water Board's "Erase the Waste" educational program and the California Environmental Education Interagency Network (CEEIN) to implement this requirement.
- (6) When implementing activities in (1)-(4), Permittees shall use effective strategies to educate and involve ethnic communities in stormwater pollution prevention through culturally effective methods.

## **7. Industrial/Commercial Facilities Program**

### **a. General**

- i. Each Permittee shall implement an Industrial / Commercial Facilities Program that meets the requirements of this Part, prevents illicit discharges into the MS4 and receiving waters, reduces industrial / commercial discharges of stormwater to the maximum extent practicable, and prevents industrial / commercial discharges from the MS4 from causing or contributing to a violation of water quality standards. At a minimum, the Industrial / Commercial Facilities Control Program shall be implemented in accordance with the requirements listed in this part, or an equivalent Industrial / Commercial Facilities Control Program as approved in a Permittee's individual or watershed based Reasonable Assurance Program (RAP) per Part 7.

- (1) Track
- (2) Educate
- (3) Inspect
- (4) Ensure compliance with municipal ordinances at industrial and commercial facilities that are critical sources of pollutants in stormwater

ii. The BMPs listed in Parts [TBD – TBD] below refer to the January 2003 version of the California Stormwater BMP Handbook, Industrial and Commercial. Permittees are authorized to substitute the listed BMPs with the equivalent BMP contained in the most current version of the California Stormwater BMP Handbook, Industrial and Commercial, throughout the term of this Order.

**b. Track Critical Sources**

i. Each Permittee shall maintain an updated watershed-based inventory or database containing the latitude / longitude coordinates of all industrial and commercial facilities within its jurisdiction that are critical sources of stormwater pollution. The inventory or database shall be maintained in electronic format and incorporation of facility information into a Geographical Information System (GIS) is recommended. Critical Sources to be tracked are summarized below, and specified in Attachment [TBD]:

- (1) Commercial Facilities
  - (a) Restaurants
  - (b) Automotive service facilities (including those located at automotive dealerships)
  - (c) RGOs
  - (d) Nurseries and Nursery Centers (Merchant Wholesalers, Nondurable Goods, and Retail Trade)
- (2) U.S. EPA “Phase I” Facilities [as specified in 40 CFR §122.26(b)(14)(i)-(xi)]
- (3) Other federally-mandated facilities [as specified in 40 CFR §122.26(d)(2)(iv)(C)]
  - (a) Municipal landfills
  - (b) Hazardous waste treatment, disposal, and recovery facilities
  - (c) Industrial facilities subject to section 313 “Toxic Release Inventory” reporting requirements of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) [42 U.S.C. 11023]

- (4) All other commercial or industrial facilities tributary to a waterbody segment addressed by TMDL Provisions in Part 7, where the facility generates pollutants addressed by the TMDL for that waterbody.
  - (5) All other commercial or industrial facilities that the Permittee determines may contribute a substantial pollutant load to the MS4.
- ii.** Each Permittee shall include the following minimum fields of information for each critical source industrial and commercial facility identified in its watershed-based inventory or database:
- (1) Name of facility
  - (2) Name of owner/ operator and contact information
  - (3) Address of facility (physical and mailing)
  - (4) North American Industry Classification System (NAICS) code
  - (5) Standard Industrial Classification (SIC) code
  - (6) A narrative description that describes the economic activities performed and principal products used at each facility
  - (7) Status of exposure of materials to stormwater
  - (8) Name of receiving water
  - (9) Identification of whether the facility is tributary to a CWA § 303(d) listed waterbody segment or waterbody segment subject to a TMDL, where the facility generates pollutants for which the waterbody segment is impaired.
  - (10) Coverage under the Permit for the Discharge of Stormwater Associated with Industrial Activities (Industrial General Permit) or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to stormwater discharges.
- iii.** Each Permittee shall update its inventory of critical sources at least annually. The update shall 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 licenses, pretreatment permits, sanitary sewer connection permits, and similar information).

**c. Educate Industrial/Commercial Sources**

- i.** At least once during the five-year period of this Order, each Permittee shall notify the owner/operator of each of its inventoried commercial and industrial sites identified in Part [TBD] of the BMP requirements applicable to the site/source.

**ii. Business Assistance Program**

- (1) Each Permittee shall implement a Business Assistance Program to provide technical information to businesses to facilitate their efforts to reduce the discharge of pollutants in stormwater. Assistance shall be targeted to select business sectors or small businesses upon a determination that their activities may be contributing substantial pollutant loads to the MS4 or receiving water. Assistance may include technical guidance and provision of educational materials. The Program may include:
  - (a) On-site technical assistance, telephone, or e-mail consultation regarding the responsibilities of business to reduce the discharge of pollutants, procedural requirements, and available guidance documents.
  - (b) Distribution of stormwater pollution prevention educational materials to operators of auto repair shops; car wash facilities; restaurants and mobile sources including automobile/equipment repair, washing, or detailing; power washing services; mobile carpet, drape, or upholstery cleaning services; swimming pool, water softener, and spa services; portable sanitary services; and commercial applicators and distributors of pesticides, herbicides and fertilizers, if present.

**d. Inspect Critical Sources**

**i. Commercial Facilities**

- (1) Mandatory Compliance Inspections:

Each Permittee shall inspect all commercial facilities identified in Parts [TBD, TBD, TBD] twice during the 5-year term of the Order, provided that the first mandatory compliance inspection occurs no later than 2 years after Order adoption date. A minimum interval of 6 months between the first and the second mandatory compliance inspection is required. In addition, each Permittee shall implement the activities outlined in the following subparts. At each facility, inspectors shall verify that the operator is implementing the source control BMPs listed in Tables [TBD] and [TBD] for the corresponding facility type as specified in Parts [TBD], [TBD], and [TBD]. Each Permittee shall require implementation of additional BMPs where stormwater from the MS4 discharges to an environmentally sensitive area (ESA, see Part [TBD] for definition), a waterbody subject to TMDL provisions in Part 7, or a CWA § 303(d) listed waterbody (see Part [TBD] below).

- (a) Restaurants

(i) Scope of Inspection

Each Permittee shall inspect all restaurants within its jurisdiction to confirm that stormwater BMPs are being effectively implemented in compliance with state law, and county and municipal ordinances. The BMPs listed in Table [TBD] shall be implemented, unless the pollutant generating activity does not occur:

**Table [TBD] - BMPs at Restaurants**

<b>Pollutant-Generating Activity</b>	<b>BMP Narrative Description</b>	<b>California Stormwater BMP Handbook Industrial and Commercial BMP Identification #</b>
Waste/ Hazardous Materials Storage, Handling and Disposal	Implementation of effective storage, handling and disposal procedures for hazardous materials	NA
Unauthorized Non-Stormwater Discharges	Effective elimination of non-stormwater discharges	SC-10
Accidental Spills/ Leaks	Implementation of effective spills/ leaks prevention and response procedures	SC-11
Outdoor Storage of Raw Materials	Implementation of effective source control practices and structural devices	SC-33
Storage and Handling of Solid Waste	Implementation of effective solid waste storage/ handling practices and appropriate control measures	SC-34
Parking/ Storage Area Maintenance	Implementation of effective parking/ storage area designs and housekeeping/ maintenance practices	SC-43
Stormwater Conveyance System Maintenance	Implementation of proper conveyance system operation and maintenance protocols	SC-44
<b>Pollutant-Generating Activity</b>	<b>BMP Narrative Description from Regional Water Board Resolution No. 98-08</b>	
Sidewalk Washing	1. Remove trash, debris, and free standing oil/grease spills/leaks (use absorbent material, if necessary) from the area before washing; and 2. Use high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of	

	sidewalk area.
Street Washing	Collect and divert wash water to the sanitary sewer – publically owned treatment works (POTW). Note: POTW approval may be needed.

(b) Automotive Service Facilities

(i) Scope of Inspection

Each Permittee shall inspect all automotive service facilities within its jurisdiction to confirm that stormwater BMPs are being effectively implemented in compliance with state law, and county and municipal ordinances. The BMPs listed in Table [TBD] shall be implemented, unless the pollutant generating activity does not occur:

**Table [TBD] - BMPs at Automotive Service Facilities**

<b>Pollutant-Generating Activity</b>	<b>BMP Narrative Description</b>	<b>California Stormwater BMP Handbook Industrial and Commercial BMP Identification #</b>
Unauthorized Non-Stormwater Discharges	Effective elimination of non-stormwater discharges	SC-10
Accidental Spills/ Leaks	Implementation of effective spills/ leaks prevention and response procedures	SC-11
Vehicle/ Equipment Fueling	Implementation of effective fueling source control devices and practices	SC-20
Vehicle/ Equipment Cleaning	Implementation of effective equipment/ vehicle cleaning practices and appropriate wash water management practices	SC-21
Vehicle/ Equipment Repair	Implementation of effective vehicle/ equipment repair practices and source control devices	SC-22
Outdoor Liquid Storage	Implementation of effective outdoor liquid storage source controls and practices	SC-31
Outdoor Storage of Raw Materials	Implementation of effective source control practices and structural devices	SC-33

Storage and Handling of Solid Waste	Implementation of effective solid waste storage/ handling practices and appropriate control measures	SC-34
Parking/ Storage Area Maintenance	Implementation of effective parking/ storage area designs and housekeeping/ maintenance practices	SC-43
Stormwater Conveyance System Maintenance Practices	Implementation of proper conveyance system operation and maintenance protocols	SC-44
<b>Pollutant-Generating Activity</b>	<b>BMP Narrative Description from Regional Water Board Resolution No. 98-08</b>	
Sidewalk Washing	1. Remove trash, debris, and free standing oil/grease spills/leaks (use absorbent material, if necessary) from the area before washing; and 2. Use high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area.	
Street Washing	Collect and divert wash water to the sanitary sewer – publically owned treatment works (POTW). Note: POTW approval may be needed.	

(c) Retail Gasoline Outlets

(i) Scope of Inspection

Each Permittee shall inspect all RGOs within its jurisdiction to confirm that stormwater BMPs are being effectively implemented in compliance with state law, and county and municipal ordinances. The BMPs listed in Table [TBD] shall be implemented, unless the pollutant generating activity does not occur:

**Table [TBD] - BMPs at Retail Gasoline Outlets**

<b>Pollutant-Generating Activity</b>	<b>BMP Narrative Description</b>	<b>California Stormwater BMP Handbook Industrial and Commercial BMP Identification #</b>
Unauthorized Non-Stormwater Discharges	Effective elimination of non-stormwater discharges	SC-10
Accidental Spills/ Leaks	Implementation of effective spills/ leaks prevention and response procedures	SC-11
Vehicle/ Equipment Fueling	Implementation of effective fueling source control devices and practices	SC-20

Vehicle/ Equipment Cleaning	Implementation of effective wash water control devices	SC-21
Outdoor Storage of Raw Materials	Implementation of effective source control practices and structural devices	SC-33
Storage and Handling of Solid Waste	Implementation of effective solid waste storage/ handling practices and appropriate control measures	SC-34
Building and Grounds Maintenance	Implementation of effective facility maintenance practices	SC-41
Parking/ Storage Area Maintenance	Implementation of effective parking/ storage area designs and housekeeping/ maintenance practices	SC-43
<b>Pollutant-Generating Activity</b>	<b>BMP Narrative Description from Regional Water Board Resolution No. 98-08</b>	
Sidewalk Washing	1. Remove trash, debris, and free standing oil/grease spills/leaks (use absorbent material, if necessary) from the area before washing; and 2. Use high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area.	
Street Washing	Collect and divert wash water to the sanitary sewer – publically owned treatment works (POTW). Note: POTW approval may be needed.	

(d) Commercial Nurseries and Nursery Centers (Merchant Wholesalers, Nondurable Goods, and Retail Trade)

(i) Scope of Inspection

Each Permittee shall inspect all commercial nurseries and nursery centers within its jurisdiction to confirm that stormwater BMPs are being effectively implemented in compliance with state law, and county and municipal ordinances. The BMPs listed in Table [TBD] shall be implemented, unless the pollutant generating activity does not occur.

**Table [TBD] - BMPs at Nurseries**

<b>Pollutant-Generating Activity</b>	<b>BMP Narrative Description</b>	<b>California Stormwater BMP Handbook Industrial and Commercial BMP Identification #</b>
Unauthorized Non-Stormwater Discharges	Effective elimination of non-stormwater 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

**ii. Industrial Facilities**

Each Permittee shall conduct compliance inspections as specified below or as approved in a Permittee's individual or watershed based Reasonable Assurance Program (RAP) per Part 7.

(1) Frequency of Inspections

(a) Mandatory Compliance Inspections

Each Permittee shall perform an initial mandatory compliance inspection at all industrial facilities identified in Parts [TBD] no later than 2 years after Order adoption date. After the initial inspection, all facilities determined as having exposure of industrial activities to stormwater are subject to a second mandatory compliance inspection. A minimum interval of 6 months between the first and the second mandatory compliance inspection is required. A facility need not be inspected more than twice during the term of the Order unless subject to an enforcement action as specified in Part [TBD] below.

(b) No Exposure Verification

Following the first mandatory compliance inspection, each Permittee shall also perform a second mandatory

compliance inspection yearly at a minimum of 20% of the facilities determined not to have exposure of industrial activities to stormwater at the time of the first mandatory compliance inspection. The purpose of this inspection is to verify the continuity of the no exposure status. Facilities determined as having exposure will be notified that they must obtain coverage under the Industrial General Permit. A minimum interval of 6 months between the first and the second mandatory compliance inspection is required.

(c) Applicable to All Facilities

Each Permittee need not inspect facilities that have been inspected by the Regional Water Board within the previous 24 month interval. However, if the Regional Water Board performed only one inspection, the Permittee shall conduct the second required mandatory compliance inspection.

(2) Scope of Inspection

(a) Each Permittee shall confirm that each operator:

- (i) Has a current Waste Discharge Identification (WDID) number for facilities discharging stormwater associated with industrial activity, and that a Stormwater Pollution Prevention Plan (SWPPP) is available on-site; or
- (ii) Has applied and has a current No Exposure Certification (and WDID number) for facilities subject to this requirement;
- (iii) Is effectively implementing BMPs in compliance with state law, and county and municipal ordinances. Facilities must implement the source control BMPs identified in the *California Stormwater BMP Handbook, Industrial and Commercial*, unless the pollutant generating activity does not occur. The Permittees shall require implementation of additional BMPs where stormwater from the MS4 discharges to an environmentally sensitive area (ESA, see Part [TBD] for definition), a waterbody subject to TMDL Provisions in Part 7, or a CWA § 303(d) listed waterbody (see Part [TBD] below).

**e. Ensure Compliance of Critical Sources**

**i. BMP Implementation**

Facilities must implement the source control BMPs identified in the *California Stormwater BMP Handbook, Industrial and Commercial*, unless the pollutant generating activity does not occur. In the event that a Permittee determines that a BMP is infeasible at any site, the

Permittee shall require implementation of similar BMPs that will achieve the equivalent reduction of pollutants in the stormwater discharges. Likewise, for those BMPs that are not adequately protective of water quality standards, a Permittee may require additional site-specific controls.

**ii. Environmentally Sensitive Areas (ESAs)**

For critical sources that discharge to MS4s that discharge to ESAs, each Permittee shall require operators to implement additional pollutant-specific controls to reduce pollutants in stormwater runoff that are causing or contributing to exceedances of water quality objectives.

**iii. Progressive Enforcement**

Each Permittee shall develop and implement a Progressive Enforcement Policy to ensure that facilities are brought into compliance with all stormwater requirements within a reasonable time period as specified below.

**(1) Follow-up inspections**

In the event that a Permittee determines, based on an inspection conducted, that an operator has failed to adequately implement all necessary BMPs, that Permittee shall take progressive enforcement actions which, at a minimum, shall include a follow-up inspection within 2 weeks from the date of the initial inspection.

**(2) Enforcement action**

In the event that a Permittee determines that an operator has failed to adequately implement BMPs after a follow-up inspection, that Permittee shall take enforcement action as established through authority in its municipal code and ordinances or through the judicial system.

**(3) Each 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.**

**f. Interagency Coordination**

**i. Referral of Violations of Municipal Ordinances and California Water Code § 13260**

A Permittee may refer a violation(s) of its municipal stormwater ordinances and California Water Code § 13260 by Industrial and Commercial facilities to the Regional Water Board provided that the Permittee has made a good faith effort of progressive enforcement to

achieve compliance with its own ordinances. At a minimum, a Permittee's good faith effort must be documented with:

- (1) Two follow-up inspections
- (2) Two warning letters or notices of violation

**ii. 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 municipal stormwater ordinances and subject to the Industrial General Permit, Permittees may escalate referral of such violations to the Regional Water Board (promptly via telephone or electronically) after one inspection and one written notice of violation (copied to the Regional Water Board) to the operator regarding the violation. In making such referrals, 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 applicable)
- (5) Industrial activity being conducted at the facility that is subject to the Industrial General Permit
- (6) Records of communication with the facility operator regarding the violation, which shall include at least one inspection report
- (7) The written notice of violation copied to the Regional Water Board

**iii. Investigation of Complaints Transmitted by the Regional Water Board Staff**

Each Permittee shall initiate, within one business day,<sup>3</sup> investigation of complaints (other than non-stormwater discharges to the MS4) from facilities within its jurisdiction. The initial investigation shall include, at a minimum, a limited inspection of the facility to confirm validity of the complaint and to determine if the facility is in compliance with municipal stormwater ordinances and, if necessary, to oversee corrective action.

**iv. Assistance with Regional Water Board Enforcement Actions**

As directed by the Regional Water Board Executive Officer, Permittees shall assist Regional Water Board enforcement actions by:

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<sup>3</sup> Permittees may comply with the Permit by taking initial steps (such as logging, prioritizing, and tasking) to "initiate" the investigation within that one business day. However, the Regional Water Board would expect that the initial investigation, including a site visit, to occur within four business days.

- (1) Assisting in identification of current owners, operators, and lessees of properties and sites.
  - (2) Providing staff, when available, for joint inspections with Regional Water Board inspectors.
  - (3) Appearing to testify as witnesses in Regional Water Board enforcement hearings.
  - (4) Providing copies of inspection reports and other progressive enforcement documentation.
- v. Participation in a Task Force

The Permittees may participate with the Regional Water Board, and other public agencies on an enforcement task force to communicate concerns regarding special cases of stormwater violations by industrial and commercial facilities, and to develop a coordinated approach to enforcement action.

## **8. Planning and Land Development Program**

### **a. Purpose**

- i. Each Permittee shall implement a Planning and Land Development Program pursuant to Part [TBD] for all New Development and Redevelopment projects subject to this Order to:
  - (1) Lessen the water quality impacts of development by using smart growth practices such as compact development, directing development towards existing communities via infill or redevelopment, and safeguarding of environmentally sensitive areas.
  - (2) Minimize the adverse impacts from stormwater runoff on the biological integrity of Natural Drainage Systems and the beneficial uses of waterbodies in accordance with requirements under CEQA (Cal. Pub. Resources Code § 21100).
  - (3) Minimize the percentage of impervious surfaces on land developments by minimizing soil compaction during construction, designing projects to minimize the impervious area footprint, and employing Low Impact Development (LID) design principles to mimic predevelopment water balance through infiltration, evapotranspiration and rainfall harvest and use.
  - (4) Maintain existing riparian buffers and enhance riparian buffers when possible.
  - (5) 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 good housekeeping practices), LID Strategies, and Treatment Control BMPs.

- (6) Properly select, design and maintain LID and Hydromodification Control BMPs to address pollutants that are likely to be generated, reduce changes to pre-development hydrology, assure long-term function, and avoid the breeding of vectors<sup>4</sup>.
- (7) Prioritize the selection of BMPs to remove stormwater pollutants, reduce stormwater runoff volume, and beneficially use stormwater to support an integrated approach to protecting water quality and managing water resources in the following order of preference:
  - (a) Infiltration, bioretention and/or rainfall harvest and use.
  - (b) Biofiltration.

## **b. Applicability**

### **i. New Development Projects**

- (1) Development projects subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate stormwater pollution, prior to completion of the project(s), are:
  - (a) All development projects equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious surface area
  - (b) Industrial parks 10,000 square feet or more of surface area
  - (c) Commercial strip malls 10,000 square feet or more surface area
  - (d) Retail gasoline outlets 5,000 square feet or more of surface area
  - (e) Restaurants (SIC 5812) 5,000 square feet or more of surface area
  - (f) Parking lots 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces
  - (g) Streets, roads, highways, and freeway construction of 10,000 square feet or more of impervious surface area shall follow USEPA guidance regarding Managing Wet Weather with Green Infrastructure: Green Streets<sup>5</sup> to the maximum extent practicable

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<sup>4</sup> Treatment BMPs when designed to drain within 72 hours of the end of rainfall minimize the potential for the breeding of vectors.

<sup>5</sup> <http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm>

- (h) Automotive service facilities (SIC 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) 5,000 square feet or more of surface area
- (i) Redevelopment projects in subject categories that meet Redevelopment thresholds identified in Part [TBD] (Redevelopment Projects) below
- (j) Projects located in or directly adjacent to, or discharging directly to an Environmentally Sensitive Area (ESA), where the development will:
  - (i) Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and
  - (ii) Create 2,500 square feet or more of impervious surface area
- (k) Single-family hillside homes. To the extent that a Permittee may lawfully impose conditions, mitigation measures or other requirements on the development or construction of a single-family home in a hillside area as defined in the applicable Permittee's Code and Ordinances, each Permittee shall require that during the construction of a single-family hillside home, the following measures are implemented:
  - (i) Conserve natural areas
  - (ii) Protect slopes and channels
  - (iii) Provide storm drain system stenciling and signage
  - (iv) Divert roof runoff to vegetated areas before discharge unless the diversion would result in slope instability
  - (v) Direct surface flow to vegetated areas before discharge unless the diversion would result in slope instability.

**ii. Redevelopment Projects**

- (1) Redevelopment projects subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate stormwater pollution, prior to completion of the project(s), are:
  - (a) Land-disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site on development categories identified in Part [TBD] (New Development/Redevelopment Performance Criteria).
  - (b) Where Redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject

to post-construction stormwater quality control requirements, the entire project must be mitigated.

- (c) Where Redevelopment results in an alteration of less than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction stormwater quality control requirements, only the alteration must be mitigated, and not the entire development.
  - (i) Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of facility or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and roadways which does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Redevelopment does not include the repaving of existing roads to maintain original line and grade.
  - (ii) Existing single-family dwelling and accessory structures are exempt from the Redevelopment requirements unless such projects create, add, or replace 10,000 square feet of impervious surface area.
- iii. Existing Development or Redevelopment projects shall mean projects that have been constructed or for which grading or land disturbance permits have been submitted and are deemed complete prior to the adoption date of this Order, except as otherwise specified in this Order.
- iv. Specifically, the Newhall Ranch Project Phases I and II (a.k.a. the Landmark and Mission Village projects) are deemed to be an existing development that will at a minimum, be designed to comply with the Specific LID Performance Standards attached to the Waste Discharge Requirements (Order No. X). All subsequent phases of the Newhall Ranch Project constructed during the term of this Order shall be subject to the requirements of this Order.

**c. New Development/ Redevelopment Project Performance Criteria**

- i. Integrated Water Quality/ Flow Reduction/Resources Management Criteria
  - (1) Each Permittee shall require all New Development and Redevelopment projects (referred to hereinafter as “new projects”) identified in Part [TBD] to control pollutants, pollutant

- loads, and runoff volume emanating from the project site by: (1) minimizing the impervious surface area and (2) controlling runoff from impervious surfaces through infiltration, bioretention and/or rainfall harvest and use.
- (2) Except as provided in Part [TBD] (Technical Infeasibility or Opportunity for Regional Groundwater Replenishment), Part [TBD] (Local Ordinance Equivalence), or Part [TBD] (Hydromodification), below, each Permittee shall require the project to retain on-site the Stormwater Quality Design Volume (SWQDv) defined as the runoff from:
    - (a) The 0.75-inch, 24-hour rain event or
    - (b) The 85<sup>th</sup> percentile, 24-hour rain event, as determined from the Los Angeles County 85<sup>th</sup> percentile precipitation isohyetal map, **whichever is greater.**
  - (3) When calculating the capacity of an infiltration system, each Permittee shall account for the 24-hour infiltration assuming that the soil is saturated. Infiltration BMPs shall be limited to project sites where the *in-situ* soil or the amended on-site soils have a demonstrated infiltration rate under saturated conditions of no less than 0.15 inch per hour.
  - (4) Bioretention BMPs shall be designed to accommodate the minimum design flow at a surface loading rate of 5 inches per hour and no greater than 12 inches per hour, and shall have a total volume, including pore spaces and pre-filter detention volume of no less than the SWQDv. Bioretention systems shall meet the design specifications provided in Attachment X to this Order unless otherwise approved by the Regional Water Board Executive Officer.
  - (5) If rainwater harvested for use in irrigation is to be credited toward the total volume of stormwater runoff retained on-site, each Permittee shall require the project proponent to conduct a conservative (assuming reasonable worst-case scenarios) assessment of water demand during the wet-weather season. This volume will be referred to as the “reliable” estimate of irrigation demand. The portion of water to be credited as retained on-site for use in irrigation shall not exceed the reliable estimate of irrigation demand.
  - (6) Harvested rainwater must be stored in a manner that precludes the breeding of mosquitoes or other vectors or with a draw down not to exceed 72 hours.
  - (7) When evaluating the potential for on-site retention, each Permittee shall consider the maximum potential for

evapotranspiration from green roofs and rainfall harvest and use.

- (8) Project requirements shall address at a minimum the use of harvested rainwater for non-potable uses including toilet flushing, laundry, and cooling water makeup water. If the municipal or county plumbing code does not specifically address requirements for harvested rainwater, each Permittee shall develop a model ordinance and submit it to the city council or County Supervisors for consideration within 24 months after the Order effective date. The model ordinances shall be based on the International Association of Plumbing and Mechanical Officials' (IAPMO's) Green Plumbing and Mechanical Code Supplement to the 2012 National Standard Plumbing Code, or similar guidance to ensure the safe and effective use of harvested rainwater, separate from the existing provisions, if any, for reclaimed wastewater.

ii. Alternative Compliance for Technical Infeasibility or Opportunity for Regional Groundwater Replenishment

- (1) In instances of technical infeasibility or where a project has been determined to provide an opportunity to replenish regional groundwater supplies at an offsite location, each Permittee may allow projects to comply with this Order through the alternative compliance measures process depicted in Table [TBD] and as described in Part [TBD] below.

**Table [TBD]. New Development and Redevelopment Projects – Options for Stormwater Management Design (listed in order of preference)**

<b>Most Preferred Stormwater Management Options:</b>		
<p>On-site retention of the SWQDv. New Development and Re-development Projects to be designed to minimize the impervious area footprint and to retain stormwater runoff using Low Impact Development designs which may include infiltration, bioretention, and/or rainfall harvest and use.</p> <p>Note: Biofiltration does not provide 100 % retention of the design volume and is not credited under this preferred option.</p>	<p>OR</p>	<p>Offsite regional groundwater replenishment if the following conditions apply:</p> <ul style="list-style-type: none"> <li>• The volume of stormwater runoff used to replenish groundwater must be equal to or greater than the SWQDv.</li> <li>• Must demonstrate that equal benefits to groundwater recharge could not be met on the project site.</li> <li>• Must provide equal or greater benefits to surface water quality in the same</li> </ul>

		<p>subwatershed as the proposed project.</p> <p>Note: Must also provide pollutant reduction through treatment of the SWQDv at the project site.</p>
<p style="text-align: center;"><b>Medium Preferred Options:</b></p> <p>If it is technically infeasible to retain 100 percent of the SWQDv by one of the preferred options described above, then offsite mitigation may be provided via one of the following Alternative Compliance Measures in conjunction with pollutant reduction through treatment of the SWQDv at the project site.</p>		
<p>Offsite infiltration or bioretention. The following conditions apply:</p> <ul style="list-style-type: none"> <li>• The volume of stormwater runoff retained at the mitigation site must be equal to or greater than the Mv.</li> <li>• Must provide equal or greater benefits to surface water quality in the same subwatershed as the proposed project.</li> </ul>	<p>Offsite groundwater replenishment. The following conditions apply:</p> <ul style="list-style-type: none"> <li>• The volume of stormwater runoff used to replenish groundwater must be equal to or greater than the Mv.</li> <li>• Must demonstrate that equal benefits to groundwater recharge could not be met on the project site.</li> <li>• Must provide equal or greater benefits to surface water quality in the same subwatershed as the proposed project.</li> </ul>	<p>Retrofit an existing developed site to increase the volume of stormwater runoff addressed on-site. The following conditions apply:</p> <ul style="list-style-type: none"> <li>• The increase in the volume of stormwater runoff addressed as a result of the retrofitting of the existing developed site must be equal to or greater than the Mv.</li> <li>• Must provide equal or greater benefits to surface water quality in the same subwatershed as the proposed project.</li> </ul> <p>Note: Biofiltration allowed under retrofit provisions.</p>
<p style="text-align: center;"><b>Least Preferred Option:</b></p> <p>If it is infeasible to retain 100 percent of the SWQDv using a combination of the above described options, then on-site biofiltration systems, sized to treat 1.5 times the remaining design stormwater runoff volume, may be used.</p>		

- (2) To demonstrate technical infeasibility, the project applicant must demonstrate that the project cannot reliably retain 100 percent of the SWQDv on-site, even with the maximum application of green roofs and rainwater harvest and use, and that compliance with the applicable post-construction requirements would be technically infeasible by submitting a site-specific hydrologic and/or design analysis conducted and endorsed by a registered professional engineer, geologist, architect, and/or landscape

architect. Technical infeasibility may result from conditions including the following:

- (a) The infiltration rate of saturated *in-situ* soils is less than 0.15 inch per hour and it is not technically feasible to amend the *in-situ* soils to attain an infiltration rate necessary to achieve reliable performance of infiltration or bioretention BMPs in retaining the SWQDv on-site.
  - (b) Locations where seasonal high groundwater is within 5 to 10 feet of the surface,
  - (c) Locations within 100 feet of a groundwater well used for drinking water,
  - (d) Brownfield development sites or other locations where pollutant mobilization is a documented concern,
  - (e) Locations with potential geotechnical hazards, or
  - (f) Smart growth and infill or redevelopment locations where the density and/ or nature of the project would create significant difficulty for compliance with the on-site volume retention requirement.
- (3) To utilize alternative compliance measures to replenish groundwater at an offsite location, the project applicant shall demonstrate why it is not advantageous to replenish groundwater at the project site, and that the alternative measures shall also provide equal or greater water quality benefits to the receiving surface water than the Water Quality/Flow Reduction/Resource Management Criteria in this Part.

### iii. Alternative Compliance Measures

When a Permittee determines a project applicant has demonstrated technical infeasibility or is proposing an alternative offsite project to replenish regional groundwater supplies, each Permittee shall require one of the following mitigation options:

- (1) Offsite Projects – Infiltration/bioretention or Groundwater Replenishment
  - (a) Use of infiltration or bioretention BMPs to intercept a volume of stormwater runoff equal to the SWQDv, less the volume of stormwater runoff reliably retained on-site, at an approved offsite project, and
  - (b) Provide pollutant reduction (treatment) of the stormwater runoff discharged from the project site in accordance with the Water Quality Mitigation Criteria provided in Part [TBD].

(c) The required offsite mitigation volume shall be equal to:

Equation No [TBD]:

$$Mv = 1.0 * [SWQDv - Rv]$$

Where:

Mv = mitigation volume

SWQDv = runoff from the 0.75 inch, 24-hour storm event or the 85<sup>th</sup> percentile storm, **whichever is greater**

Rv = the volume of stormwater runoff reliably retained on-site

Or

(2) Offsite Project - Retrofit Existing Development

(a) Use infiltration, bioretention, rainfall harvest and use and/or biofiltration BMPs to retrofit an existing development, with similar land uses as the new development or land uses associated with comparable or higher stormwater runoff event mean concentrations (EMCs) than the new development. Comparison of EMCs for different land uses shall be based on published data from studies performed in southern California. The retrofit plan shall be designed and constructed to intercept a volume of stormwater runoff equal to the mitigation volume (Mv) as described above in Equation [TBD], and

(b) Provide pollutant reduction (treatment) of the stormwater runoff from the project site as described in the Water Quality Mitigation Criteria provided in Part [TBD].

(3) Conditions for Offsite Projects

(a) Project applicants seeking to utilize these alternative compliance provisions may propose other offsite projects, which the Permittees may approve if they meet the requirements of this subpart.

(b) Location of offsite projects. Offsite projects shall be located in the same sub-watershed (defined as draining to the same HUC-12 hydrologic area in the Basin Plan) as the new development or redevelopment project. Each Permittee may consider locations outside of the HUC-12 but within the HUC-10 subwatershed area if there are no opportunities within the HUC-12 subwatershed or if greater pollutant reductions and/or groundwater replenishment can be achieved at a location within the expanded HUC-10 subwatershed. The use of a mitigation, groundwater replenishment, or retrofit project outside of the HUC-12 subwatershed is subject to the

approval of the Executive Officer of the Regional Water Board.

- (c) Project applicant must demonstrate that equal benefits to groundwater recharge cannot be met on the project site.
- (d) Each Permittee shall develop a prioritized list of offsite mitigation, groundwater replenishment and/or retrofit projects, and when feasible, the mitigation must be directed to the highest priority project within the same HUC-12 or if approved by the Executive Officer of the Regional Water Board, the HUC-10 drainage area, as the new development project.
- (e) Infiltration/bioretention shall be the preferred LID BMP for offsite mitigation or groundwater replenishment projects. Offsite retrofit projects may include green streets, parking lot retrofits, green roofs, and rainfall harvest and use. Biofiltration BMPs may be considered for retrofit projects when infiltration, bioretention or rainfall harvest and use is technically infeasible.
- (f) Each Permittee shall develop a schedule for the completion of offsite projects, including milestone dates to identify, fund, design, and construct the projects. Offsite projects shall be completed as soon as possible, and at the latest, within 4 years of the certificate of occupancy for the first project that contributed funds toward the construction of the offsite project, unless a longer period is otherwise authorized by the Executive Officer of the Regional Water Board. For public offsite projects, each Permittee must provide in their annual reports a summary of total offsite project funds raised to date and a description (including location, general design concept, volume of water expected to be retained, and total estimated budget) of all pending public offsite projects. Funding sufficient to address the offsite volume must be transferred to the Permittee (for public offsite mitigation projects) or to an escrow account (for private offsite mitigation projects) within one year of the initiation of construction.
- (g) Offsite projects must be approved by the Permittee and may be subject to approval by the Executive Officer of the Regional Water Board, if a third-party petitions the Executive Officer to review the project.
- (h) The project applicant must perform the offsite projects as approved by either the Permittee or the Executive Officer of the Regional Water Board or provide sufficient funding for public or private offsite projects to achieve the equivalent mitigation stormwater volume.

(4) On-site Biofiltration

If offsite mitigation (including groundwater replenishment projects) and retrofit opportunities are not available, then the new project must biofiltrate 1.5 times the portion of the SWQD<sub>v</sub> that is not reliably retained on-site, as calculated by Equation No. [TBD].

Equation No [TBD]:

$$B_v = 1.5 * [SWQD_v - R_v]$$

(a) Where:

B<sub>v</sub> = biofiltration volume

SWQD<sub>v</sub> = the stormwater runoff from a 0.75 inch, 24-hour storm or the 85<sup>th</sup> percentile storm, **whichever is greater.**

R<sub>v</sub> = volume reliably retained on-site

(5) Conditions for On-Site Biofiltration

(a) Biofiltration systems shall meet the design specifications provided in Attachment [TBD] to this Order unless otherwise approved by the Regional Water Board Executive Officer.

(b) Biofiltration BMPs shall be designed to accommodate the minimum design flow at a surface loading rate of 5 inches per hour and no greater than 12 inches per hour, and shall have a total volume, including pore spaces and pre-filter detention volume of no less than the biofiltration volume (B<sub>v</sub>).

(c) Biofiltration systems discharging to a receiving water that is included on the Clean Water Act section 303(d) list of water-quality-limited water bodies due to nitrogen compounds or related effects shall be designed and maintained to achieve enhanced nitrogen removal capability. See Attachment [TBD] for design criteria for underdrain placement to achieve enhanced nitrogen removal.

iv. Water Quality Mitigation Criteria

(1) Each Permittee shall require all New Development and Redevelopment projects that have been approved for offsite mitigation or groundwater replenishment projects as defined in Part [TBD] to also provide treatment of stormwater runoff from the project site. Each Permittee shall require these projects to implement post-construction stormwater BMPs and control measures to reduce pollutant loading as necessary to:

- (a) Meet the pollutant specific benchmarks listed in Table [TBD] at the treatment systems outlet or prior to the discharge to the MS4, or
  - (b) Ensure that the discharge does not cause or contribute to an exceedance of water quality standards at the Permittee's downstream MS4 outfall.
- (2) The benchmarks shall be applied at the outlet from the treatment devices, treatment train or at the project property line and prior to the discharge to the MS4.
- (a) Each Permittee may monitor or shall require the project proponent to monitor the effluent from three qualifying storm events during the first year. If any of the three samples exceed the applicable benchmarks, the Permittee shall require the project proponent to upgrade the treatment system and repeat the monitoring until all three consecutive samples are below the applicable benchmarks, or
  - (b) Each Permittee may determine, based on data from its MS4 outfall monitoring program, that the discharge is not causing an exceedance of water quality standards. In this scenario, the Permittee shall require at a minimum, the project proponent to monitor the treatment system discharge during the first storm during the first two years after project completion and report the data to the Permittee for inclusion in its Annual Report.
  - (c) Each Permittee may allow the project proponent to install flow-through modular treatment systems including sand filters, or other proprietary BMP treatment systems including planter boxes, with a demonstrated efficiency at least equivalent to a sand filter. The sizing of the flow through treatment device shall be based on a rainfall intensity of:
    - (i) 0.2 inches per hour or
    - (ii) The one-year, one-hour rainfall intensity as determined from the most recent Los Angeles County isohyetal map, **whichever is greater.**

**Table [TBD] Benchmarks Applicable to New Development Treatment BMPs**

Parameter	Units	Benchmark Levels
Total Suspended Solids (TSS)	mg/L	100
Trash	Pounds	0

Parameter	Units	Benchmark Levels
E. coli bacteria	counts per 100 mL	235
Total coliform bacteria	counts per 100 mL	10,000
Enterococcus bacteria	counts per 100 mL	104
Pyrethroid Pesticides Permethrin <sup>1,6</sup>	µg/L (freely dissolved)	Non-storm water: 0.002 (chronic) Storm water: 0.01 (acute)
Pyrethroid Pesticides Cypermethrin <sup>2,6</sup>	µg/L (freely dissolved)	Non-storm water: 0.0002 (chronic) Storm water: 0.001 (acute)
Pyrethroid Pesticides Cyfluthrin <sup>3,6</sup>	µg/L (freely dissolved)	Non-storm water: 0.00005 (chronic) Storm water: 0.0003 (acute)
Pyrethroid Pesticides Lambda-cyhalothrin <sup>4,6</sup>	µg/L (freely dissolved)	Non-storm water: 0.0005 (chronic) Storm water: 0.001 (acute)
Pyrethroid Pesticides Bifenthrin <sup>5,6</sup>	µg/L (freely dissolved)	Non-storm water: 0.0006 (chronic) Storm water: 0.004 (acute)
Total nitrate/nitrite nitrogen	mg/L	10
Lead (total recoverable)	mg/L	Hardness Dependent
Zinc (total recoverable)	mg/L	Hardness Dependent
Copper (total recoverable)	mg/L	Hardness Dependent

<sup>1</sup> Fojut, Ph.D, Tessa L., Caitlin Rering and Ronald S. Tjeerdema, Ph.D., University of California, Davis, Department of Environmental Toxicity. 2011. *Water Quality Criteria Report for Permethrin, Phase III: Application of the pesticide water quality criteria methodology*. Prepared for the Central Valley Water Quality Control Board. September 2011.

<sup>2</sup> Fojut, Ph.D, Tessa L., Rebecca Mulligan and Ronald S. Tjeerdema, Ph.D., University of California, Davis, Department of Environmental Toxicity. 2011. *Water Quality Criteria Report for Cypermethrin, Phase III: Application of the pesticide water quality criteria methodology*. Prepared for the Central Valley Water Quality Control Board. September 2011.

<sup>3</sup> Fojut, Ph.D, Tessa L., Sandra Chang and Ronald S. Tjeerdema, Ph.D., University of California, Davis, Department of Environmental Toxicity. 2010. *Water Quality Criteria Report for Cyfluthrin, Phase III: Application of the pesticide water quality criteria methodology*. Prepared for the Central Valley Water Quality Control Board. March 2010.

<sup>4</sup> Fojut, Ph.D, Tessa L. and Ronald S. Tjeerdema, Ph.D., University of California, Davis, Department of Environmental Toxicity. 2010. *Water Quality Criteria Report for LambdaCyhalothrin, Phase III: Application of the pesticide water quality criteria methodology*. Prepared for the Central Valley Water Quality Control Board. March 2010.

<sup>5</sup> Palumbo, Ph.D., Amanda, J., Tessa L. Fojut, Ph.D., Susanne M. Brander and Ronald S. Tjeerdema, Ph.D., University of California, Davis, Department of Environmental Toxicity. 2010.

*Water Quality Criteria Report for Bifenthrin, Phase III: Application of the pesticide water quality criteria methodology.* Prepared for the Central Valley Water Quality Control Board. March 2010.

6. References cited in Footnotes 1-5 above, were accessed on March 1, 2012  
 <[http://www.waterboards.ca.gov/centralvalley/water\\_issues/tmdl/central\\_valley\\_projects/central\\_valley\\_pesticides/criteria\\_method/](http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/central_valley_pesticides/criteria_method/)>

**Table [TBD]. Hardness Dependent Benchmarks Applicable to New Development Treatment BMPs**

Hardness (mg/L)	Lead (mg/L)	Copper (mg/L)	Zinc (mg/L)
0-25	0.014	0.0038	0.04
25-50	0.023	0.0056	0.05
50-75	0.045	0.0090	0.08
75-100	0.069	0.0123	0.11
100-125	0.095	0.0156	0.13
125-150	0.122	0.0189	0.16
150-175	0.151	0.0221	0.18
175-200	0.182	0.0253	0.20
200-225	0.213	0.0285	0.23
225-250	0.246	0.0316	0.25
250+	0.262	0.0332	0.26

- (3) In addition to the requirements for controlling pollutant discharges as described in Part [TBD] and the treatment requirements described above, each Permittee shall ensure that the new development or redevelopment will not cause or contribute to an exceedance of applicable Water Quality Based Effluent Limitations established in Part [TBD] pursuant to Total Maximum Daily Loads (TMDLs).

**v. Hydromodification (Flow/ Volume/ Duration) Control Criteria**

- (1) Each Permittee shall require all New Development and Redevelopment projects identified in Part [TBD] to implement hydrologic control measures, to prevent accelerated downstream erosion and to protect stream habitat in natural drainage systems. The purpose of the hydrologic controls is to minimize changes in post-development hydrologic stormwater runoff discharge rates, velocities, and duration. This shall be achieved by maintaining the project's pre-project stormwater runoff flow rates and durations.

**(a) Description**

- (i) Hydromodification control in natural drainage systems shall be achieved by maintaining the Erosion Potential ( $E_p$ ) in streams at a value of 1, unless an alternative

value can be shown to be protective of the natural drainage systems from erosion, incision, and sedimentation that can occur as a result of flow increases from impervious surfaces and prevent damage to stream habitat in natural drainage system tributaries. (see Attachment [TBD] - Determination of Erosion Potential).

- (ii) Hydromodification control may include one, or a combination of on-site, regional or sub-regional hydromodification control BMPs, LID strategies, or stream and riparian buffer restoration measures. Any in-stream restoration measure shall not adversely affect the beneficial uses of the natural drainage systems.
  - (i) Natural drainage systems that are subject to the hydromodification assessments and controls as described in this Part of the Order, include all drainages that have not been improved (e.g., channelized or armored with concrete, shotcrete, or rip-rap) or drainage systems that are tributary to a natural drainage system, except as provided in Part [TBD-- Exemptions to Hydromodification Controls, see below]. The clearing or dredging of a natural drainage system does not constitute an "improvement."
  - (iii) Until the State Water Resources Control Board or the Regional Water Board adopts a final Hydromodification Policy or criteria, Permittees shall implement the Interim Hydromodification Control Criteria, described in Part [TBD] to control the potential adverse impacts of changes in hydrology that may result from new development and redevelopment projects identified in Part [TBD].
- (b) Exemptions to Hydromodification Controls. Permittees may exempt the following New Development and Redevelopment projects from implementation of hydromodification controls where assessments of downstream channel conditions and proposed discharge hydrology indicate that adverse hydromodification effects to present and future beneficial uses of Natural Drainage Systems are unlikely:
- (ii) Projects that are replacement, maintenance or repair of a Permittee's existing flood control facility, storm drain, or transportation network.
  - (iii) Redevelopment Projects in the Urban Core that do not increase the effective impervious area or decrease the

- infiltration capacity of pervious areas compared to the pre-project conditions.
- (iv) Projects that have any increased discharge directly or via a storm drain to a sump, lake, area under tidal influence, into a waterway that has a 100-year peak flow (Q100) of 25,000 cfs or more, or other receiving water that is not susceptible to hydromodification impacts.
  - (v) Projects that discharge directly or via a storm drain into concrete or otherwise engineered (not natural) channels (e.g., channelized or armored with rip rap, shotcrete, etc.), which, in turn, discharge into receiving water that is not susceptible to hydromodification impacts (as in Part [TBD] above).
- (c) Interim Hydromodification Control Criteria. The Interim Hydromodification Control Criteria to protect natural drainage systems until the State or Regional Water Board adopts a final Hydromodification Policy or criteria are as follows:
- (i) Except as provided for in Part [TBD], projects disturbing an area greater than 1 acre but less than 50 acres within natural drainage systems will be presumed to meet pre-development hydrology if one of the following demonstrations is made:
    1. The project is designed to retain on-site, through infiltration, evapotranspiration, and/or harvest and use, the stormwater volume from the runoff of the 95<sup>th</sup> percentile storm, or
    2. The runoff flow rate, volume, velocity, and duration for the post-development condition do not exceed the pre-development condition for the 2-year, 24-hour rainfall event. This condition may be substantiated by simple screening models, including those described in *Hydromodification Effects on Flow Peaks and Durations in Southern California Urbanizing Watersheds* (Hawley et al., 2011) or other models acceptable to the Executive Officer of the Regional Water Board, or
    3. The Erosion Potential (Ep) in the receiving water channel will approximate 1, as determined by a Hydromodification Analysis Study and the equation presented in Attachment [TBD].

- (ii) Projects disturbing 50 acres or more within natural drainage systems will be presumed to meet pre-development hydrology based on the successful demonstration of one of the following conditions:
  1. The site infiltrates on-site at least the runoff from a 2-year, 24-hour storm event, or
  2. The runoff flow rate, volume, velocity, and duration for the post-development condition does not exceed the pre-development condition for the 2-year, 24-hour rainfall events. These conditions must be substantiated by hydrologic modeling acceptable to the Executive Officer of the Regional Water Board, or
  3. The Erosion Potential ( $E_p$ ) in the receiving water channel will approximate 1, as determined by a Hydromodification Analysis Study and the equation presented in Attachment [TBD].

(d) Final Criteria

- (i) Each Permittee shall develop and implement watershed specific HCPs no later than (TBD) after the State Water Board issues final a Hydromodification Policy or criteria.
- (ii) The HCP shall identify:
  1. Stream classifications
  2. Flow rate and duration control methods
  3. Sub-watershed mitigation strategies
  4. Stream and/or riparian buffer restoration measures, which will maintain the stream and tributary Erosion Potential at 1 unless an alternative value can be shown to be protective of the natural drainage systems from erosion, incision, and sedimentation that can occur as a result of flow increases from impervious surfaces and prevent damage to stream habitat in natural drainage system tributaries.
- (iii) The HCP shall contain the following elements:
  1. Hydromodification Management Standards
  2. Natural Drainage Areas and Hydromodification Management Control Areas
  3. New Development and Redevelopment Projects subject to the HCP

4. Description of authorized Hydromodification Management Control BMPs
5. Hydromodification Management Control BMP Design Criteria
6. For flow duration control methods, the range of flows to control for, and goodness of fit criteria
7. Allowable low critical flow,  $Q_c$ , which initiates sediment transport
8. Description of the approved Hydromodification Model
9. Any alternate Hydromodification Management Model and Design
10. Stream Restoration Measures Design Criteria
11. Monitoring and Effectiveness Assessment
12. Record Keeping
13. The HCP shall be deemed in effect upon Executive Officer approval.

**vi. Watershed Equivalence.**

Regardless of the methods through which Permittees allow project applicants to implement alternative compliance measures, the subwatershed-wide (defined as draining to the same HUC-12 hydrologic area in the Basin Plan) result of all development must be at least the same level of water quality protection as would have been achieved if all projects utilizing these alternative compliance provisions had complied with Part [TBD] (Integrated Water Quality/Flow Reduction/Resource Management Criteria).

**vii. Annual Report**

Each Permittee shall provide in their annual report to the Regional Water Board a list of mitigation project descriptions and pollutant and flow reduction analyses (compiled from design specifications submitted by project applicants and approved by the Permittee(s)) comparing the expected aggregate results of alternative compliance projects to the results that would otherwise have been achieved by retaining on site the SWQDv.

**d. Implementation**

**i. Local Ordinance Equivalence**

A local LID ordinance that does not fully incorporate the applicable requirements of this Order, shall be submitted to the Executive Officer of the Regional Water Board for approval, within X months after the Order effective date. The Executive Officer shall assess whether the Permittee has provided reasonable assurance that the alternative requirements in the local ordinance will provide equal or greater reduction in storm water discharge pollutant loading and volume as would have been obtained through strict conformance with Part [TBD] (Integrated Water Quality/Flow Reduction Resources Management Criteria) or Part [TBD] (Alternative Compliance Measures for Technical Infeasibility or Opportunity for Regional Groundwater Replenishment) of this Order and, if applicable, Part [TBD] (Hydromodification (Flow/Volume Duration) Control Criteria). Local ordinances that do not strictly conform to the provisions of this Order must be approved by the Executive Officer of the Regional Water Board as being "equivalent" in effect to the applicable provisions of this Order.

**ii. Project Coordination**

- (1) Each Permittee shall facilitate a process for effective approval of post-construction stormwater control measures. The process shall include:
  - (a) Detailed LID site design and BMP review including BMP sizing calculations, BMP pollutant removal performance, and municipal approval; and
  - (b) An established structure for communication and delineated authority between and among municipal departments that have jurisdiction over project review, plan approval, and project construction through memoranda of understanding (MOU) or an equivalent agreement.

**iii. Maintenance Agreement and Transfer**

- (1) Prior to issuing approval for final occupancy, each Permittee shall require that all new development and redevelopment projects subject to post-construction BMP requirements provide an operation and maintenance plan and verification of ongoing maintenance provisions for LID practices, Treatment Control BMPs, and Hydromodification Control BMPs including but not limited to: final map conditions, legal agreements, covenants, conditions or restrictions, CEQA mitigation requirements, conditional use permits, and/ or other legally binding maintenance agreements.

- (a) Verification at a minimum shall include the developer's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and either:
  - (i) A signed statement from the public entity assuming responsibility for BMP maintenance; or
  - (ii) Written conditions in the sales or lease agreement, which require the property owner or tenant to assume responsibility for BMP maintenance and conduct a maintenance inspection at least once a year; or
  - (iii) Written text in project covenants, conditions, and restrictions (CCRs) for residential properties assigning BMP maintenance responsibilities to the Home Owners Association (HOA); or
  - (iv) Any other legally enforceable agreement or mechanism that assigns responsibility for the maintenance of BMPs.
- (2) Each Permittee shall require all development projects subject to post-construction BMP requirements to provide a plan for the operation and maintenance of all structural and treatment controls. The plan shall be submitted for examination of relevance to keeping the BMPs in proper working order. Where BMPs are transferred to Permittee for ownership and maintenance, the plan shall also include all relevant costs for upkeep of BMPs in the transfer. Operation and Maintenance plans for private BMPs shall be kept on-site for periodic review by Permittee inspectors.

**iv. Tracking, Inspection, and Enforcement of Post-Construction BMPs**

- (1) Each Permittee shall implement a tracking system and an inspection and enforcement program for new development and redevelopment post-construction stormwater BMPs as set forth in Part [TBD] no later than X year after Order adoption date.
  - (a) Implement a GIS or other electronic system for tracking projects that have been conditioned for post-construction BMPs. The electronic system, at a minimum, should contain the following information:
    - (i) Municipal Project ID
    - (ii) State WDID No
    - (iii) Project Acreage
    - (iv) BMP Type and Description
    - (v) BMP Location (coordinates)

- (vi) Date of Acceptance
  - (vii) Date of Maintenance Agreement
  - (viii) Maintenance Records
  - (ix) Inspection Date and Summary
  - (x) Corrective Action
  - (xi) Date Certificate of Occupancy Issued
  - (xii) Replacement or Repair Date
- (b) Inspect all development sites upon completion of construction and prior to the issuance of occupancy certificates to ensure proper installation of LID measures, structural BMPs, treatment control BMPs and hydromodification control BMPs. The inspection may be combined with other inspections provided it is conducted by trained personnel.
- (c) Verify proper maintenance and operation of post-construction BMPs previously approved for new development and redevelopment and operated by the Permittee. The post-construction BMP maintenance inspection program shall incorporate the following elements:
- (i) Post-construction BMP Maintenance Inspection checklist
  - (ii) Inspection at least once every 2 years after project completion, of post-construction BMPs to assess operation conditions with particular attention to criteria and procedures for post-construction treatment control and hydromodification control BMP repair, replacement, or re-vegetation.
- (d) For post-construction BMPs operated and maintained by parties other than the Permittee, the Permittee shall require annual reports by the other parties demonstrating proper maintenance and operations.
- (e) Undertake enforcement action per progressive enforcement procedures (Part TBD) as appropriate based on the results of the inspection.

## **9. Development Construction Program**

- a. Each Permittee shall develop, implement, and enforce a construction program that:
  - i. Prevents illicit construction-related discharges of pollutants into the MS4 and receiving waters.



- (5) Current construction phase.
- (6) The required inspection frequency.
- (7) The project start date and anticipated completion date.
- (8) Whether the project has coverage under the Construction General Permit.
- (9) The date the Permittee approved the erosion and sediment control plan.
- (10) Post-Construction Structural BMPs subject to Operation and Maintenance Requirements.

**f. Construction Plan Review and Approval Procedures**

- i. Each Permittee shall develop procedures to review and approve relevant construction plan documents.
- ii. The review procedures shall be developed and implemented such that the following minimum requirements are met:
  - (1) Prior to issuing a grading or building permit, each Permittee shall require each operator of a construction activity within its jurisdiction to prepare and submit an Erosion and Sediment Control Plan (ESCP) prior to the disturbance of land for the Permittee's review and written approval. The construction site operator shall be prohibited from commencing construction activity prior to receipt of written approval by the Permittee. Each Permittee shall not approve any erosion and sediment control plan unless it contains appropriate site-specific construction site BMPs that meet the minimum requirements of a Permittee's erosion and sediment control ordinance.
  - (2) ESCPs must include the elements of a Stormwater Pollution Prevention Plan (SWPPP). SWPPPs prepared in accordance with the requirements of the Construction General Permit can be accepted as ESCPs for construction sites larger than 1 acre.
  - (3) At a minimum, the ESCP/SWPPP must address the following elements:
    - (a) Methods to minimize the footprint of the disturbed area and to prevent soil compaction outside of the disturbed area
    - (b) Methods used to protect native vegetation and trees
    - (c) Sediment/Erosion Control
    - (d) Controls to prevent tracking on and off the site
    - (e) Non-stormwater controls (e.g., vehicle washing, dewatering, etc.)
    - (f) Materials Management (delivery and storage)

- (g) Spill Prevention and Control
  - (h) Waste Management (e.g., concrete washout/waste management; sanitary waste management)
  - (i) Rain Event Action Plan (REAP) when soil disturbance activities will be conducted during the wet-weather season.
- (4) The ESCP/SWPPP must include the rationale for the selection and design of the proposed BMPs, including quantifying the expected soil loss from different BMPs.
  - (5) Each Permittee shall require that for projects disturbing 1 acre or more, the ESCP/SWPPP is developed and certified by a *Qualified SWPPP Developer (QSD)*.
  - (6) Each Permittee shall require that all structural BMPs be designed by a California licensed engineer.
  - (7) Each Permittee shall require that for all projects, the landowner or the landowner's agent sign a statement on the Local ESCP/SWPPP to the effect:
    - (a) *"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/ or inaccurate information, failing to update the Local SWPPP to reflect current conditions, or failing to properly and/ or adequately implement the ESCP/ SWPPP may result in revocation of grading and/ or other permits or other sanctions provided by law."*
  - (8) Prior to issuing a grading or building permit, each Permittee must verify that the construction site operators have existing coverage under applicable permits, including, but not limited to the Construction General Permit, State Water Board 401 Water Quality Certification, U.S. Army Corp 404 permit, and California Department of Fish and Game 1600 Agreement.
  - (9) Each Permittee shall develop and implement a checklist to be used to conduct and document review of each ESCP/SWPPP.

**g. BMP Implementation Level**

- i. BMPs must be consistent with the applicable California Stormwater Quality Association (CASQA) Best Management Practices

Handbooks (or the Caltrans Handbook for public transportation related construction projects) tailored to the risks posed by the project. Projects are ranked from Low Risk (Risk 1) to High Risk (Risk 3). Project risks are calculated based on the potential for erosion from the site and the sensitivity of the receiving waterbody. Receiving waterbodies that are listed on the Clean Water Act (CWA) Section 303(d) list for sediment or siltation are considered high risk. Likewise, waterbodies with designated beneficial uses of SPWN, COLD, and MIGR are also considered to be high risk. The combined (sediment/receiving water) site risk may be calculated using the methods provided in Attachment 1 of the Construction General Permit.

- ii. Applicable BMP controls for projects of different sizes are referenced in Tables [TBD] of this Order. Applicable BMPs for enhanced requirements for high-risk sites are referenced in Table [TBD] of this Order. Applicable BMPs for paving projects are described in Tables [TBD] of this Order.
- iii. For construction sites less than one acre, each Permittee shall require the implementation of an effective combination of erosion and sediment control BMPs from Table [TBD] to prevent erosion and sediment loss, and the discharge of construction wastes.
- iv. The applicable BMPs listed in Tables [TBD – TBD] refer to the January 2003 version of the California Stormwater BMP Handbook, Industrial and Commercial. Permittees are authorized to substitute the listed BMPs with the equivalent BMP contained in the most current version of the California Stormwater BMP Handbook, Industrial and Commercial, throughout the term of this Order.

**Table [TBD]. Minimum Set of BMPs for All Construction Sites**

<b>Minimum Set of BMPs for All Construction Sites</b>	<b>CASQA Handbook</b>	<b>Caltrans Handbook<sup>1</sup></b>
<b>Erosion Controls</b>		
Scheduling	EC-1	SS-1
Preservation of Existing Vegetation	EC-2	SS-2
<b>Sediment Controls</b>		
Silt Fence	SE-1	SC-1
Sand Bag Barrier	SE-8	SC-8
Stabilized Construction Site Entrance/Exit	TC-1	TC-1
<b>Non-Stormwater Management</b>		
Water Conservation Practices	NS-1	NS-1
Dewatering Operations	NS-2	NS-2
<b>Waste Management</b>		
Material Delivery and Storage	WM-1	WM-1
Stockpile Management	WM-3	WM-2
Spill Prevention and Control	WM-4	WM-4

<b>Minimum Set of BMPs for All Construction Sites</b>	<b>CASQA Handbook</b>	<b>Caltrans Handbook<sup>1</sup></b>
<b>Erosion Controls</b>		
Solid Waste Management	WM-5	WM-5
Concrete Waste Management	WM-8	WM-8
Sanitary/Septic Waste Management	WM-9	WM-9

<sup>1</sup> Applies to public roadway projects.

**Table [TBD]. Additional BMPs Applicable to Construction Sites Disturbing 1 Acre or More but Less Than 5 Acres**

<b>BMPs</b>	<b>CASQA Handbook</b>	<b>Caltrans Handbook<sup>1</sup></b>
<b>Erosion Controls</b>		
Hydraulic Mulch	EC-3	SS-3
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
<b>Sediment Controls</b>		
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
<b>Additional Controls</b>		
Wind Erosion Controls	WE-1	WE-1
Stabilized Construction Entrance/ Exit	TC-1	TC-1
Stabilized Construction Roadway	TC-2	TC-2
Entrance/ Exit Tire Wash	TC-3	TC-3
<b>Non-Stormwater Management</b>		
Vehicle and Equipment Washing	NS-8	NS-8
Vehicle and Equipment Fueling	NS-9	NS-9

<sup>1</sup> Applies to public roadway projects.

**Table [TBD]. Additional BMPs Applicable to Construction Sites Disturbing 5 Acres or More**

<b>BMPs</b>	<b>CASQA Handbook</b>	<b>Caltrans Handbook<sup>1</sup></b>
<b>Sediment Controls</b>		
Scheduling	EC-1	SS-1
Check Dam	SE-4	SC-4
<b>Tracking Control BMPs</b>		
Stabilized Construction Entrance/ Exit	TR-1	TC-1
<b>Non-Stormwater Management</b>		

<b>BMPs</b>	<b>CASQA Handbook</b>	<b>Caltrans Handbook<sup>1</sup></b>
Vehicle and Equipment Maintenance	NS-10	NS-10
<b>Waste Management</b>		
Material Delivery and Storage	WM-1	WM-1
Spill Prevention and Control	WM-4	WM-4

<sup>1</sup> Applies to public roadway projects.

**Table [TBD]. Additional Enhanced BMPs for High Risk Projects**

<b>BMPs</b>	<b>CASQA Handbook</b>	<b>Caltrans Handbook<sup>1</sup></b>
<b>Erosion Controls</b>		
Hydraulic Mulch	EC-3	SS-3
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
Slope Drains	EC-11	SS-11
<b>Sediment Controls</b>		
Silt Fence	SE-1	SC-1
Fiber Rolls	SE-5	SC-5
Sediment Basin	SE-2	SC-2
Check Dam	SE-4	SC-4
Gravel Bag Berm	SE-6	SC-6
Street Sweeping and/or Vacuum	SE-7	SC-7
Sand Bag Barrier	SE-8	SC-8
Storm Drain Inlet Protection	SE-10	SC-10
<b>Additional Controls</b>		
Wind Erosion Controls	WE-1	WE-1
Stabilized Construction Entrance/Exit	TC-1	TC-1
Stabilized Construction Roadway	TC-2	TC-2
Entrance/Exit Tire Wash	TC-3	TC-3
Advanced Treatment Systems <sup>1</sup>		
<b>Non-Stormwater Management</b>		
Water Conservation Practices	NS-1	NS-1
Dewatering Operations (Groundwater dewatering only under NPDES Permit No. CAG994004)	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
<b>Waste Management</b>		
Material Delivery and Storage	WM-1	WM-1
Stockpile Management	WM-3	WM-2

BMPs	CASQA Handbook	Caltrans Handbook <sup>1</sup>
Spill Prevention and Control	WM-4	WM-4
Solid Waste Management	WM-5	WM-5

<sup>1</sup> Applies to public roadway projects.

**Table [TBD] Minimum Required BMPs for Roadway Paving or Repair Operation  
 (For Private or Public Projects)**

1.	Restrict paving and repaving activity to exclude periods of rainfall or predicted rainfall unless required by emergency conditions.
2.	Install gravel bags and filter fabric or other equivalent inlet protection 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 stormwater drainage system or receiving waters.
4.	Minimize non stormwater 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 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, and do not overload trucks.
10.	Minimize airborne dust by using water spray or other approved dust suppressant during grinding.
11.	Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near stormwater drainage system or receiving waters.
12.	Protect stockpiles with a cover or sediment barriers during a rain.

**h. Construction Site Inspection and Enforcement**

- i. Each Permittee shall use its legal authority to implement procedures for inspecting public and private construction projects and conducting enforcement if necessary.
- ii. The inspection procedures shall be implemented as follows:
  - (1) Inspect the public and private construction projects as specified in Table [TBD] below:

**Table [TBD]: Inspection Frequencies**

Site	Inspection Frequency Shall Occur
a. All sites one (1) acre or larger that discharge to a tributary listed by the state as an impaired water for sediment or turbidity under the CWA § 303(d)	(1) when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA <sup>6</sup> , (2) within 48 hours of a ½-inch rain event and at (3) least once every two weeks
b. Other sites one (1) acre or more determined to be a significant threat to water quality*	
c. All other construction sites with one (1) acre or more of soil disturbance not meeting the criteria above	At least monthly
d. Construction sites less than one (1) acre in size	As needed based on the evaluation of the factors that are a threat to water quality*
*In evaluating the threat to water quality, the following factors shall be considered: soil erosion potential; site slope; project size and type; sensitivity of receiving waterbodies; proximity to receiving waterbodies; non-stormwater discharges; past record of non-compliance by the operators of the construction site; and any water quality issues relevant to the particular MS4.	

(2) Each Permittee shall inspect all phases of construction as follows:

(a) Prior to Land Disturbance

Prior to allowing an operator to commence land disturbance, each Permittee shall perform an inspection to ensure all necessary erosion and sediment structural and non-structural BMP materials and procedures are available per the erosion and sediment control plan.

(b) Grading and Land Development<sup>7</sup>

During grading and land development activities, conduct inspections in accordance with the frequencies specified in Part [TBD] Table [TBD] of this Order.

(c) Streets and Utilities<sup>8</sup>

<sup>6</sup> www.srh.noaa.gov/forecast

<sup>7</sup> Activities include cuts and fills, rough and finished grading; alluvium removals; canyon cleanouts; rock undercuts; keyway excavations; and stockpiling of select material for capping operations.

<sup>8</sup> Activities include excavation and street paving, lot grading, curbs, gutters and sidewalks, public utilities, public water facilities including fire hydrants, public sanitary sewer systems, storm sewer system and/or other drainage improvement.

During street and utilities activities, conduct inspections in accordance with the frequencies specified in Table [TBD] of this Order.

(d) Vertical Construction<sup>9</sup>

During vertical construction activities, conduct inspections in accordance with the frequencies specified in Table [TBD] of this Order.

(e) Final Landscaping and Site Stabilization<sup>10</sup>

At the conclusion of the project, each Permittee shall inspect 10% of all projects to ensure that all graded areas have reached final stabilization and that all trash, debris, and construction materials, and temporary erosion and sediment BMPs are removed.

(3) Each Permittee shall develop and implement a Progressive Enforcement Policy to ensure that facilities are brought into compliance with all stormwater requirements within a reasonable time period as specified below.

(a) Follow-up inspections

In the event that a Permittee determines, based on an inspection conducted, that an operator has failed to adequately implement all necessary BMPs, that Permittee shall take progressive enforcement actions which, at a minimum, shall include a follow-up inspection within 2 weeks from the date of the initial inspection.

(b) Enforcement action

In the event that a Permittee determines that an operator has failed to adequately implement BMPs after a follow-up inspection, that Permittee shall take enforcement action as established through authority in its municipal code and ordinances or through the judicial system.

(c) Each 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) Certificate of Occupancy

Prior to approving and/ or signing off for occupancy and issuing the Certificate of Occupancy for all construction projects subject to post-construction controls, each Permittee shall inspect the

<sup>9</sup> The build out of structures from foundations to roofing, including rough landscaping.

<sup>10</sup> All soil disturbing activities at each individual parcel within the site have been completed.

constructed site design, source control and treatment control BMPs to verify that they have been constructed in compliance with all specifications, plans, permits, ordinances, and this Order.

(5) Inspection and Enforcement Standard Operating Procedures

Each Permittee shall develop, implement, and revise as necessary, standard operating procedures that identify the inspection and enforcement procedures each Permittee will follow. Inspections of construction sites, and the standard operating procedures, shall include, but are not limited to:

- (a) Verification of active coverage under the Construction General Permit for projects disturbing 1 acre or more, or that are part of a planned development that will disturb 1 acre or more.
- (b) Review of the applicable ESCP/SWPPP and inspection of the construction site to determine whether all BMPs have been selected, installed, implemented, and maintained according to the approved plan.
- (c) Assessment of compliance with each Permittee's legal authority related to stormwater runoff, including the implementation and maintenance of minimum BMPs designated in each Permittee's legal authority.
- (d) Assessment of the appropriateness of the planned BMPs and their effectiveness.
- (e) Visual observation and record keeping of non-stormwater discharges, potential illicit connections, and potential discharge of pollutants in stormwater runoff.
- (f) Development of a written or electronic inspection report generated from an inspection checklist used in the field.
- (g) Tracking of the number of inspections for the inventoried construction sites throughout the reporting period to verify that the sites are inspected at the minimum frequencies required in Table [TBD] of this Order.

**i. Permittee Staff Training**

- i. Each Permittee shall ensure that all staff whose primary job duties are related to implementing the construction stormwater program is adequately trained.
- ii. Each Permittee may conduct in-house training or contract with consultants. Training shall be provided to the following staff positions of the MS4:

(1) Plan Reviewers and Permitting Staff

Ensure staff and consultants are trained as qualified individuals, knowledgeable in the technical review of local erosion and sediment control plans and the key objectives of the State Water Board Qualified SWPPP Developer (QSD) program. Permittees may provide internal training to staff or require staff to obtain QSD certification.

(2) Erosion Sediment Control/Stormwater Inspectors

Each Permittee shall ensure that its inspectors are knowledgeable in inspection procedures consistent with the State Water Board sponsored program QSD or a Qualified SWPPP Practitioner (QSP) or that a designated person on staff who has been trained in the key objectives of the QSD/QSP programs supervises inspection operations. Each Permittee may provide internal training to staff or require staff to obtain QSD/QSP certification.

(3) Third-Party Plan Reviewers, Permitting Staff, and Inspectors

If the Permittee utilizes outside parties to conduct inspections and/or review plans, each Permittee shall ensure these staff are trained per the requirements listed above.

**j. Education Outreach to Development Community**

i. Each Permittee shall develop and distribute educational materials to construction site operators.

ii. Each Permittee shall do the following:

(1) Each year, provide information on training opportunities for construction operators on BMP selection, installation, implementation, and maintenance as well as overall program compliance.

(2) Develop or utilize existing outreach tools (i.e. brochures, posters, etc.) aimed at educating construction operators on appropriate selection, installation, implementation, and maintenance of stormwater BMPs, as well as overall program compliance.

(3) Distribute appropriate outreach materials to all construction operators who will be disturbing land within the MS4 boundary. Each Permittee's contact information and website shall be included in these materials.

(4) Update the existing website to include information on appropriate selection, installation, implementation, and maintenance of BMPs, as well as overall program compliance.

## **10. Public Agency Activities Program**

- a. Each Permittee shall implement a Public Agency Activities Program to minimize stormwater pollution impacts from Permittee-owned or operated facilities and activities and to identify opportunities to reduce stormwater pollution impacts from areas of existing development. Requirements for Public Agency Facilities and Activities consist of the following components:

- i. Public Construction Activities Management
- ii. Public Facility Inventory
- iii. Inventory of Existing Development for Retrofitting Opportunities
- iv. Public Facility and Activity Management
- v. Vehicle and Equipment Wash Areas
- vi. Landscape, Park, and Recreational Facilities Management
- vii. Storm Drain Operation and Maintenance
- viii. Streets, Roads, and Parking Facilities Maintenance
- ix. Emergency Procedures
- x. Municipal Employee and Contractor Training

### **b. Public Construction Activities Management**

- i. Each Permittee shall implement and comply with the Planning and Land Development Program requirements in Part [TBD] of this Order at Permittee-owned or operated (i.e., public or Permittee sponsored) construction projects that are categorized under the project types identified in Part [TBD] of this Order.
- ii. Each Permittee shall implement and comply with the appropriate Development Construction Program requirements in Part [TBD] of this Order at Permittee-owned or operated construction projects as applicable.
- iii. For Permittee-owned or operated projects (including those under a capital improvement project plan) that disturb less than one acre of soil, each Permittee shall require the development and implementation of an ESCP. The ESCP shall include an effective combination of erosion and sediment control BMPs from Table [TBD] (see Construction Development Program).
- iv. Each Permittee shall obtain separate coverage under the Construction General Permit for all Permittee-owned or operated construction sites that require coverage.

**c. Public Facility Inventory**

- i. Each Permittee shall maintain an updated watershed-based inventory and map of all Permittee-owned or operated (i.e., public) facilities within its jurisdiction that are potential sources of stormwater pollution. The incorporation of facility information into a GIS is recommended. Sources to be tracked include but are not limited to the following:
- (1) Animal control facilities
  - (2) Chemical storage facilities
  - (3) Composting facilities
  - (4) Equipment storage and maintenance facilities (including landscape maintenance-related operations)
  - (5) Fueling or fuel storage facilities (including municipal airports)
  - (6) Hazardous waste disposal facilities
  - (7) Hazardous waste handling and transfer facilities
  - (8) Incinerators
  - (9) Landfills
  - (10) Materials storage yards
  - (11) Pesticide storage facilities
  - (12) Public buildings, including schools, libraries, police stations, fire stations, Permittee (municipal) buildings, restrooms, and similar buildings
  - (13) Public parking lots
  - (14) Public golf courses
  - (15) Public swimming pools
  - (16) Public parks
  - (17) Public works yards
  - (18) Public marinas
  - (19) Recycling facilities
  - (20) Solid waste handling and transfer facilities
  - (21) Vehicle storage and maintenance yards
  - (22) Flood control facilities (e.g., debris basins, sediment placement sites)
  - (23) All other Permittee-owned or operated facilities tributary to a waterbody segment subject to a TMDL, where the facility

generates pollutants for which the waterbody segment is impaired.

(24) All other Permittee-owned or operated facilities or activities that each Permittee determines may contribute a substantial pollutant load to the MS4.

- ii. Each Permittee shall include the following minimum fields of information for each Permittee-owned or operated facility in its watershed-based inventory and map.
  - (1) Name of facility
  - (2) Name of facility manager and contact information
  - (3) Address of facility (physical and mailing)
  - (4) A narrative description of activities performed and principal products used at each facility and status of exposure to stormwater.
  - (5) MS4 outfalls that receive, or potentially receive discharges from the facility, and corresponding receiving water(s).
  - (6) Identification of whether the facility is tributary to a waterbody segment subject to a TMDL, where the facility generates pollutants for which the waterbody segment is impaired.
  - (7) Coverage under the Industrial General Permit or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to stormwater discharges.
- iii. Each Permittee shall update its inventory and map at least annually. The update shall be accomplished through collection of new information obtained through field activities or through other readily available inter and intra-agency informational databases (e.g., property management, land-use approvals, and similar information).

**d. Inventory of Existing Development for Retrofitting Opportunities**

- i. Each Permittee shall develop an inventory of retrofitting opportunities that meets the requirements of this Part. The goals of the existing development retrofitting inventory are to address the impacts of existing development through retrofit projects that reduce the discharges of stormwater pollutants into the MS4 and prevent discharges from the MS4 from causing or contributing to a violation of water quality standards.
- ii. Each Permittee shall identify and inventory existing areas of development (i.e. municipal, industrial, commercial, residential) as candidates for retrofitting. Potential retrofitting candidates shall include but are not limited to:

- (1) Areas of existing development that generate pollutants subject to a TMDL for the receiving water;
  - (2) Areas of existing development tributary to receiving waters that are significantly eroded; and
  - (3) Areas of development tributary to an ASBS or SWQPA.
- iii.** Each Permittee shall evaluate and rank the inventoried areas of existing developments to prioritize retrofitting. Criteria for evaluation may include but are not limited to:
- (1) Feasibility;
  - (2) Cost effectiveness;
  - (3) Pollutant removal effectiveness;
  - (4) Tributary area potentially treated;
  - (5) Maintenance requirements;
  - (6) Landowner cooperation;
  - (7) Neighborhood acceptance;
  - (8) Aesthetic qualities;
  - (9) Efficacy at addressing concern; and
  - (10) Potential improvements to public health and safety.
- iv.** Each Permittee shall consider the results of the evaluation in the following programs:
- (1) The Permittee's reasonable assurance program (RAP): Highly feasible projects expected to benefit water quality should be given a high priority to implement source control and treatment control BMPs in a Permittee's RAP.
  - (2) Off-site mitigation for New and Significant Re-development: Each Permittee shall consider high priority retrofit projects as candidates for off-site mitigation projects per Part [TBD].
  - (3) Where feasible, at the discretion of the Permittee, the existing development retrofitting program may be coordinated with flood control projects and other infrastructure improvement programs per Part [TBD].

- v. Each Permittee shall cooperate with private landowners to encourage site specific retrofitting projects. Each Permittee shall consider the following practices in cooperating with private landowners to retrofit existing development:
  - (1) Demonstration retrofit projects;
  - (2) Retrofits on public land and easements that treat runoff from private developments;
  - (3) Education and outreach;
  - (4) Subsidies for retrofit projects;
  - (5) Requiring retrofit projects as enforcement, mitigation or ordinance compliance;
  - (6) Public and private partnerships;
  - (7) Fees for existing discharges to the MS4 and reduction of fees for retrofit implementation.

**e. Public Agency Facility and Activity Management**

- i. Each Permittee shall obtain separate coverage under the Industrial General Permit for all Permittee-owned or operated facilities where industrial activities are conducted that require coverage under the Industrial General Permit.
- ii. Each Permittee shall implement the following measures for flood management projects:
  - (1) Develop procedures to assess the impacts of flood management projects on the water quality of receiving waterbodies;
  - (2) Evaluate existing structural flood control facilities to determine if retrofitting the facility to provide additional pollutant removal from stormwater is feasible; and
  - (3) For the Los Angeles County Flood Control District, ensure that that maintenance of earth-bottom flood control channels is conducted in accordance with Regional Water Board Order No. R4-2010-0021.
- iii. Each Permittee shall implement and maintain the general and activity specific BMPs listed in Table [TBD] (BMPs for Public Agency Facilities and Activities) when such activities occur at Permittee-owned or operated facilities and field activities (e.g., project sites) including but not limited to the facility types listed in Part [TBD]

above, and at any area that includes the activities described in Table [TBD], or that have the potential to discharge pollutants in stormwater.

- iv. Any contractors hired by the Permittee to conduct Public Agency Activities (e.g., municipal maintenance) shall be contractually required to implement and maintain the general and activity specific BMPs listed in Table [TBD]. Each Permittee shall conduct oversight of contractor activities to ensure these BMPs are implemented and maintained.

**Table [TBD] - BMPs for Public Agency Facilities and Activities  
 (from the Caltrans Stormwater Quality Handbook Maintenance Staff Guide  
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**f. Vehicle and Equipment Washing**

- i. Each Permittee shall implement and maintain the activity specific BMPs listed in Table [TBD] (BMPs for Public Agency Facilities and Activities) for all vehicle and equipment washing; including fire fighting and emergency response vehicles.
- ii. Each Permittee shall prevent discharges of wash waters from vehicle and equipment washing by implementing any of the following measures at existing facilities with vehicle or equipment wash areas:
  - (1) Self-contain, and haul off for disposal; or
  - (2) Equip with a clarifier or an alternative pre-treatment device and plumb to the sanitary sewer in accordance with applicable waste water provider regulations
- iii. Each Permittee shall ensure that any municipal facilities constructed, redeveloped, or replaced shall not discharge wastewater from vehicle and equipment wash areas to the MS4 by plumbing all areas to the sanitary sewer in accordance with applicable waste water provider regulations, or self-containing all waste water/ wash water and hauling to a point of legal disposal.

**g. Landscape, Park, and Recreational Facilities Management**

- i. Each Permittee shall implement and maintain the activity specific BMPs listed in Table [TBD] (BMPs for Public Agency Facilities and Activities) for all public right-of-ways, flood control facilities and open channels, lakes and reservoirs, and landscape, park, and recreational facilities and activities.
- ii. Integrated Pest Management (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. Each Permittee shall implement an IPM program that includes the following:

- (1) Pesticides are used only if monitoring indicates they are needed, and pesticides are applied according to applicable permits and established guidelines.
- (2) Treatments are made with the goal of removing only the target organism.
- (3) Pest controls are selected and applied in a manner that minimizes risks to human health, beneficial non-target organisms, and the environment.
- (4) The use of pesticides, including Organophosphates and Pyrethroids, does not threaten water quality.
- (5) Partner with other agencies and organizations to encourage the use of IPM.
- (6) Adopt and verifiably implement policies, procedures, and/ or ordinances requiring the minimization of pesticide use and encouraging the use of IPM techniques (including beneficial insects) for Public Agency Facilities and Activities.
- (7) Policies, procedures, and ordinances shall include commitments and a schedule to reduce the use of pesticides that cause impairment of surface waters by implementing the following procedures:
  - (a) Prepare and annually update an inventory of pesticides used by all internal departments, divisions, and other operational units.
  - (b) Quantify pesticide use by staff and hired contractors.
  - (c) Demonstrate measurable reductions in pesticide use.

iii. Each Permittee shall implement the following requirements:

- (1) Comply with the provisions and the monitoring requirements for application of aquatic pesticides to surface waters (WQ Order No. 2011-003-DWQ) (**Aquatic Animal Invasive Species Control**), WQ Order No. 2011-0002-DWQ (**Vector Control**), and WQ Order No. 2004-0009-DWQ (**Weed Control**).
- (2) Use a standardized protocol for the routine and non-routine application of pesticides (including pre-emergents), and fertilizers.
- (3) Ensure there is no application of pesticides or fertilizers (1) when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA<sup>11</sup>, (2) within 48 hours

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<sup>11</sup> [www.srh.noaa.gov/forecast](http://www.srh.noaa.gov/forecast)

of a 1/2-inch rain event, or (3) when water is flowing off the area where the application is to occur. This requirement does not apply to the application of aquatic pesticides described in Part [TBD] above.

- (4) Ensure that no banned or unregistered pesticides are stored or applied.
- (5) Ensure that all staff applying pesticides are certified in the appropriate category by the California Department of Pesticide Regulation, or are under the direct supervision of a pesticide applicator certified in the appropriate category.
- (6) Implement procedures to encourage the retention and planting of native vegetation to reduce water, pesticide and fertilizer needs; and
- (7) Store pesticides and fertilizers indoors or under cover on paved surfaces, or use secondary containment.
  - (a) Reduce the use, storage, and handling of hazardous materials to reduce the potential for spills.
  - (b) Regularly inspect storage areas.

#### **h. Storm Drain Operation and Maintenance**

- i.** Each Permittee shall implement and maintain the activity specific BMPs listed in Table [TBD] for storm drain operation and maintenance.
- ii.** Ensure that all material removed from the MS4 does not reenter the system. Solid material shall be dewatered in a contained area and liquid material shall be disposed in accordance with any of the following measures:
  - (1) Self-contain, and haul off for legal disposal; or
  - (2) Equip with a clarifier or an alternative pre-treatment device; and plumb to the sanitary sewer in accordance with applicable waste water provider regulations.
- iii.** Catch Basin Cleaning
  - (1) In areas that are not subject to a trash TMDL, each Permittee shall determine priority areas and shall update its map or list of Catch Basins with their GPS coordinates and priority:

Priority A: Catch basins that are designated as consistently generating the highest volumes of trash and/or debris.

Priority B: Catch basins that are designated as consistently generating moderate volumes of trash and/or debris.

Priority C: Catch basins that are designated as generating low volumes of trash and/or debris.

The map or list shall contain the rationale or data to support priority designations.

- (2) In areas that are not subject to a trash TMDL, each Permittee shall inspect catch basins according to the following schedule:

Priority A: A minimum of 3 times during the wet season (October 1 through April 15) and once during the dry season every year.

Priority B: A minimum of once during the wet season and once during the dry season every year.

Priority C: A minimum of once per year.

Catch basins shall be cleaned as necessary on the basis of inspections. At a minimum, Permittees shall ensure that any catch basin that is determined to be at least 25% full of trash shall be cleaned out. Permittees shall maintain inspection and cleaning records for Regional Water Board review.

- (3) In areas that are subject to a trash TMDL, the subject Permittees shall implement the applicable provisions in Part 7.

**iv. Trash Management at Public Events**

- (1) Each Permittee shall require the following measures for any event in the public right of way or wherever it is foreseeable that substantial quantities of trash and litter may be generated, including events located in areas that are subject to a trash TMDL:
- (a) Proper management of trash and litter generated; and
  - (b) Arrangement for temporary screens to be placed on catch basins; or
  - (c) Provide clean out of catch basins, trash receptacles, and grounds in the event area within 24 hours subsequent to the event.

**v. Trash Receptacles**

- (1) Each Permittee shall ensure trash receptacles, or equivalent trash capturing devices, are covered in areas newly identified as high trash generation areas within its jurisdiction.
- (2) Each Permittee shall ensure that all trash receptacles are cleaned out and maintained as necessary to prevent trash overflow.

**vi. Catch Basin Labels and Open Channel Signage**

- (1) Each Permittee shall label all storm drain inlets that they own with a legible “no dumping” message.
- (2) Each Permittee shall inspect the legibility of the stencil or label nearest each inlet prior to the wet season every year.
- (3) Each Permittee shall record all catch basins with illegible stencils and re-stencil or re-label within 15 days of inspection.
- (4) Each Permittee shall post signs, referencing local code(s) that prohibit littering and illegal dumping, at designated public access points to open channels, creeks, urban lakes, and other relevant waterbodies.

**vii. Additional Trash Management Practices**

- (1) In areas that are not subject to a trash TMDL, each Permittee shall install trash excluders, or equivalent devices, on or in catch basins or outfalls to prevent the discharge of trash to the MS4 or receiving water no later than two years after Order adoption date in areas defined as Priority A and Priority B (Part [TBD]) except at sites where the application of such BMP(s) alone will cause flooding. Lack of maintenance that causes flooding is not an acceptable exception to the requirement to install BMPs. Alternatively each Permittee may implement alternative or enhanced BMPs beyond the provisions of this Order (such as but not limited to increased street sweeping, adding trash cans near trash generation sites, prompt enforcement of trash accumulation, increased trash collection on public property, increased litter prevention messages or trash nets within the MS4) that provide substantially equivalent removal of trash. Each Permittee shall demonstrate that BMPs, which substituted for trash excluders, provide equivalent trash removal performance as excluders. When outfall trash capture is provided, revision of the schedule for inspection and cleanout of catch basins in Part [TBD] may be proposed by the Permittee for approval by the Executive Officer.

**viii. Storm Drain Maintenance**

Each Permittee shall implement a program for Storm Drain Maintenance that includes the following:

- (1) Visual monitoring of Permittee-owned open channels and other drainage structures, including debris basins, for debris at least annually.
- (2) Remove trash and debris from open channels and debris basins a minimum of once per year before the wet season.

- (3) Eliminate the discharge of contaminants during MS4 maintenance and clean outs.
- (4) Quantify the amount of materials removed using techniques appropriate for quantifying solid waste and ensure the materials are properly disposed of.

**ix. Infiltration from Sanitary Sewer to MS4/Preventive Maintenance**

- (1) Each Permittee shall implement controls and measures to prevent and eliminate infiltration of seepage from sanitary sewers to MS4s through thorough, routine preventive maintenance of the MS4.
- (2) Each Permittee that operates both a municipal sanitary sewer system and a MS4 must implement controls and measures to prevent and eliminate infiltration of seepage from the sanitary sewers to the MS4s that must include overall sanitary sewer and MS4 surveys and thorough, routine preventive maintenance of both.
- (3) Each Permittee shall implement controls to limit infiltration of seepage from sanitary sewers to the MS4 where necessary. Such controls must include:
  - i. Adequate plan checking for construction and new development;
  - ii. Incident response training for its municipal employees that identify sanitary sewer spills;
  - iii. Code enforcement inspections;
  - iv. MS4 maintenance and inspections;
  - v. Interagency coordination with sewer agencies; and
  - vi. Proper education of its municipal staff and contractors conducting field operations on the MS4 or its municipal sanitary sewer (if applicable).
- (4) Each Permittee which owns and /or operates a sanitary sewer system that requires coverage under the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-0003-DWQ), shall comply with the provisions and the monitoring requirements associated with this Order.

**x. Permittee Owned Treatment Control BMPs**

- (1) Each Permittee shall implement an inspection and maintenance program for all Permittee owned treatment control BMPs, including post-construction treatment control BMPs.
- (2) Each 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 produced by a treatment control BMP and not being internal to the BMP performance when being maintained shall be:
  - (a) Hauled away and legally disposed of; or
  - (b) Applied to the land without runoff; or
  - (c) Discharged to the sanitary sewer system (with permits or authorization); or
  - (d) Treated or filtered to remove bacteria, sediments, nutrients, and meet the limitations set in Table TBD (Discharge Limitations for Dewatering Treatment BMPs), prior to discharge to the MS4.

**Table TBD - Discharge Limitations for Dewatering Treatment BMPs<sup>12</sup>**

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

**i. Streets, Roads, and Parking Facilities Maintenance**

- i. Each Permittee shall designate streets and/or street segments within its jurisdiction as one of the following:

Priority A: Streets and/or street segments that are designated as consistently generating the highest volumes of trash and/or debris.

Priority B: Streets and/or street segments that are designated as consistently generating moderate volumes of trash and/or debris.

Priority C: Streets and/or street segments that are designated as generating low volumes of trash and/or debris.

- ii. Each Permittee shall perform street sweeping of curbed streets according to the following schedule:

Priority A: Streets and/or street segments that are designated as Priority A shall be swept at least two times per month.

Priority B: Streets and/or street segments that are designated as Priority B shall be swept at least once per month.

<sup>12</sup> Technology based effluent limits.

Priority C: Streets and/or street segments that are designated as Priority C shall be swept as necessary but in no case less than once per year.

**iii. Road Reconstruction**

Each 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<sup>13</sup> 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 into the MS4 or receiving waters.
- (4) Prevent non-stormwater 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 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, and do not overload trucks.
- (10) Minimize airborne dust by using water spray during grinding.
- (11) Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near MS4 or receiving waters.
- (12) Protect stockpiles with a cover or sediment barriers during a rain.

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<sup>13</sup> A probability of precipitation (POP) of 50% is required.

**iv. Parking Facilities Maintenance**

- (1) Permittee-owned parking lots exposed to stormwater shall be kept clear of debris and excessive oil buildup and cleaned using street sweeping equipment no less than 2 times per month and/or inspected no less than 2 times per month to determine if cleaning is necessary. In no case shall a Permittee-owned parking lot be cleaned less than once a month.

**j. Emergency Procedures**

Each Permittee may conduct repairs of essential public service systems and infrastructure in emergency situations with a self-waiver of the provisions of this Order as follows:

- i. The Permittee shall abide by all other regulatory requirements, including notification to other agencies as appropriate.
- ii. Where the self-waiver has been invoked, the 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 30 business days after the situation of emergency has passed.
- iii. Minor repairs of essential public service systems and infrastructure in emergency situations (that can be completed in less than one day) are not subject to the notification provisions. Appropriate BMPs to reduce the threat to water quality shall be implemented.

**k. Municipal Employee and Contractor Training**

- i. Each Permittee shall, no later than X year after Order adoption and annually thereafter before June 30, train all of their employees and contractors in targeted positions (whose interactions, jobs, and activities affect stormwater quality) on the requirements of the overall stormwater management program to:
  - (1) Promote a clear understanding of the potential for activities to pollute stormwater.
  - (2) Identify opportunities to require, implement, and maintain appropriate BMPs in their line of work.
- ii. Each Permittee shall, no later than X year after Order adoption and annually thereafter before June 30, train all of their employees and contractors who use or have the potential to use pesticides or fertilizers (whether or not they normally apply these as part of their work). Training programs shall address:
  - (1) The potential for pesticide-related surface water toxicity.
  - (2) Proper use, handling, and disposal of pesticides.

- (3) Least toxic methods of pest prevention and control, including IPM.
- (4) Reduction of pesticide use.

## **11. Illicit Connection and Illicit Discharge Elimination Program**

### **a. General**

- i. Each Permittee shall continue to implement an Illicit Connection and Illicit Discharge Elimination (IC/ID) Program to detect, investigate, and eliminate IC/IDs to the MS4. The IC/ID Program must be implemented in accordance with the requirements and performance measures specified in this Order.
- ii. As stated in Part [TBD] of this Order, each Permittee must have adequate legal authority to prohibit IC/IDs to the MS4 and enable enforcement capabilities to eliminate the source of IC/IDs.
- iii. Each Permittee's IC/ID Program shall consist of at least the following major program components:
  - (1) An up-to-date municipal separate storm sewer system (MS4) map
  - (2) Procedures for conducting a non-stormwater outfall-based monitoring program to detect IC/IDs
  - (3) Procedures for conducting source investigations for IC/IDs
  - (4) Procedures for eliminating the source of IC/IDs
  - (5) Procedures for public reporting of illicit discharges
  - (6) Spill response plan
  - (7) IC/IDs education and training for Permittee staff

### **b. MS4 Mapping**

- i. Each Permittee shall maintain an up-to-date and accurate electronic MS4 map. If possible, the map should be maintained within a GIS. The MS4 map must show the following, at a minimum:
  - (1) The location of all MS4 outfalls within the Permittee's jurisdictional boundary. The contributing drainage area for each outfall should be clearly discernible. Each MS4 outfall shall be given an alphanumeric identifier, which must be noted on the map. If an outfall is owned by another public entity, the name of the entity shall be recorded on the map. Each mapped MS4 outfall shall be located using a geographic positioning system (GPS) and photographs of the outfall shall be taken to provide baseline information to track operation and maintenance needs over time. Per Part [TBD] (non-stormwater monitoring),

additional attribute data are required for those outfalls determined to have persistent dry weather flows.

- (2) The location and length of all open channels and underground MS4 pipes 18 inches in diameter or greater.
- (3) The location and name of all waterbodies receiving discharges from those MS4 outfalls identified in (1).
- (4) All dry weather diversions installed within the MS4 to direct flows from the MS4 to the sanitary sewer system, including the owner and operator of each diversion.
- (5) Priority areas identified under [Part TBD], below.

- ii. The MS4 map shall be updated annually to reflect current conditions within the MS4.

**c. Implementation of Non-Stormwater Outfall-Based Monitoring Program to Detect IC/IDs**

- i. Each Permittee shall develop and implement a non-stormwater outfall-based monitoring program consistent with Part [TBD] (non-stormwater outfall-based monitoring program) to detect and eliminate illicit connections and illicit discharges to the MS4. The non-stormwater outfall-based monitoring program shall consist of (1) identification of outfalls with persistent dry weather flows, (2) determination of significant dry weather flows through characterization and field screening, (3) identification of sources of significant dry weather flows, (4) monitoring of unknown or authorized non-stormwater discharges, and (5) annual re-assessment and reporting.
- ii. The non-stormwater outfall-based monitoring program shall be documented with written procedures that provide an explanation of how the program is to be implemented and the procedures must be updated as needed to reflect the Permittee's program.
- iii. Observations and data collected during the implementation of the non-stormwater outfall-based monitoring program shall be maintained in a database or electronic format. The use of a GIS to record observations and data is preferred but not required.
- iv. Each Permittee shall conduct an annual re-assessment of its non-stormwater outfall-based monitoring program to determine whether changes or updates are needed. Where changes are needed, the Permittee shall make the changes in its written program documents and implement these changes in practice.

**d. Illicit Discharge Source Investigation and Elimination**

- i. Each Permittee shall develop written procedures for conducting investigations to identify the source of all illicit discharges, including procedures to eliminate the discharge once the source is located.
- ii. At a minimum, each Permittee shall conduct an investigation(s) to identify and locate the source within 48 hours of becoming aware of the illicit discharge.
- iii. When conducting investigations, each Permittee shall comply with the following:
  - (1) Illicit discharges suspected of being sanitary sewage and/or significantly contaminated shall be investigated first.
  - (2) Each Permittee shall track all investigations to document at a minimum the date(s) the illicit discharge was observed; the results of the investigation; any follow-up of the investigation; and the date the investigation was closed.
  - (3) Each Permittee shall investigate the source of all observed illicit discharges.
  - (4) If the source of the illicit discharge is found to be a discharge authorized under an NPDES permit the Permittee shall document the source and report to the Regional Water Board within 30 days of determination. No further action is required.
- iv. When taking corrective action to eliminate illicit discharges, each Permittee shall comply with the following:
  - (1) If the source of the illicit discharge has been determined to originate within the Permittee's jurisdiction, the Permittee shall immediately notify the responsible party of the problem, and require the responsible party to conduct all necessary corrective actions to eliminate the non-stormwater discharge within 48 hours of notification. Upon being notified that the discharge has been eliminated, the Permittee shall conduct a follow-up investigation to verify that the discharge has been eliminated. Each Permittee shall document its follow-up investigation. Each Permittee may seek recovery and remediation costs from responsible parties or require compensation for the cost of field screening, monitoring and investigations. Resulting enforcement actions shall follow the program's Progressive Enforcement Policy.
  - (2) If the source of the illicit discharge has been determined to originate within an upstream jurisdiction, the Permittee shall inform in writing both the upstream jurisdiction and the Regional Water Board within 30 days of such determination and provide all characterization and field screening data collected as a

component of the field survey and efforts taken to identify its source.

- v. In the event the Permittee is unable to eliminate an ongoing illicit discharge following full execution of its legal authority and in accordance with its Progressive Enforcement Policy, or other circumstances prevent the full elimination of an ongoing illicit discharge, the Permittee shall work with the Regional Water Board to provide for diversion of the entire flow to the sanitary sewer or provide treatment. In either instance, the Permittee shall notify the Regional Water Board in writing within 30 days of such determination and shall provide a written plan for review and comment that describes the efforts that have been undertaken to eliminate the illicit discharge, a description of the actions to be undertaken, anticipated costs, and a schedule for completion.

**e. Identification and Response to Illicit Connections**

**i. Investigation**

Each Permittee, upon discovery or upon receiving a report of a suspected illicit connection, shall complete an investigation within 21 days, to determine the following: (1) source of the connection, (2) nature and volume of discharge through the connection, and (3) responsible party for the connection.

**ii. Elimination**

Each Permittee, upon confirmation of an illicit MS4 connection, shall ensure that the connection is eliminated within 90 days of completion of the investigation, using its formal enforcement authority, if necessary, to eliminate the illicit connection.

**iii. Documentation**

Formal records must be maintained for all illicit connection investigations and the formal enforcement taken to eliminate illicit connections.

**f. Public Reporting of Non-Stormwater Discharges and Spills**

- i. Each Permittee shall promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including phone numbers and an internet site for complaints and spill reporting. Each Permittee shall also provide the reporting hotline to Permittee staff to leverage the field staff that has direct contact with the MS4 in detecting and eliminating illicit discharges.
- ii. Each Permittee shall implement the central point of contact and reporting hotline requirements listed in this part in one or more of the following methods:

- (1) By participating in a County sponsored PIPP
  - (2) By participating in one or more Watershed Group sponsored PIPPs
  - (3) Or individually within its own jurisdiction.
- iii. Each Permittee shall include information regarding public reporting of illicit discharges or improper disposal on the signage adjacent to open channels as required in Part [TBD].
- iv. Each Permittee shall develop and maintain written procedures that document how complaint calls are received, documented, and tracked to ensure that all complaints are adequately addressed. The procedures shall be evaluated annually to determine whether changes or updates are needed to ensure that the procedures accurately document the methods employed by the Permittee. Any identified changes shall be made to the procedures subsequent to the annual evaluation.
- v. Each Permittee shall maintain documentation of the complaint calls and record the location of the reported spill or IC/ ID and the actions undertaken in response to all IC/ID complaints.

**g. Illicit Discharge and Spill Response Plan**

- i. Each Permittee shall implement an ID and spill response plan for all sewage and other spills that may discharge into the MS4 from any source (including private laterals and failing on-site wastewater treatment systems). The ID and spill response plan shall clearly identify agencies responsible for ID and spill response and cleanup, telephone numbers and e-mail address for contacts, and shall contain at a minimum the following requirements:
- (1) Coordination with spill response teams throughout all appropriate departments, programs and agencies so that maximum water quality protection is provided.
  - (2) Investigation of all public and employee ID and spill complaints within 24 hours of receiving the complaint to assess validity.
  - (3) Response to ID and spills for containment within 2 hours of becoming aware of the ID or spill, except where such IDs or spills occur on private property, in which case the response should be within 2 hours of gaining legal access to the property.
  - (4) IDs or spills that may endanger health or the environment shall be reported to appropriate public health agencies and the Office of Emergency Services (OES).

## **h. Illicit Connection and Illicit Discharge Education and Training**

- i.** Each Permittee must continue to implement a training program regarding the identification of IC/IDs for all municipal field staff and contractors, who, as part of their normal job responsibilities (e.g., street sweeping, storm drain maintenance, collection system maintenance, road maintenance), may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system. Contact information, including the procedure for reporting an illicit discharge, must be included in the Permittee's fleet vehicles that are used by field staff. Training program documents must be available for review by the permitting authority.
- ii.** Each Permittee's training program should address, at a minimum, the following:
  - (1) IC/ID identification, including definitions and numerous examples,
  - (2) investigation,
  - (3) elimination,
  - (4) cleanup,
  - (5) reporting, and
  - (6) documentation.
- iii.** Each Permittee must create a list of applicable staff which require IC/ID training and ensure that training is provided at least twice during the term of the Order. Each Permittee must maintain documentation of the training activities.
- iv.** New Permittee staff members must be provided with IC/ID training within six months of starting employment.

## ATTACHMENT TBD

### BIORETENTION / BIOFILTRATION DESIGN CRITERIA

**Note:** A significant portion of the information in this appendix has been copied verbatim from the *Ventura County Technical Guidance Manual*, Updated 2011, and modified to reflect recent changes to the bioretention/biofiltration soil media specifications as adopted by the California Regional Water Quality Control Board, San Francisco Region, on November 28, 2011, Order No. R2-2011-083, Attachment L.

#### 1. Geometry

- a. Bioretention/biofiltration areas shall be sized to capture and treat the design with an 18-inch maximum ponding depth. *The intention is that the ponding depth be limited to a depth that will allow for a healthy vegetation layer.*
- b. Minimum planting soil depth should be 2 feet, although 3 feet is preferred. *The intention is that the minimum planting soil depth should provide a beneficial root zone for the chosen plant palette and adequate water storage for the SWQDv.*
- c. A gravel storage layer below the bioretention/biofiltration soil media is required as necessary to provide adequate temporary storage to retain the SWQDv and to promote infiltration.

#### 2. Drainage

- a. Bioretention and biofiltration BMPs should be designed to drain below the planting soil in less than 48 hours and completely drain in less than 96 hours. *The intention is that soils must be allowed to dry out periodically in order to restore hydraulic capacity needed to receive flows from subsequent storms, maintain infiltration rates, maintain adequate soil oxygen levels for healthy soil biota and vegetation, and to provide proper soil conditions for biodegradation and retention of pollutants.*
- b. *Biofiltration BMPs are designed and constructed with an underdrain. The underdrain is preferably placed near the top of the gravel storage area to promote incidental infiltration and enhanced nitrogen removal. However, if in-situ, underlying soils do not provide sufficient drainage, the underdrain may need to be placed lower in the gravel storage area (within 6 inches of the bottom) to prevent the unit from holding stagnant water for extended periods of time. At many sites, clay soils will drain sufficiently fast, particularly if they are not compacted. Observing soil moisture and surface conditions in the days following a wet period may provide sufficient information for making this decision and may be more directly applicable than in situ or laboratory testing of soil characteristics.*

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<sup>1414</sup> Dan Cloak, Dan Cloak Environmental Consulting to Tom Dalziel, Contra Costa County, February 22, 2011.

### 3. Overflow

An overflow device is required at the 18-inch ponding depth. The following, or equivalent, should be provided:

- a. A vertical PVC pipe (SDR 35) to act as an overflow riser.
- b. The overflow riser(s) should be 6 inches or greater in diameter, so it can be cleaned without damage to the pipe.

The inlet to the riser should be at the ponding depth (18 inches for fenced bioretention areas and 6 inches for areas that are not fenced), and be capped with a spider cap to exclude floating mulch and debris. Spider caps should be screwed in or glued, i.e., not removable.

### 4. Hydraulic Restriction Layers

Infiltration pathways may need to be restricted due to the close proximity of roads, foundations, or other infrastructure. A geomembrane liner, or other equivalent water proofing, may be placed along the vertical walls to reduce lateral flows. This liner should have a minimum thickness of 30 mils. Waterproof barriers may not be placed on the bottom of the biofiltration unit, as this would prevent incidental infiltration which is critical to meeting the required pollutant load reduction.

### 5. Planting/Storage Media Specifications

- a. The planting media placed in the cell should achieve a long-term, in-place infiltration rate of at least 5 inches per hour. Higher infiltration rates of up to 12 inches per hour are permissible. Bioretention/biofiltration soil shall retain sufficient moisture to support vigorous plant growth.
- b. Planting media should consist of 60 to 80% fine sand and 20 to 40% compost.
- c. Sand should be free of wood, waste, coating such as clay, stone dust, carbonate, etc. or any other deleterious material. All aggregate passing the No. 200 sieve size should be non-plastic. Sand for bioretention should be analyzed by an accredited lab using #200, #100, #40, #30, #16, #8, #4, and 3/8 sieves (ASTM D 422 or as approved by the local permitting authority) and meet the following gradation (Note: all sands complying with ASTM C33 for fine aggregate comply with the gradation requirements provided in Table TBD-1):

**Table [TBD] – Sand Texture Specifications**

Sieve Size ASTM D422	Percent Passing by Weight	
	Minimum	Maximum
3 /8 inch	100	100
No. 4	90	100

Sieve Size ASTM D422	Percent Passing by Weight	
	Minimum	Maximum
No. 8	70	100
No. 16	40	95
No. 30	15	70
No. 40	5	55
No. 110	0	15
No. 200	0	5

Note: the gradation of the sand component of the media is believed to be a major factor in the hydraulic conductivity of the media mix. If the desired hydraulic conductivity of the media cannot be achieved within the specified proportions of sand and compost (#2), then it may be necessary to utilize sand at the coarser end of the range specified in above (“minimum” column).

d. Compost should be a well decomposed, stable, weed free organic matter source derived from waste materials including yard debris, wood wastes, or other organic materials not including manure or biosolids meeting standards developed by the US Composting Council (USCC). The product shall be certified through the USCC Seal of Testing Assurance (STA) Program (a compost testing and information disclosure program). Compost quality should be verified via a lab analysis to be:

- Feedstock materials shall be specified and include one or more of the following: landscape/yard trimmings, grass clippings, food scraps, and agricultural crop residues.
- Organic matter: 35-75% dry weight basis.
- Carbon and Nitrogen Ratio: 15:1 < C:N < 25:1
- Maturity/Stability: shall have dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or is hot (120 F) upon delivery or rewetting is not acceptable.
- Toxicity: any one of the following measures is sufficient to indicate non-toxicity:
  - $NH_4:NH_3 < 3$
  - Ammonium < 500 ppm, dry weight basis
  - Seed Germination > 80% of control
  - Plant trials > 80% of control
  - Solvita® > 5 index value

- Nutrient content:
  - Total Nitrogen content 0.9% or above preferred
  - Total Boron should be <80 ppm, soluble boron < 2.5 ppm
- Salinity: < 6.0 mmhos/cm
- pH between 6.5 and 8 (may vary with plant palette)
- Compost for bioretention should be analyzed by an accredited lab using #200, ¼ inch, ½ inch, and 1 inch sieves (ASTM D 422) and meet the gradation described in Table No. TBD-2:

**Table [TBD] – Compost Texture Specifications**

Sieve Size ASTM D422	Percent Passing by Weight	
	Minimum	Maximum
1 inch	99	100
½ inch	90	100
¼ inch	40	90
#200	2	10

Tests should be sufficiently recent to represent the actual material that is anticipated to be delivered to the site. If processes or sources used by the supplier have changed significantly since the most recent testing, new tests should be requested.

Note: the gradation of compost used in bioretention/biofiltration media is believed to play an important role in the saturated hydraulic conductivity of the media. To achieve a higher saturated hydraulic conductivity, it may be necessary to utilize compost at the coarser end of this range (“minimum” column). The percent passing the #200 sieve (fines) is believed to be the most important factor in hydraulic conductivity.

In addition, a coarser compost mix provides more heterogeneity of the bioretention media, which is believed to be advantageous for more rapid development of soil structure needed to support health biological processes. This may be an advantage for plant establishment with lower nutrient and water input.

- e. Bioretention/Biofiltration soils not meeting the above criteria shall be evaluated on a case by case basis. Alternative bioretention soil shall meet the following specification: “Soils for bioretention facilities shall be sufficiently permeable to infiltrate runoff at a minimum rate of 5 inches per hour during the life of the facility, and provide sufficient retention of moisture and nutrients to support healthy vegetation.” The following steps shall be followed by the Permittees to verify that alternative soil mixes meet the specification:

- Submittals – The applicant must submit to the Permittee for approval:
  - A sample of mixed bioretention/biofiltration soil.
  - Certification from the soil supplier or an accredited laboratory that the bioretention/biofiltration soil meets the requirements of this specification.
  - Certification from an accredited geotechnical testing laboratory that the bioretention/biofiltration soil has an infiltration rate of between 5 and 12 inches per hour.
  - Organic content test results of mixed bioretention/biofiltration soil. Organic content test shall be performed in accordance with by Testing Methods for the Examination of Compost and Composting (TMECC) 05.07A, “Loss-On-Ignition Organic Matter Method”.
  - Organic Grain size analysis results of mixed bioretention/biofiltration soil performed in accordance with ASTM D 422, Standard Test Method for Particle Size Analysis of Soils.
  - A description of the equipment and methods used to mix the sand and compost to produce the bioretention/biofiltration soil.
- The name of the testing laboratory(s) and the following information:
  - Contact person(s)
  - Address(s)
  - Phone contact(s)
  - email address(s)
  - Qualifications of laboratory(s), and personnel including date of current
  - Certification by STA, ASTM, or approved equal.
- Bioretention/biofiltration soils shall be analyzed by an accredited lab using #200, and 1/2” inch sieves (ASTM D 422 or as approved by municipality), and meet the gradation described in Table TBD-3).

**Table [TBD] – Alternative Bioretention/Biofiltration Soil Texture Specifications**

Sieve Size ASTM D422	Percent Passing by Weight	
	Minimum	Maximum
1/2 inch	97	100
200	2	5

- Bioretention/biofiltration soils shall be analyzed by an accredited geotechnical lab for the following tests:
  - Moisture – density relationships (compaction tests) shall be conducted on bioretention soil. Bioretention/biofiltration soil for the permeability test shall be compacted to 85 to 90 percent of the maximum dry density (ASTM D1557).
  - Constant head permeability testing in accordance with ASTM D2434 shall be conducted on a minimum of two samples with a 6-inch mold and vacuum saturation.

## 6. Mulch for Bioretention/Biofiltration Facilities

Mulch is recommended for the purpose of retaining moisture, preventing erosion and minimizing weed growth. Projects subject to the State's Model Water Efficiency Landscaping Ordinance (or comparable local ordinance) will be required to provide at least two inches of mulch. Aged mulch, also called compost mulch, reduces the ability of weeds to establish, keeps soil moist, and replenishes soil nutrients. Aged mulch can be obtained through soil suppliers or directly from commercial recycling yards. It is recommended to apply 1" to 2" of composted mulch, once a year, preferably in June following weeding

## 7. Plants

- a. Plant materials should be tolerant of summer drought, ponding fluctuations, and saturated soil conditions for 48 to 96 hours.
- b. It is recommended that a minimum of three types of tree, shrubs, and/or herbaceous groundcover species be incorporated to protect against facility failure due to disease and insect infestations of a single species.
- c. Native plant species and/or hardy cultivars that are not invasive and do not require chemical inputs should be used to the maximum extent practicable.

## References

California Regional Water Quality Control Board, San Francisco Bay Region. 2011. Municipal Regional Stormwater Permit (Order No. R2-2011-0083, Attachment L). Adopted November 28, 2011.

Dan Cloak, Dan Cloak Environmental Consulting to Tom Dalziel, Contra Costa County, February 22, 2011.< <http://www.cccleanwater.org/c3-guidebook.html>>. Accessed on January 31, 2012.

Geosyntec Consultants and Larry Walker Associates. 2011. *Ventura County Technical Guidance Manual for Stormwater Quality Control Measures, Manual Update 2011. Appendix D*. Prepared for the Ventura Countywide Stormwater Quality Management Program. July 13, 2011.

## **ATTACHMENT TBD**

### **DEVELOPER TECHNICAL INFORMATION AND GUIDELINES**

1. Each Permittee shall make available to the Development Community reference information and recommended guidelines. Such information may include the following:
  - a. Hydromodification Control criteria described in this Order, including numerical criteria
  - b. Links to the State Water Board's Water Balance Calculator
  - c. Expected BMP pollutant removal performance including effluent quality (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 southern California geography and climate)
  - d. Selection of appropriate BMPs for stormwater pollutants of concern
  - e. Data on observed local effectiveness and performance of implemented BMPs
  - f. BMP maintenance and cost considerations
  - g. Guiding principles to facilitate integrated water resources planning and management in the selection of BMPs, including water conservation, groundwater recharge, public recreation, multipurpose parks, open space preservation, and existing retrofits
  - h. LID principles and specifications, including the objectives and specifications for integration of LID strategies in the areas of:
    - i. Site Assessment
    - ii. Site Planning and Design
    - iii. Vegetative Protection, Revegetation, and Maintenance
    - iv. Techniques to Minimize Land Disturbance
    - v. Techniques to Implement LID Measures at Various Scales
    - vi. Integrated Water Resources Management Practices
    - vii. LID Design and Flow Modeling Guidance
    - viii. Hydrologic Analysis
    - ix. LID Credits for trees or other features that intercept storm water runoff.
  - i. Recommended Guidelines to include:
    - i. Locate structures on less pervious soils where possible so as to preserve areas with permeable soils (Hydrologic Soil Group Classes A and B, as defined by the National Cooperative Soil Survey), for use in stormwater infiltration and groundwater recharge. Minimize the need to grade the site by concentrating development in areas with minimal non-

- engineered slopes and existing infrastructure, and mitigate any construction disturbance.
- ii. The total disturbed area shall be no greater than 110 percent of the final project footprint plus the area of the construction stormwater detention basins, if any, and as required to meet applicable Fire Department regulations for brush clearance.
  - iii. Construction vehicles shall be confined at all times to the area specifically permitted to be disturbed by construction as depicted in the approved construction documents. Physical barriers shall be used to designate and protect the boundary between disturbed and undisturbed areas.
  - iv. Materials staging shall be confined to the area permitted to be disturbed by construction or may be temporarily stored off-site at an approved location at the Contractor's option.
  - v. Construction vehicles shall not traverse areas within the drip lines of those trees and other landscaping to be preserved. Approved visible physical barriers, such as continuous fencing, shall be provided to completely surround all trees and other landscaping to be preserved. Barriers shall be placed not less than 5 feet outside the drip lines of trees.
  - vi. Preserve or restore continuous riparian buffers widths along all natural drainages to a minimum width of 100 feet from each bank top, for a total of 200 feet plus the width of the stream, unless the Watershed Plan demonstrates that a smaller riparian buffer width is protective of water quality, hydrology, and aquatic life beneficial uses within a specific drainage.
  - vii. Identify and avoid development of areas containing habitat with threatened or endangered plant and animal species<sup>15</sup>.
- j.** Each Permittee shall facilitate implementation of LID by providing key industry, regulatory, and other stakeholders with information regarding LID objectives and specifications through a training program. The LID training program will include the following:
- i. LID targeted sessions and materials for builders, design professionals, regulators, resource agencies, and stakeholders
  - ii. A combination of awareness on national efforts and local experience gained through LID pilot projects and demonstration projects
  - iii. Materials and data from LID pilot projects and demonstration projects including case studies
  - iv. Guidance on how to integrate LID requirements at various project scales

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<sup>15</sup> Endangered Species Act, 16 U.S.C. §§ 1531–1544: <http://water.epa.gov/lawsregs/guidance/wetlands/eo11990.cfm>

- v. Guidance on the relationship among LID strategies, Source Control BMPs, Treatment Control BMPs, and Hydromodification Control requirements

Staff Working Proposal