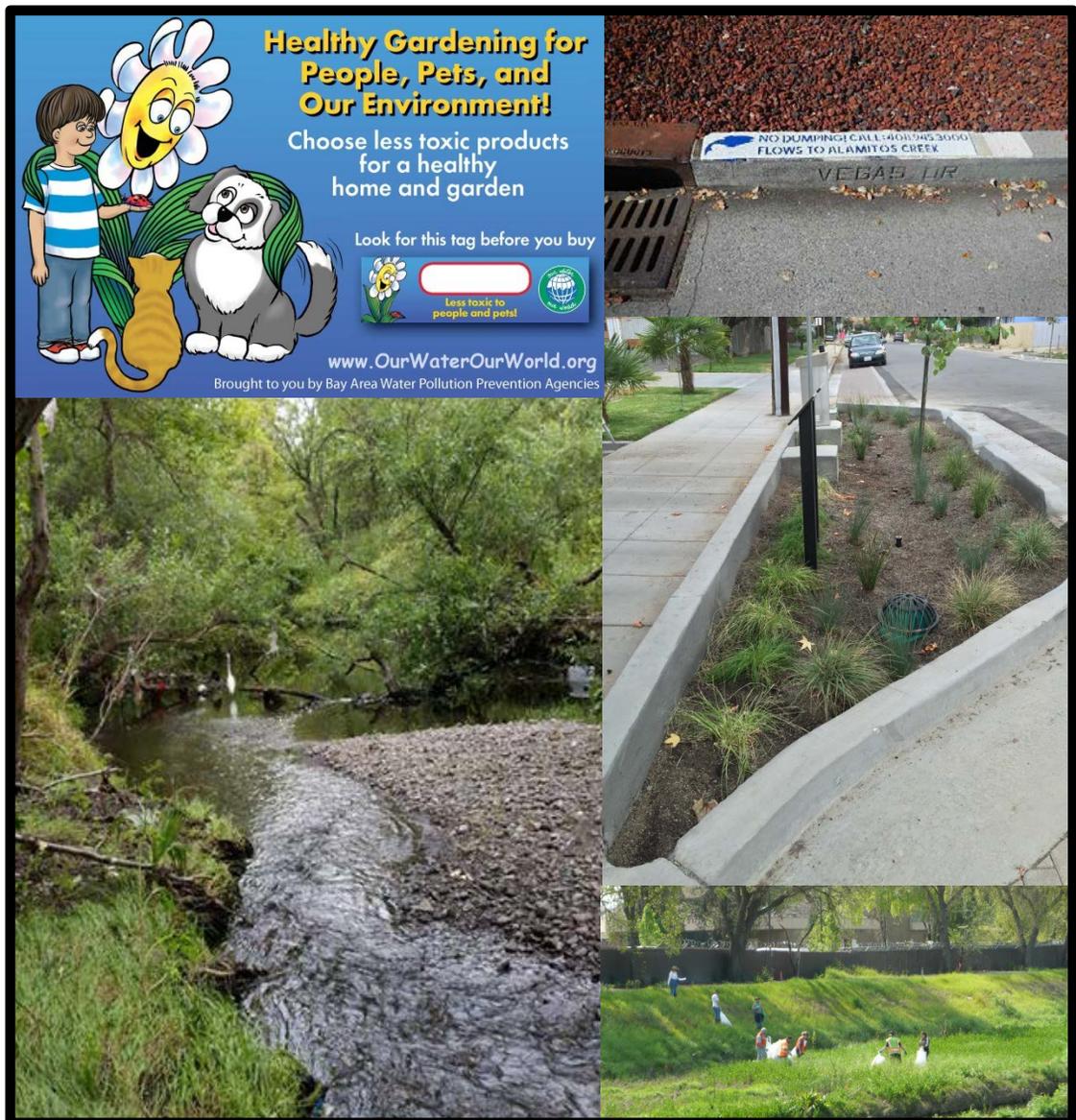


# California Regional Water Quality Control Board San Francisco Bay Region Municipal Regional Stormwater NPDES Permit

Order No. R2-2015-0XXX

NPDES Permit No. CAS612008

~~October 16, 2015~~ November 10, 2015



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**California Regional Water Quality Control Board  
San Francisco Bay Region  
Municipal Regional Stormwater NPDES Permit**

**ORDER No. R2-2015-XXXX  
NPDES PERMIT No. CAS612008**

**Issuing Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for the discharge of stormwater runoff from the municipal separate storm sewer systems (MS4s) of the following jurisdictions and entities, which are permitted under this San Francisco Bay Municipal Regional Stormwater Permit (MRP):**

**The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program (Alameda Permittees)**

**The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program (Contra Costa Permittees)**

**The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (Santa Clara Permittees)**

**The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program (San Mateo Permittees)**

**The cities of Fairfield and Suisun City, which have joined together to form the Fairfield-Suisun Urban Runoff Management Program (Fairfield-Suisun Permittees)**

**The City of Vallejo and the Vallejo Sanitation and Flood Control District (Vallejo Permittees)**

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**The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter referred to as the Water Board) finds that:**

**FINDINGS**

**Incorporation of Fact Sheet**

1. The Fact Sheet for the San Francisco Bay Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Attachment A) includes cited regulatory and legal references and additional explanatory information in support of the requirements of this Permit. The Fact Sheet, including any supplements thereto, is hereby incorporated by reference.

**Existing Permit**

2. **Alameda County**—The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County (Unincorporated area), the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District have joined together to form the Alameda Countywide Clean Water Program (hereinafter collectively referred to as the Alameda Permittees) and have submitted a permit application (Report of Waste Discharge), dated May 30, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Alameda Permittees' jurisdictions. The Alameda Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
3. **Contra Costa County**—The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District have joined together to form the Contra Costa Clean Water Program (hereinafter collectively referred to as the Contra Costa Permittees) and have submitted a permit application (Report of Waste Discharge), dated June 2, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Contra Costa Permittees' jurisdictions. The Contra Costa Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
4. **San Mateo County**—The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District and San Mateo County have joined together to form the San Mateo Countywide Water

Pollution Prevention Program (hereinafter collectively referred to as the San Mateo Permittees) and have submitted a permit application (Report of Waste Discharge), dated May 30, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the San Mateo Permittees' jurisdictions. The San Mateo Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

5. **Santa Clara County**—The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and the County of Santa Clara have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (hereinafter collectively referred to as the Santa Clara Permittees) and have submitted a permit application (Report of Waste Discharge), dated ~~May 29, 2014~~ ~~February 25, 2005~~, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Santa Clara Permittees' jurisdictions. The Santa Clara Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
6. **Fairfield-Suisun**—The cities of Fairfield and Suisun City have joined together to form the Fairfield-Suisun Urban Runoff Management Program (hereinafter referred to as the Fairfield-Suisun Permittees) and have submitted a permit application (Report of Waste Discharge), dated ~~June 2, 2014~~ ~~May 29, 2014~~, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Fairfield-Suisun Permittees' jurisdictions. The Fairfield-Suisun Permittees are currently subject to NPDES Permit No. CAS0612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order ~~No.~~ R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
7. **Vallejo**—The City of Vallejo and the Vallejo Sanitary District (hereinafter referred to as the Vallejo Permittees) have submitted ~~a~~ permit applications (Report of Waste Discharge), dated July 3 and June 2, 2014, respectively, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the ~~Vallejo Fairfield-Suisun~~ Permittees' jurisdictions. The Vallejo Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order ~~No.~~ R2-2009-0074 on October 14, 2009, and amended by Order ~~No.~~ R2-2011-0083, to discharge stormwater runoff from storm drains and watercourses within the their jurisdictions.
8. The Alameda, Contra Costa, San Mateo, Santa Clara, Fairfield-Suisun, and Vallejo Permittees are hereinafter referred to in this Order as the Permittees.

### **Applicable Federal, State and Regional Regulations**

9. Section 402(p) of the federal Clean Water Act (CWA), as amended by the Water Quality Act of 1987, requires NPDES permits for stormwater discharges from municipal separate storm sewer systems (MS4s), stormwater discharges associated with industrial activity (including

construction activities), and designated stormwater discharges, which are considered significant contributors of pollutants to waters of the United States. On November 16, 1990, USEPA published regulations (40 CFR Part 122), which prescribe permit application requirements for MS4s pursuant to CWA 402(p). On May 17, 1996, USEPA published an Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems, which provided guidance on permit application requirements for regulated MS4s.

10. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law, and ~~the~~ USEPA, where required.
11. The Water Board finds stormwater discharges from urban and developing areas in the San Francisco Bay Region to be significant sources of certain pollutants that cause or may be causing or threatening to cause or contribute to water quality impairment in waters of the Region. Furthermore, as delineated in the CWA section 303(d) list, the Water Board has found that there is a reasonable potential that municipal stormwater discharges cause or may cause or contribute to an excursion above water quality standards for the following pollutants: mercury, PCBs, furans, dieldrin, chlordane, DDT, trash, and selenium in San Francisco Bay segments; pesticide associated toxicity, and trash in ~~all~~ urban creeks; and trash and low dissolved oxygen in Lake Merritt, in Alameda County. In accordance with CWA section 303(d), the Water Board is required to establish Total Maximum Daily Loads (TMDLs) for these pollutants to these waters to gradually eliminate impairment and attain water quality standards. Therefore, ~~certain early~~ pollutant control actions and further pollutant impact assessments by the Permittees are warranted and required pursuant to this Order.
12. Under section 13389 of the California Water Code, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA).

### **Nature of Discharges and Sources of Pollutants**

13. Stormwater runoff is generated from various land uses in all the hydrologic sub-basins in the Basin and discharges into watercourses, which in turn flow into Central, Lower and South San Francisco Bay, and Suisun and San Pablo Bays.
14. The quality and quantity of runoff discharges vary considerably and are affected by hydrology, geology, land use, season, and sequence and duration of hydrologic events. Pollutants of concern in these discharges are certain heavy metals; excessive sediment production from erosion due to anthropogenic activities; petroleum hydrocarbons from sources such as used motor oil; microbial pathogens of domestic sewage origin from illicit discharges; certain pesticides associated with acute aquatic toxicity; excessive nutrient loads, which can cause or contribute to the depletion of dissolved oxygen and/or toxic concentrations of dissolved ammonia; trash, which impairs beneficial uses including, but not

limited to, support for aquatic life; and other pollutants ~~which~~that can cause aquatic toxicity in the receiving waters.

15. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered by this Order. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under its NPDES permitting scheme pursuant to USEPA stormwater regulations.
16. Certain pollutants present in stormwater and/or urban runoff can be derived from extraneous sources over which the Permittees have limited or no direct jurisdiction. Examples of such pollutants and their respective sources are polycyclic aromatic hydrocarbons (PAHs), which are products of internal combustion engine operation and other sources; heavy metals, such as copper from vehicle brake pad wear and zinc from vehicle tire wear; dioxins as products of combustion; polybrominated diphenyl ethers that are incorporated in many household products as flame retardants; mercury resulting from atmospheric deposition; and naturally occurring minerals from local geology. All these pollutants, and others, can be deposited on paved surfaces, rooftops, and other impervious surfaces as fine airborne particles—thus yielding stormwater runoff pollution that is unrelated to the activity associated with a given project site.
17. The Water Board will notify interested agencies and interested persons of the availability of reports, plans, and schedules, including Annual Reports, and will provide interested persons with an opportunity for a public hearing and/or an opportunity to submit their written views and recommendations. The Water Board will consider all comments and may modify the reports, plans, or schedules or may modify this Order in accordance with applicable law. All submittals required by this Order conditioned with acceptance by the Water Board will be subject to these notification, comment, and public hearing procedures.
18. The Water Board notified the Permittees and interested agencies and persons of its intent to adopt this Order and provided an opportunity to submit written comments and recommendations.
19. The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
20. This Order supersedes and rescinds Order Nos. R2-2009-0074 and R2-2011-0083.
21. This Order serves as a NPDES permit, pursuant to CWA section 402, or amendments thereto, and shall become effective ~~XXXXXX~~January 1, 2016, provided the Regional Administrator, USEPA, Region 9, has no objections.

**THEREFORE, IT IS HEREBY ORDERED** that Order No. R2-2009-0074 and R2-2011-0183 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions of Water Code division 7 (commencing with § 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Permittees shall comply with the following requirements in this Order. This action in no way prevents the Water Board from taking enforcement action for past violations of the previous orders.

## **A. DISCHARGE PROHIBITIONS**

- A.1.** The Permittees shall, within their respective jurisdictions, effectively prohibit the discharge of non-stormwater (materials other than stormwater) into storm drain systems and watercourses. NPDES-permitted discharges are exempt from this prohibition. Provision C.15 describes a tiered categorization of non-stormwater discharges based on potential for pollutant content that may be discharged upon adequate assurance that the discharge contains no pollutants of concern at concentrations that will impact beneficial uses or cause exceedances of water quality standards.
- A.2.** It shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.

## **B. RECEIVING WATER LIMITATIONS**

- B.1.** The discharge shall not cause the following conditions to create a condition of nuisance or to adversely affect beneficial uses of waters of the State:
- a.** Floating, suspended, or deposited macroscopic particulate matter, or foam;
  - b.** Bottom deposits or aquatic growths;
  - c.** Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
  - d.** Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
  - e.** Substances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption.
- B.2.** The discharge shall not cause or contribute to a violation of any applicable water quality standard for receiving waters. If applicable water quality objectives are adopted and approved by the State Water Board after the date of the adoption of this Order, the Water Board may revise and modify this Order as appropriate.

## C.1 Compliance with Discharge Prohibitions and Receiving Waters Limitations

The Permittees shall comply with Discharge Prohibitions A.1 and A.2 and Receiving Water Limitations B.1 and B.2 through the timely implementation of control measures and other actions as specified in Provisions C.2 through C.15. Compliance with Provisions C.9 through C.12 and C.14 of this Order, which prescribe requirements and schedules for Permittees identified therein to manage their discharges that may cause or contribute to violations of water quality standards (WQS) for pesticides, trash, mercury, polychlorinated biphenyls (PCBs), ~~copper~~, and bacteria, shall constitute compliance during the term of this Order with Receiving Water Limitations B.1 and B.2 for the pollutants ~~in and the~~ receiving waters identified in the provisions. Compliance with Provision C.10, which prescribes requirements and schedules for Permittees to manage their discharges of trash, shall also constitute compliance with Discharge Prohibitions A.1 and A.2 during the term of this Order for discharges of trash. If exceedance(s) of ~~water quality standards (WQS)~~, except for exceedances of water quality standards for pesticides, trash, mercury, PCBs, and bacteria that are managed pursuant to Provisions C.9 through C.12 and C.14, persist in receiving waters notwithstanding the implementation of the required controls and actions, the Permittees shall comply with the following procedure:

- a. Upon a determination by either the Permittee(s) or the Water Board that discharges are causing or contributing to an exceedance of an applicable ~~water quality standards (WQS)~~, the Permittee(s) shall notify, within no more than 30 days, and thereafter submit a report to the Water Board that describes controls or best management practices (BMPs) that are currently being implemented, and the current level of implementation, and additional controls or BMPs that will be implemented, and/or an increased level of implementation, to prevent or reduce the discharge of pollutants that are causing or contributing to the exceedance of water quality standards. The report may be submitted in conjunction with the Annual Report, unless the Water Board directs an earlier submittal, and shall constitute a request to the Water Board for amendment of this NPDES Permit. The report and application for amendment shall include an implementation schedule. The Water Board may require modifications to the report and application for amendment; and
- b. Submit any modifications to the report required by the Water Board within 30 days of notification.

As long as Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Water Board to develop additional control measures and BMPs and reinitiate the Permit amendment process.

## C.2. Municipal Operations

The purpose of this provision is to ensure implementation of appropriate BMPs by all Permittees to control and reduce non-stormwater and polluted stormwater discharges to storm drains and watercourses during operation, inspection, and routine repair and maintenance activities of municipal facilities and infrastructure.

### C.2.a. Street and Road Repair and Maintenance

- i. **Task Description** – Asphalt/Concrete Removal, Cutting, Installation, and Repair  
The Permittees shall implement appropriate BMPs at street and road repair and/or maintenance sites to control debris and waste materials during road and parking lot installation, repaving, or repair maintenance activities, such as those described in the California Stormwater Quality Association's (CASQA's) Handbook for Municipal Operations.
- ii. **Implementation Levels**
  - (1) The Permittees shall require proper management of concrete slurry and wastewater, asphalt, pavement cutting, and other street and road maintenance materials and wastewater to avoid discharge to storm drains from such work sites. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer system is available for the wastewater generated from these activities provided that appropriate approvals are obtained and pretreatment standards are met.
  - (2) The Permittees shall require sweeping and/or vacuuming to remove debris, concrete, or sediment residues from such work sites upon completion of work. The Permittees shall require cleanup of all construction debris, spills, and leaks using dry methods (e.g., absorbent materials, rags, pads, and vacuuming), as described in the Bay Area Stormwater Management Agencies Association's (BASMAA's) Blueprint for a Clean Bay.
- iii. **Reporting** – The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report.

### C.2.b. Sidewalk/Plaza Maintenance and Pavement Washing

- i. **Task Description** – The Permittees shall implement and require to be implemented BMPs that prevent the discharge of polluted wash water and non-stormwater to storm drains for pavement washing; sidewalk and plaza cleaning; mobile cleaning; pressure washing operations in locations such as parking lots and garages; trash areas; and gas station fueling areas. The Permittees shall implement the BMPs included in BASMAA's Mobile Surface Cleaner Program. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer is available for the wastewater generated from these activities provided that appropriate approvals and pretreatment standards are met.

- ii. **Reporting** – The Permittees shall report on implementation of and compliance with these BMPs in their Annual Report.

**C.2.c. Bridge and Structure Maintenance and Graffiti Removal**

**i. Task Description**

- (1) The Permittees shall implement appropriate BMPs to prevent polluted stormwater and non-stormwater discharges from bridges and structural maintenance activities directly over water or into storm drains.
- (2) The Permittees shall implement BMPs for graffiti removal that prevent non-stormwater and wash water discharges into storm drains.

**ii. Implementation Levels**

- (1) The Permittees shall prevent all debris, including structural materials and coating debris, such as paint chips, and other debris and pollutants generated in bridge and structure maintenance or graffiti removal from entering storm drains or water courses.
- (2) The Permittees shall protect nearby storm drain inlets before removing graffiti from walls, signs, sidewalks, or other structures. The Permittees shall prevent any discharge of debris, cleaning compound waste, paint waste, or wash water due to graffiti removal from entering storm drains or watercourses.
- (3) The Permittees shall use proper disposal methods for wastes generated from these activities. The Permittees shall train their employees and/or specify in contracts the proper capture and disposal methods for the wastes generated.

- iii. **Reporting** – The Permittees shall report on implementation of and compliance with these BMPs in their Annual Report.

**C.2.d. Stormwater Pump Stations**

- i. **Task Description** –The Permittees shall implement measures to operate, inspect, and maintain stormwater pump stations to eliminate non-stormwater discharges containing pollutants, and to reduce pollutant loads in stormwater discharges to comply with WQS.

- ii. **Implementation Levels** – The Permittees shall comply with the following at Permittee-owned or -operated pump stations:

- (1) Upon becoming aware that the discharge from a pump station has a dissolved oxygen (DO) concentration below 3.0 mg/L, Implement ~~implement~~ corrective actions, such as continuous pumping at a low flow rate, aeration, or other appropriate methods to maintain dissolved oxygen (DO) concentrations of the discharge above 3 milligrams per liter (mg/L) at all times and verify the effectiveness of the corrective actions with monitoring. Corrective actions do not need to be implemented on

discharges from pump stations that remain in the stormwater collection system or infiltrate into a dry creek immediately downstream.

- (2) Ensure that pump stations are free from debris and trash and replace any oil absorbent booms, as needed, and investigate and abate illicit discharges. Pump stations excluded from C.2.d.ii.(1) above are not excluded from this requirement.
- (3) The Permittees shall maintain records of inspection, maintenance, ~~and~~ implementation of corrective actions, and any monitoring records at Permittee-owned or -operated pumped stations. These records shall be made available to Water Board staff or its representatives during inspections and audits, or otherwise upon request.

### **C.2.e. Rural Public Works Construction and Maintenance**

#### **i. Task Description – Rural Road and Public Works Construction and Maintenance**

For the purpose of this provision, rural means any watershed or portion thereof that is developed with large lot home-sites, such as one acre or larger, or with primarily agricultural, grazing, or open space uses. The Permittees shall implement and require contractors to implement BMPs for erosion and sediment control during and after construction for maintenance activities on rural roads, particularly in or adjacent to stream channels or wetlands. The Permittees shall notify the Water Board, the California Department of Fish and Wildlife ([CDFW](#)), and the U.S. Army Corps of Engineers, where applicable, and obtain appropriate agency permits for rural public works activities before work in or near creeks and wetlands.

#### **ii. Implementation Level**

- (1) The Permittees shall continue to implement BMPs for erosion and sediment control measures during construction and maintenance activities on rural roads, including developing and implementing appropriate training and technical assistance resources for rural public works activities.
- (2) The Permittees shall implement appropriate BMPs for the following activities. BMPs shall minimize impacts on streams and wetlands in the course of rural road and public works maintenance and construction activities:
  - (a) Road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport;
  - (b) Identification and prioritization of rural road maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources;
  - (c) Construction of roads and culverts that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability;

- (d) Implementation of an inspection program to maintain rural roads' structural integrity and prevent impacts to water quality;
  - (e) Maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts, and address excessive erosion;
  - (f) Re-grading of unpaved rural roads to slope outward where consistent with road engineering safety standards, and installation of water bars as appropriate; and
  - (g) Replacement of existing culverts or design of new culverts or bridge crossings shall use measures to reduce erosion, provide fish passage, and maintain natural stream geomorphology in a stable manner.
- (3) The Permittees shall incorporate existing training and guidance on permitting requirements for rural public works activities so as to stress the importance of proper planning and construction to avoid water quality impacts.
  - (4) The Permittees shall provide training incorporating these BMPs to rural public works maintenance staff at least twice within this Permit term.
- iii. Reporting** – The Permittees shall report on the implementation of and compliance with BMPs for the rural public works construction and maintenance activities in their Annual Report, including reporting on increased maintenance in priority areas.

#### **C.2.f. Corporation Yard BMP Implementation**

**i. Task Description** – Corporation Yard Maintenance

- (1) The Permittees shall implement and maintain a site-specific Stormwater Pollution Prevention Plan (SWPPP) for corporation yards, including municipal vehicle maintenance, heavy equipment, and maintenance vehicle parking areas, and material storage facilities, to comply with water quality standards. Each SWPPP shall incorporate all applicable BMPs that are described in the California Stormwater Quality Association's ([CASQA's](#)) Handbook for Municipal Operations and the Caltrans Storm Water Quality Handbook Maintenance Staff Guide, May 2003, and its addenda, as appropriate.
- (2) The requirements in this provision shall apply only to facilities that are not covered under the State [Water](#) Board's Industrial Stormwater NPDES General Permit.

**ii. Implementation Level**

- (1) Implement BMPs to minimize pollutant discharges in stormwater and prohibit non-stormwater discharges, such as wash waters and street sweeper, vactor, and other related equipment wash water. Pollution control actions shall include, but not be limited to, good housekeeping practices, material and waste storage control, and vehicle leak and spill control.

- (2) Routinely inspect corporation yards to ensure that non-stormwater discharges are not entering the storm drain system and pollutant discharges are prevented to the maximum extent practicable. At a minimum, each corporation yard shall be fully inspected each year between September 1 and September 30, beginning the 2016-2017 reporting year. Active non-stormwater discharges shall cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded.
- (3) Plumb all vehicle and equipment wash areas to the sanitary sewer after coordination with the local sanitary sewer agency and equip with a pretreatment device (if necessary) in accordance with the requirements of the local sanitary sewer agency.
- (4) Use dry cleanup methods when cleaning debris and spills from corporation yards. If wet cleaning methods must be used (e.g., pressure washing), the Permittee shall ensure that wash water is collected and disposed in the sanitary sewer after coordination with the local sanitary sewer agency and in accordance with the requirements of the local sanitary sewer agency. Any private companies hired by the Permittee to perform cleaning activities on Permittee-owned property shall follow the same requirements. In areas where sanitary sewer connection is not available, the Permittees shall collect and haul the wash water to a municipal wastewater treatment plant, or implement appropriate BMPs and dispose of the wastewater to land in a manner that does not adversely impact surface water or groundwater.
- (5) Outdoor storage areas containing pollutants shall be covered and/or bermed to prevent discharges of polluted stormwater runoff or run-on to storm drain inlets.

**iii. Reporting –**

- (1) In the 2015-2016 Annual Report, Permittees shall report on implementation of SWPPPs, the results of inspections, and any follow-up actions in their Annual Report.
- (2) Beginning with the 2016-2017 Annual Report, The Permittees shall list activities conducted in the corporation yards that have BMPs in the site-specific SWPPP, date of inspections, the results of inspections, and any follow-up actions, including the date of any necessary corrective actions ~~were~~ implemented, in their Annual Report.

### C.3. New Development and Redevelopment

The goal of Provision C.3 is for the Permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques.

#### C.3.a. New Development and Redevelopment Performance Standard Implementation

**i. Task Description** – At a minimum, each Permittee shall:

- (1) Have adequate legal authority to implement all requirements of Provision C.3;
- (2) Have adequate development review and permitting procedures to impose conditions of approval or other enforceable mechanisms to implement the requirements of Provision C.3. For projects discharging directly to CWA section 303(d)-listed waterbodies, conditions of approval must require that post-development runoff not exceed pre-development levels for such pollutants that are listed;
- (3) Evaluate potential water quality effects and identify appropriate mitigation measures when conducting environmental reviews, such as under CEQA;
- (4) Provide training adequate to implement the requirements of Provision C.3 for staff, including interdepartmental training;
- (5) Provide outreach adequate to implement the requirements of Provision C.3, including providing education materials to municipal staff, developers, contractors, construction site operators, and owner/builders, early in the planning process and as appropriate;
- (6) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate site design measures that may include minimizing land disturbance and impervious surfaces (especially parking lots); clustering of structures and pavement; directing roof runoff to vegetated areas; use of micro-detention, including distributed landscape-based detention; preservation of open space; protection and/or restoration of riparian areas and wetlands as project amenities;
- (7) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate source control measures to limit pollutant generation, discharge, and runoff. These source control measures should include:
  - Storm drain inlet stenciling.

- Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs, such as Bay-Friendly Landscaping.
  - Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.
  - Covered trash, food waste, and compactor enclosures.
  - Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's regulations and standards:
    - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.
    - Dumpster drips from covered trash and food compactor enclosures.
    - Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.
    - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option.
    - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option.
- (8) Revise, as necessary, General Plans to integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies (e.g., referencing the Bay-Friendly Landscape Guidelines).
- ii. **Reporting** – Provide a brief summary of the method(s) of implementation of Provisions C.3.a.i.(1)–(8) in the 2016 Annual Report.

### C.3.b. Regulated Projects

- i. **Task Description** – The Permittees shall require all projects fitting the category descriptions listed in Provision C.3.b.ii below (hereinafter called Regulated Projects) to implement LID source control, site design, and stormwater treatment onsite or at a joint stormwater treatment facility<sup>1</sup> in accordance with Provisions C.3.c and C.3.d, unless the Provision C.3.e alternate compliance options are invoked. For adjacent Regulated Projects that will discharge runoff to a joint stormwater treatment facility, the treatment facility must be completed by the end of construction of the first Regulated Project that will be discharging runoff to the joint stormwater treatment facility.
- (1) Any Regulated Project that has been approved with stormwater treatment measures in compliance with Provision C.3.d. under a previous MS4

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<sup>1</sup> **Joint stormwater treatment facility** – Stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects.

permit is exempt from the requirements of Provision C.3.c. (low impact development requirements).

(2) ~~However, any~~ Any Regulated Project that was approved with no Provision C.3. stormwater treatment requirements under a previous MS4 permit and that has not begun construction by the effective date of this permit, shall be required to fully comply with the requirements of C.3.c and C.3.d. ~~Permittees may grant exemptions from this requirement as follows:~~

(a) An exemption may be granted to:

(i) Any Regulated Project that was previously approved with a vesting tentative map that confers a vested right to proceed with development in substantial compliance with the ordinance, policies, and standards in effect at the time the vesting tentative map was approved or conditionally approved, as allowed by State law.

(ii) Any Regulated Project for which the Permittee has no legal authority to require changes to previously granted approvals, such as projects that have been granted building permits.

(b) An exemption from the LID requirements of Provision C.3.c may be granted to any Regulated Project as long as stormwater treatment with media filters is provided that comply with the hydraulic sizing requirements of Provision C.3.d.

Regulated Projects, as they are defined in this Provision, do not include detached single-family home projects that are not part of a larger plan of development.

**ii. Regulated Projects are defined in the following categories:**

**(1) Special Land Use Categories**

**(a) New Development or redevelopment projects** that fall into one of the categories listed below and that create and/or replace 5000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects of the following four types on public or private land that fall under the planning and building authority of a Permittee:

(i) Auto service facilities, described by the following Standard Industrial Classification (SIC) Codes: 5013, 5014, 5541, 7532-7534, and 7536-7539;

(ii) Retail gasoline outlets;

(iii) Restaurants (SIC Code 5812); or

(iv) Stand-alone uncovered parking lots and uncovered parking lots that are part of a development project if the parking lot creates and/or replaces 5,000 square feet or more of impervious surface. This category includes the top uncovered portion of parking structures, unless drainage from the uncovered portion is

connected to the sanitary sewer along with the covered portions of the parking structure.

- (b) For redevelopment projects in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv), specific exclusions are:
  - (i) Interior remodels; and
  - (ii) Routine maintenance or repair such as:
    - roof or exterior wall surface replacement, and/or
    - pavement resurfacing within the existing footprint.
- (c) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).
- (d) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(2) **Other Development Projects**

New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. This category includes development projects on public or private land that fall under the planning and building authority of a Permittee. Detached single-family home projects that are not part of a larger plan of development are specifically excluded.

(3) **Other Redevelopment Projects**

Redevelopment projects that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred. This

category includes redevelopment projects on public or private land that fall under the planning and building authority of a Permittee.

Specific exclusions to this category are:

- Interior remodels; and
- Routine maintenance or repair such as:
  - roof or exterior wall surface replacement, and/or
  - pavement resurfacing within the existing footprint.
- (a) Where a redevelopment project results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).
- (b) Where a redevelopment results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(4) **Road Projects**

Any of the following types of road projects that create 10,000 square feet or more of newly constructed contiguous impervious surface and that fall under the building and planning authority of a Permittee:

- (a) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.
- (b) Widening of existing streets or roads with additional traffic lanes.
  - (i) Where the addition of traffic lanes results in an alteration of more than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).
  - (ii) Where the addition of traffic lanes results in an alteration of less than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat

stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system shall be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.

- (c) Construction of impervious trails that are greater than 10 feet wide or are creek-side (within 50 feet of the top of bank).
- (d) Specific exclusions to Provisions C.3.b.ii.(4)(a)-(c) include the following:
  - Sidewalks built as part of new streets or roads and built to direct stormwater runoff to adjacent vegetated areas.
  - Bicycle lanes built as part of new streets or roads but are not hydraulically connected to the new streets or roads and that direct stormwater runoff to adjacent vegetated areas.
  - Impervious trails built to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees.
  - Sidewalks, bicycle lanes, or trails constructed with permeable surfaces.<sup>2</sup>
  - Caltrans highway projects and associated facilities.

iii. **Implementation Level** – All elements of Provision C.3.b.i.-ii. shall be fully implemented immediately, including a database or equivalent tabular format that contains all the information listed under Reporting (Provision C.3.b.iv.)

iv. **Reporting**

(1) C.3.b.i.(2) Reporting

In the 2017 Annual Report, each Permittee shall provide a complete list of the development projects that are subject to the requirements of Provision C.3.b.i.(2). For each such project, the Permittee shall indicate the type of stormwater treatment system required or the specific exemption granted, pursuant to Provision C.3.b.i.(2)(a) and (b). If a Permittee has no projects subject to Provision C.3.b.i.(2), it shall so state in the 2017 Annual Report.

~~(1)~~(2) **Annual Reporting – C.3.b.ii. Regulated Projects**

For each Regulated Project approved during the fiscal year reporting period, the following information shall be reported electronically in the

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<sup>2</sup> Permeable surfaces include pervious concrete, porous asphalt, unit pavers, and granular materials.

fiscal year Annual Report, in tabular form (as set forth in the attached Provision C.3.b. Sample Reporting Table):

- (a) Project Name, Number, Location (cross streets), and Street Address;
- (b) Name of Developer, Phase No. (if project is being constructed in phases, each phase should have a separate entry), Project Type (e.g., commercial, industrial, multi-unit residential, mixed-use, public), and description;
- (c) Project watershed;
- (d) Total project site area and total area of land disturbed;
- (e) Total new impervious surface area and/or total replaced impervious surface area;
- (f) If redevelopment or road widening project, total pre-project impervious surface area and total post-project impervious surface area;
- (g) Status of project (e.g., application date, application deemed complete date, project approval date);
- (h) Source control measures;
- (i) Site design measures;
- (j) All post-construction stormwater treatment systems installed onsite, at a joint stormwater treatment facility, and/or at an offsite location;
- (k) Operation and maintenance responsibility mechanism for the life of the project;
- (l) Hydraulic Sizing Criteria used;
- (m) Alternative compliance measures for Regulated Project (if applicable)
  - (i) If alternative compliance will be provided at an offsite location in accordance with Provision C.3.e.i.(1), include information required in Provision C.3.b.iv.(2)(a) – (l) for the offsite project; and
  - (ii) If alternative compliance will be provided by paying in-lieu fees in accordance with Provision C.3.e.i.(2), provide information required in Provision C.3.b.iv.(2)(a) – (l) for the Regional Project. Additionally, provide a summary of the Regional Project’s goals, duration, estimated completion date, total estimated cost of the Regional Project, and estimated monetary contribution from the Regulated Project to the Regional Project; and
- (n) Hydromodification (HM) Controls (see Provision C.3.g.) – If not required, state why not. If required, state control method used.

### **C.3.c. Low Impact Development (LID)**

The goal of LID is to reduce runoff and mimic a site’s predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing,

detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

### Task Description

i. The Permittees shall, at a minimum, implement the following LID requirements:

(1) **Source Control Requirements**

Require all Regulated Projects to implement source control measures onsite that, at a minimum, shall include the following:

- (a) Minimization of stormwater pollutants of concern in urban runoff through measures that may include plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's regulations and standards:
- Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants;
  - Dumpster drips from covered trash, food waste, and compactor enclosures;
  - Discharges from covered outdoor wash areas for vehicles, equipment, and accessories;
  - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option; and
  - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option;
- (b) Properly designed covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas;
- (c) Properly designed trash storage areas;
- (d) Landscaping that minimizes irrigation and runoff, promotes surface infiltration, minimizes the use of pesticides and fertilizers, and incorporates other appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping;
- (e) Efficient irrigation systems; and
- (f) Storm drain system stenciling or signage.

(2) **Site Design and Stormwater Treatment Requirements**

- (a) Require each Regulated Project to implement at least the following design strategies onsite:
- (i) Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes

- and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;
- (ii) Conserve natural areas, including existing trees, other vegetation, and soils;
  - (iii) Minimize impervious surfaces;
  - (iv) Minimize disturbances to natural drainages; and
  - (v) Minimize stormwater runoff by implementing one or more of the following site design measures:
    - Direct roof runoff into cisterns or rain barrels for reuse.
    - Direct roof runoff onto vegetated areas.
    - Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
    - Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
    - Construct sidewalks, walkways, and/or patios with pervious pavement systems.<sup>3</sup>
    - Construct driveways, bike lanes, and/or uncovered parking lots with pervious pavement systems.
- (b) Permittees shall collectively, on a regional or countywide basis, develop and adopt design specifications for pervious pavement systems, subject to the Executive Officer's approval. If countywide design specifications have been adopted and are contained in countywide stormwater handbooks, Permittees may reference these documents in the Annual Reports.
- (c) Require each Regulated Project to treat 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.
- (i) LID treatment measures are harvesting and use, infiltration, evapotranspiration, and biotreatment.
  - (ii) Biotreatment (or bioretention) systems shall be designed to have a surface area no smaller than what is required to accommodate a 5 inches/hour stormwater runoff surface loading rate, infiltrate runoff through biotreatment soil media at a minimum of 5 inches per hour, and maximize infiltration to the native soil during the life of the Regulated Project. The soil media for biotreatment (or bioretention) systems shall be designed to sustain healthy, vigorous plant growth and maximize stormwater runoff retention

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<sup>3</sup> Pervious pavement systems include pervious asphalt, pervious concrete, ~~and~~ pervious pavers, and grid pavers.

and pollutant removal. Permittees shall ensure that Regulated Projects use biotreatment soil media that meet the minimum specifications set forth in Attachment L of the previous permit (Order No. R2-2009-0074), dated November 28, 2011.

Permittees may collectively (on an all-Permittee scale or countywide scale) develop and adopt revisions to the soil media minimum specifications, subject to the Executive Officer's approval.

- (iii) Green roofs may be considered biotreatment systems that treat roof runoff only if they meet certain minimum specifications. Permittees shall ensure that green roofs installed at Regulated Projects meet the following minimum specifications:
  - (i) The green roof system planting media shall be sufficiently deep to provide capacity within the pore space of the media for the required runoff volume specified by Provision C.3.d.i.(1).
  - (ii) The green roof system planting media shall be sufficiently deep to support the long term health of the vegetation selected for the green roof, as specified by a landscape architect or other knowledgeable professional.
- (d) Require any Regulated Project that does not comply with Provision C.3.c.i.(2)(bc) above to meet the requirements established in Provision C.3.e for alternative compliance.

## ii. Reporting

(1) Permittees shall collectively submit in the 2016 Annual Report, design specifications for pervious pavement systems that have been developed and adopted on a regional or countywide basis. If Permittees within a countywide program are using countywide design specifications that have been adopted and are contained in a countywide stormwater handbook, those Permittees may reference the countywide stormwater handbook in-lieu of submitting the actual design specifications.

~~(1)~~(2) For specific tasks listed above that are reported using the reporting tables required for Provision C.3.b.iv, a reference to those tables will suffice.

### C.3.d. Numeric Sizing Criteria for Stormwater Treatment Systems

- i. **Task Description** – The Permittees shall require that stormwater treatment systems constructed for Regulated Projects meet at least one of the following hydraulic sizing design criteria:
  - (1) **Volume Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to:
    - (a) The maximized stormwater capture volume for the area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), pages 175–178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or
    - (b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Section 5 of the ~~California Stormwater Quality Association's~~ [CASQA's](#) Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.
  - (2) **Flow Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:
    - (a) 10 percent of the 50-year peak flow rate;
    - (b) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or
    - (c) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.
  - (3) **Combination Flow and Volume Design Basis** – Treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.
- ii. **Reporting** – Permittees shall use the reporting tables required in Provision C.3.b.iv.(2)
- iii. **Limitations on Use of Infiltration Devices in Stormwater Treatment Systems**
  - (1) For Regulated Projects, each Permittee shall review planned land use and proposed treatment design to verify that installed stormwater treatment systems with no under-drain, and that function primarily as infiltration devices, should not cause or contribute to the degradation of groundwater quality at project sites. An infiltration device is any structure that is designed to infiltrate stormwater into the subsurface and, as designed, bypass the natural groundwater protection afforded by surface soil.

Infiltration devices include dry wells, injection wells, and infiltration trenches (includes french drains).

- (2) For any Regulated Project that includes plans to install stormwater treatment systems which function primarily as infiltration devices, the Permittee shall require that:
  - (a) Appropriate pollution prevention and source control measures are implemented to protect groundwater at the project site, including the inclusion of a minimum of two feet of suitable soil to achieve a maximum 5 inches/hour infiltration rate for the infiltration system;
  - (b) Adequate maintenance is provided to maximize pollutant removal capabilities;
  - (c) The vertical distance from the base of any infiltration device to the seasonal high groundwater mark is at least 10 feet. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater vertical distance from the base of the infiltration device to the seasonal high groundwater mark may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety);
  - (d) Unless stormwater is first treated by a method other than infiltration, infiltration devices are not approved as treatment measures for runoff from areas of industrial or light industrial activity; areas subject to high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; car washes; fleet storage areas (e.g., bus, truck); nurseries; and other land uses that pose a high threat to water quality;
  - (e) Infiltration devices are not placed in the vicinity of known contamination sites unless it has been demonstrated that increased infiltration will not increase leaching of contaminants from soil, alter groundwater flow conditions affecting contaminant migration in groundwater, or adversely affect remedial activities; and
  - (f) Infiltration devices are located a minimum of 100 feet horizontally away from any known water supply wells, septic systems, and underground storage tanks with hazardous materials. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater horizontal distance from the infiltration device to known water supply wells, septic systems, or underground storage tanks with hazardous materials may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the

level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety).

**C.3.e. Alternative or In-Lieu Compliance with Provision C.3.b.**

- i. The Permittees may allow a Regulated Project to provide alternative compliance with Provision C.3.b in accordance with one of the two options listed below:

(1) **Option 1: LID Treatment at an Offsite Location**

Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at an offsite project in the same watershed. The offsite LID treatment measures must provide hydraulically-sized treatment (in accordance with Provision C.3.d) of an equivalent quantity of both stormwater runoff and pollutant loading and achieve a net environmental benefit.

(2) **Option 2: Payment of In-Lieu Fees**

Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** pay equivalent in-lieu fees<sup>4</sup> to treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at a Regional Project.<sup>5</sup> The Regional Project must achieve a net environmental benefit.

- (3) For the alternative compliance options described in Provision C.3.e.i.(1) and (2) above, offsite and Regional Projects must be completed within three years after the end of construction of the Regulated Project. However, the timeline for completion of a Regional Project may be extended, up to five years after the completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

ii. **Special Projects**

- (1) When considered at the watershed scale, certain land development projects characterized as smart growth, high density, or transit-oriented development can either reduce existing impervious surfaces, or create less "accessory" impervious areas and automobile-related pollutant impacts.

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<sup>4</sup> **In-lieu fees** – Monetary amount necessary to provide both hydraulically-sized treatment (in accordance with Provision C.3.d) with LID treatment measures of an equivalent quantity of stormwater runoff and pollutant loading, and a proportional share of the operation and maintenance costs of the Regional Project.

<sup>5</sup> **Regional Project** – A regional or municipal stormwater treatment facility that discharges into the same watershed ~~that as~~ the Regulated Project ~~does~~.

Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these Special Projects, which are Regulated Projects that meet the specific criteria listed below in Provision C.3.e.ii.(2). For any Special Project, the allowable incentive LID Treatment Reduction Credit is the maximum percentage of the amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, that may be treated with one or a combination of the following two types of non-LID treatment systems:

- Tree-box-type high flowrate biofilters
- Vault-based high flowrate media filters

The allowed LID Treatment Reduction Credit recognizes that density and space limitations for the Special Projects identified herein may make 100% LID treatment infeasible.

- (2) Prior to granting any LID Treatment Reduction Credits, Permittees must first establish all the following:
- (a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite;
  - (b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at an offsite or Regional Project; and
  - (c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards at an offsite or Regional Project.

For each Special Project, a Permittee shall document the basis of infeasibility used to establish technical and/or economic infeasibility.

Under Provision C.3.e.vi, each Permittee is required to report on the infeasibility of 100% LID treatment in each scenario described in Provision C.3.e.ii.(2)(a)-(c) above, for each of the Special Projects for which LID Treatment Reduction Credit was applied.

- (3) Category A Special Project Criteria
- (a) To be considered a Category A Special Project, a Regulated Project must meet all of the following criteria:
    - (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
    - (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-

- oriented commercial district, or historic preservation site and/or district.
- (iii) Create and/or replace one half acre or less of impervious surface area.
  - (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, Americans with Disabilities Act (ADA) accessibility, and passenger and freight loading zones.
  - (v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.
- (b) Any Category A Special Project may qualify for 100% LID Treatment Reduction Credit, which would allow the Category A Special Project to treat up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (4) Category B Special Project Criteria
- (a) To be considered a Category B Special Project, a Regulated Project must meet all of the following criteria:
    - (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
    - (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.
    - (iii) Create and/or replace greater than one-half acre but no more than 2 acres of impervious surface area.
    - (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
    - (v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.
  - (b) For any Category B Special Project, the maximum LID Treatment Reduction Credit allowed is determined based on the density achieved by the Project in accordance with the criteria listed below. Density is

expressed in Floor Area Ratios (FARs<sup>6</sup>) for commercial development projects, in Dwelling Units per Acre (DU/Ac) for residential development projects, and in FARs and DU/Ac for mixed-use development projects.

(i) 50% Maximum LID Treatment Reduction Credit

- For any commercial Category B Special Project with an FAR of at least 2:1, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a gross density<sup>7</sup> of at least 50 DU/Ac, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any mixed use Category B Special Project with an FAR of at least 2:1 or a gross density of at least 50 DU/Ac, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(ii) 75% Maximum LID Treatment Reduction Credit

- For any commercial Category B Special Project with an FAR of at least 3:1, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a gross density of at least 75 DU/Ac, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any mixed use Category B Special Project with an FAR of at least 3:1 or a gross density of at least 75 DU/Ac, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(iii) 100% Maximum LID Treatment Reduction Credit

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<sup>6</sup> **Floor Area Ratio** – The ratio of the total floor area on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area.

<sup>7</sup> **Gross Density** – The total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses.

- For any commercial Category B Special Project with an FAR of at least 4:1, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
  - For any residential Category B Special Project with a gross density of at least 100 DU/Ac, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
  - For any mixed use Category B Special Project with an FAR of at least 4:1 or a gross density of at least 100 DU/Ac, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (5) Category C Special Project Criteria (Transit-Oriented Development)
- (a) Transit-Oriented Development refers to the clustering of homes, jobs, shops and services in close proximity to rail stations, ferry terminals or bus stops offering access to frequent, high-quality transit services. This pattern typically involves compact development and a mixing of different land uses, along with amenities like pedestrian-friendly streets. To be considered a Category C Special Project, a Regulated Project must meet all of the following criteria:
    - (i) Be characterized as a non-auto-related land use project. That is, Category C specifically excludes any Regulated Project that is a stand-alone surface parking lot; car dealership; auto and truck rental facility with onsite surface storage; fast-food restaurant, bank or pharmacy with drive-through lanes; gas station, car wash, auto repair and service facility; or other auto-related project unrelated to the concept of Transit-Oriented Development.
    - (ii) If a commercial development project, achieve at least an FAR of 2:1.
    - (iii) If a residential development project, achieve at least a gross density of 25 DU/Ac.
    - (iv) If a mixed use development project, achieve at least an FAR of 2:1 or a gross density of 25 DU/Ac.
  - (b) For any Category C Special Project, the total maximum LID Treatment Reduction Credit allowed is the sum of three different types of credits that the Category C Special Project may qualify for, namely: Location, Density and Minimized Surface Parking Credits.
  - (c) Location Credits

- (i) A Category C Special Project may qualify for the following Location Credits:
    - a. 50% Location Credit: Located within a ¼ mile radius of an existing or planned transit hub.
    - b. 25% Location Credit: Located within a ½ mile radius of an existing or planned transit hub.
    - c. 25% Location Credit: Located within a planned Priority Development Area (PDA), which is an infill development area formally designated by the Association of Bay Area Government's / Metropolitan Transportation Commission's FOCUS regional planning program. FOCUS is a regional incentive-based development and conservation strategy for the San Francisco Bay Area.
  - (ii) Only one Location Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Location Credits.
  - (iii) At least 50% or more of a Category C Special Project's site must be located within the ¼ or ½ mile radius of an existing or planned transit hub to qualify for the corresponding Location Credits listed above. One hundred percent of a Category C Special Project's site must be located within a PDA to qualify for the corresponding Location Credit listed above.
  - (iv) Transit hub is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by three or more bus routes (i.e., a bus stop with no supporting services does not qualify). A planned transit hub is a station on the MTC's Regional Transit Expansion Program list, per MTC's Resolution 3434 (revised April 2006), which is a regional priority funding plan for future transit stations in the San Francisco Bay Area.
- (d) Density Credits: To qualify for any Density Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.(54)(c) above.
- (i) A Category C Special Project that is a commercial or mixed-use development project may qualify for the following Density Credits:
    - a. 10% Density Credit: Achieve an FAR of at least 2:1.
    - b. 20% Density Credit: Achieve an FAR of at least 4:1.
    - c. 30% Density Credit: Achieve an FAR of at least 6:1.
  - (ii) A Category C Special Project that is a residential or mixed-use development project may qualify for the following Density Credits:

- a. 10% Density Credit: Achieve a gross density of at least 30 DU/Ac.
  - b. 20% Density Credit: Achieve a gross density of at least 60 DU/Ac.
  - c. 30% Density Credit: Achieve a gross density of at least 100 DU/Ac.
- (iii) Commercial Category C Projects do not qualify for Density Credits based on DU/Ac and residential Category C Projects do not qualify for Density Credits based on FAR. Mixed use Category C Projects may use Density Credits based on either DU/Ac or FAR, but not both.
- (iv) Only one Density Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Density Credits.
- (e) Minimized Surface Parking Credits: To qualify for any Minimized Surface Parking Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.(54)(c) above.
- (i) A Category C Special Project may qualify for the following Minimized Surface Parking Credits:
    - a. 10% Minimized Surface Parking Credit: Have 10% or less of the total post-project impervious surface area dedicated to at-grade surface parking. The at-grade surface parking must be treated with LID treatment measures.
    - b. 20% Minimized Surface Parking Credit: Have no surface parking except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
  - (ii) Only one Minimized Surface Parking Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Minimized Surface Parking Credits.
- (6) Any Regulated Project that meets all the criteria for multiple Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project) may only use the LID Treatment Reduction Credit allowed under one of the Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project may use the LID Treatment Reduction Credit allowed under Category B or Category C, but not the sum of both.)

### iii. Implementation Level

- (1) Provisions C.3.e.i-ii supersede any Alternative Compliance Policies previously approved by the Executive Officer.

(2) The definitions of FAR and gross density applicable to Provisions C.3.e.ii.(4) and (5) are effective July 1, 2016, and shall apply to all Special Projects granted final discretionary approval on or after July 1, 2016.

~~(2)~~(3) For all offsite projects and Regional Projects installed in accordance with Provision C.3.e.i-ii, the Permittees shall meet the Operation & Maintenance (O&M) requirements of Provision C.3.h.

- iv. **Reporting** – Annual reporting shall be done in conjunction with reporting requirements under Provision C.3.b.iv.~~(2)~~.

Any Permittee choosing to require 100% LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e, shall include a statement to that effect in each Annual Report.

- v. **Reporting on Special Projects**

- (1) Permittees shall track any identified potential Special Projects, including those projects that have submitted planning applications but that have not received final discretionary approval.
- (2) In each Annual Report, Permittees shall report to the Water Board on these tracked potential Special Projects using Table 3.1 found at the end of Provision C.3. All the required column entry information listed in Table 3.1 shall be reported for each potential Special Project. Any Permittee with no Special Projects shall so state.

For each Special Project listed in Table 3.1, Permittees shall include a narrative discussion of the feasibility or infeasibility of 100% LID treatment onsite, offsite, and at a Regional Project. The narrative discussion shall address each of the following:

- (a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite.
- (b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at a Regional Project.
- (c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards a Regional Project.

Both technical and economic feasibility or infeasibility shall be discussed, as applicable. The discussion shall also contain enough technical and/or economic detail to document the basis of infeasibility used.

- (3) Once a Special Project has final discretionary approval, it shall be reported in the Provision C.3.b. Reporting Table in the same reporting year that the project was approved. In addition to the column entries contained in the

Provision C.3.b. Reporting Table, the Permittees shall provide the following supplemental information for each approved Special Project:

- (a) Submittal Date: Date that a planning application for the Special Project was submitted.
- (b) Description: Type of project, number of floors, number of units (commercial, mixed-use, residential), type of parking, and other relevant information.
- (c) Site Acreage: Total site area in acres.
- (d) Gross Density in DU/Ac: Number of dwelling units per acre.
- (e) Density in FAR: Floor Area Ratio.
- (f) Special Project Category: For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.
- (g) LID Treatment Reduction Credit: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit applied. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits applied.
- (h) Stormwater Treatment Systems: List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project's drainage area that will be treated by each treatment system.
- (i) List of Non-LID Stormwater Treatment Systems: List all non-LID stormwater treatment systems approved. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

### **C.3.f. Alternative Certification of Stormwater Treatment Systems**

- i. Task Description** – In lieu of reviewing a Regulated Project's adherence to Provision C.3.d, a Permittee may elect to have a third party conduct detailed review and certify the Regulated Project's adherence to Provision C.3.d. The third party reviewer must be a Civil Engineer or a Licensed Architect or Landscape Architect registered in the State of California, or staff of another Permittee subject to the requirements of this Permit.
- ii. Implementation Level** – Any Permittee accepting third-party reviews must make a reasonable effort to ensure that the third party has no conflict of interest with regard to the Regulated Project in question. That is, any consultant or contractor (or his/her employees) hired to design and/or construct a stormwater treatment system for a Regulated Project shall not also be the certifying third party. The Permittee must verify that the third party certifying any Regulated Project has current training on stormwater treatment system design (within three

years of the certification signature date) for water quality and understands the groundwater protection principles applicable to Regulated Project sites.

Training conducted by an organization with stormwater treatment system design expertise (such as a college or university, the American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, California Water Environment Association (CWEA), BASMAA, National Association of Flood & Stormwater Management Agencies, ~~California Stormwater Quality Association (CASQA)~~, or the equivalent, may be considered qualifying training.

- iii. **Reporting** – Projects reviewed by third parties shall be noted in reporting tables for Provision C.3.b.

### C.3.g. Hydromodification Management

**i. Hydromodification Management (HM) Projects** are Regulated Projects that create and/or replace one acre or more of impervious surface except where one of the following applies. All HM Projects shall meet the Hydromodification Management Standard of Provision C.3.g.ii.

- (1) The post-project impervious surface area is less than, or the same as, the pre-project impervious surface area.
- (2) The project is located in a catchment that drains to a hardened (e.g., continuously lined with concrete) engineered channel or channels or enclosed pipes that extend continuously to the Bay, Delta, or flow-controlled reservoir, or drains to channels that are tidally influenced.
- (3) The project is located in a catchment or subwatershed that is highly developed (i.e., that is 70% or more impervious).<sup>8</sup>

The Hydromodification Applicability Maps developed by the Permittees in the Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Programs, and the City of Vallejo, under the Previous Permit remain in effect and are provided in Attachment C to this Permit. Permittees that do not have the location-based applicability criteria (Provision C.3.g.i.(2) – (3)) shown on existing maps shall develop, or require to be developed, new maps, overlays to existing maps, or other equivalent information that demonstrates whether a project falls under one of those two criteria. Such maps, overlays, or other equivalent information shall be acceptable to the Executive Officer and shall not be effective until accepted by the Executive Officer.

- ~~(1) The post project impervious surface area is less than, or the same as, the pre-project impervious surface area.~~

<sup>8</sup> The Permittees' maps accepted for the Previous Permit were prepared using this standard, adjusted to 65% imperviousness to account for the presence of vegetation on the photographic references used to determine imperviousness. Thus, the maps for the Previous Permit are accepted as meeting the 70% requirement.

- ~~(2) The project is located in a catchment that drains to a hardened (e.g., continuously lined with concrete) engineered channel or channels or enclosed pipes that extend continuously to the Bay, Delta, or flow-controlled reservoir, or drains to channels that are tidally influenced.~~
- ~~(3) The project is located in a catchment or subwatershed that is highly developed (i.e., that is 70% or more impervious).<sup>9</sup>~~

ii. **HM Standard**

Stormwater discharges from HM Projects shall not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition. Increases in runoff flow and volume shall be managed so that post-project runoff shall not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The demonstration that post-project stormwater runoff does not exceed estimated pre-project runoff rates and durations shall include the following:

- (1) **Range of Flows to Control:** For Alameda, Contra Costa, San Mateo, and Santa Clara Permittees, and the City of Vallejo, HM controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10% ~~percent~~ of the pre-project 2-year peak flow<sup>10</sup> up to the pre-project 10-year peak flow. For Fairfield-Suisun Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations shall match from 20 percent of the 2-year peak flow up to the pre-project 10-year peak flow.
- (2) **Goodness of Fit Criteria:** The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.
- (3) **Standard HM Modeling:** Permittees shall use, or shall cause to be used, a continuous simulation hydrologic computer model to simulate pre-project and post-project runoff, or sizing factors or ~~charges charts~~ developed using such a model, to design onsite or regional HM controls. The Permittees shall compare, or shall cause to be compared, the pre-project

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~~<sup>9</sup> The Permittees' maps accepted for the Previous Permit were prepared using this standard, adjusted to 65% imperviousness to account for the presence of vegetation on the photographic references used to determine imperviousness. Thus, the maps for the Previous Permit are accepted as meeting the 70% requirement.~~

<sup>10</sup> Where referred to in this Order, the 2-year peak flow is determined using a flood frequency analysis based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35-50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include U.S. EPA's Hydrologic Simulation Program—Fortran (HSPF), [the](#) U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and U.S. EPA's Storm Water Management Model (SWMM).

and post-project model output for a long-term rainfall record, and shall show that applicable performance criteria in C.3.g.ii(1)-(3) above are met. HM controls designed using the Bay Area Hydrology Model (BAHM) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the most current BAHM User Manual. Modifications to the BAHM shall be acceptable to the Executive Officer, shall be consistent with the requirements of this Provision, and shall be reported as required below:

- **Precipitation Data:** Precipitation data used in the modeling of HM controls shall, at a minimum, be 30 years of hourly rainfall data representative of the area being modeled. Where a longer rainfall record is available, the longer record shall be used.
- **Calculating Post-Project Runoff:** Retention and detention basins shall be considered impervious surfaces for purposes of calculating post-project runoff. Pre- and post-project runoff shall be calculated and compared for the entire site, without separating or excluding areas that may be considered self-retaining.

**iii. HM Standard – Methodology for Direct Simulation of Erosion Potential**

The Permittees may, collectively, propose an additional method, using direct simulation of erosion potential, by which to meet the HM Standard in Provision C.3.g.ii. Such a method shall be submitted to the [Water Board](#) for review and shall not be effective until ~~approved by the Executive Officer~~[adopted by the Board as a Permit amendment](#). At a minimum, a proposal to use this additional method shall demonstrate that stormwater discharges from HM Projects using the method will not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition, and that increases in runoff flow and volume will be managed so that post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. Such demonstration shall include, but not be limited to:

- (1) An appropriately detailed discussion of the theoretical approach behind the method and the results for the areas to which it is proposed to be applied;
- (2) Appropriate continuous simulation hydrologic modeling using Region-specific field data, including creek data (cross sections, longitudinal data, etc.), precipitation data (a record of at least 30 years of hourly data that is appropriately representative of the areas where the method is to be applied), safety factor(s), and HM control designs; [and](#)
- (3) A description of how the method will be applied, including any models produced and how they will be used by the Permittees and/or project proponents. Such description shall include a listing of HM controls that may be used to comply with the HM requirements of this Permit, a

description, with appropriate technical support, of how they will be sized to comply and how the Permittees will ensure appropriate implementation of the method, and all other necessary information, as appropriate.

#### iv. Types of HM Controls

Projects shall meet the HM Standard using any of the following HM controls or a combination thereof:

- (1) **Onsite HM controls** are flow duration control structures, LID features and facilities, and hydrologic source controls that collectively result in the HM Standard being met at the point(s) where stormwater runoff discharges from the project site.
- (2) **Regional HM controls** are flow duration control structures that collect stormwater runoff discharge from multiple projects (each of which shall incorporate hydrologic source control measures as well) and are designed such that the HM Standard is met for all the projects at the point where the regional HM control discharges.
- (3) **In-stream measures** shall be an option only where the stream, which receives runoff from the project, is already impacted by erosive flows and shows evidence of excessive sediment, erosion, deposition, or is a hardened channel.

In-stream measures involve modifying the receiving stream channel slope and geometry so that the stream can convey the new flow regime without increasing the potential for erosion and aggradation. In-stream measures are intended to improve long-term channel stability and prevent erosion by reducing the erosive forces imposed on the channel boundary.

In-stream measures, or a combination of in-stream and onsite controls, shall be designed to achieve the HM Standard from the point where the project(s) discharge(s) to the stream to the mouth of the stream or to achieve an equivalent degree of flow control mitigation (based on amount of impervious surface mitigated) as part of an in-stream project located in the same watershed. Designing in-stream controls requires a hydrologic and geomorphic evaluation (including a longitudinal profile) of the stream system downstream and upstream of the project. As with all in-stream activities, other regulatory permits must be obtained by the project proponent.<sup>11</sup>

#### v. Implementation Level

All HM Projects shall meet the HM Standard in Provision C.3.g.ii immediately. For Contra Costa Permittees, Projects receiving final planning entitlements on

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<sup>11</sup> In-stream control projects require a Stream Alteration Agreement from [the California Department of Fish & Game CDFW](#), a CWA section 404 permit from the U.S. Army Corps of Engineers, and a section 401 certification from the Water Board. Early discussions with these agencies on the acceptability of an in-stream modification are necessary to avoid project delays or redesign.

or before ~~one year after the Permit effective date January 3, 2018,~~ may be allowed to use the Contra Costa design standards from the Previous Permit. After January 3, 2018, for Contra Costa Permittees, Projects shall comply with the Contra Costa design standards, including any modifications made.

**vi. Reporting**

(1) New HM Applicability Maps or equivalent information prepared pursuant to Provision C.3.g.i, for those Permittees who do not have an approved Map, shall be submitted, acceptable to the Executive Officer, not later than the second Annual Report following the Permit's effective date.

~~(2)~~ Contra Costa Permittees shall, with the first 2017 Annual Report following the Permit's effective date, submit a technical report, acceptable to the Executive Officer, consisting of an HM Management Plan describing how Contra Costa will implement the Permit's HM requirements (e.g., how it will update or modify its practices to meet Permit requirements). At a minimum, the technical report shall provide additional analysis and discussion as to how existing data appropriately evaluates how existing practices available for use to meet the Permit's HM requirements, including limit conditions. The report shall, as necessary, propose modifications to Contra Costa's current HM practices, or propose alternate practices that have been accepted by the Regional Water Board, to meet the Permit's HM requirements. The report may also: provide additional data on monitored installations; provide additional analysis and discussion as to how existing and additional data appropriately evaluates existing practices, including limit conditions and the range of conditions present across Contra Costa County; and provide other information or discussion, as appropriate.

~~(2)~~(3) Reporting of HM projects shall be as described in Provision C.3.b.

~~(3)~~(4) Permittees shall report collectively, with each Annual Report, a listing, summary, and date of modifications made to the BAHM, including the technical rationale. This shall be prepared at the ~~c~~Countywide ~~p~~Program level and submitted on behalf of participating Permittees.

~~(4)~~(5) In addition, for each HM Project approved during the reporting period, Permittees shall collect and make available the following information. Information shall be reported electronically, and, where appropriate, in tabular form.

- Device(s) or method(s) used to meet the HM Standard, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control(s);
- Method used by the project proponent to design and size the device or method used to meet the HM Standard;

- Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;
- For projects using standard sizing charts, a summary of sizing calculations used;
- For projects using the BAHM, a listing of model inputs; **and**
- For projects using custom modeling, a summary of the modeling calculations with a corresponding graph showing curve matching (existing, post-project, and post-project-with HM controls curves); **and**
- ~~For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM Project (name, location, date of start up, entity responsible for maintenance, etc.)~~

### C.3.h. Operation and Maintenance of Stormwater Treatment Systems

- i. **Task Description** – Each Permittee shall implement an Operation and Maintenance (O&M) Verification Program.
- ii. **Implementation Level** – At a minimum, the O&M Verification Program shall include the following elements:
  - (1) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that, at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:
    - (a) The project proponent’s signed statement accepting responsibility for the O&M of the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity;
    - (b) Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the O&M of the pervious pavement system(s) (if any), onsite, joint, and/or offsite installed stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity;
    - (c) Written text in project deeds, or conditions, covenants and restrictions (CCRs) for multi-unit residential projects that require the homeowners association or, if there is no association, each individual owner to assume responsibility for the O&M of the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity; or
    - (d) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the O&M responsibility

- for the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite treatment system(s) and HM control(s) (if any) to the project owner(s) or the Permittee.
- (2) Coordination with the appropriate mosquito and vector control agency with jurisdiction to establish a protocol for notification of installed stormwater treatment systems and HM controls.
  - (3) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that require the granting of site access to all representatives of the Permittee, local mosquito and vector control agency staff, and Water Board staff, for the sole purpose of performing O&M inspections of the installed pervious pavement system(s) (if any), stormwater treatment system(s) and HM control(s) (if any).
  - (4) A database or equivalent tabular format of the following:
    - (a) All pervious pavement system(s) that total 3000 square feet or more installed at Regulated Projects, offsite, or at a Regional Project. The total square footage should not include pervious pavement systems installed as private-use patios for single family homes, townhomes, or condominiums.
    - (b) All stormwater treatment systems installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.
    - (c) All HM controls installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.
  - (5) The database or equivalent tabular format required in Provision C.3.h.ii.(4) shall include the following information for each Regulated Project, offsite project, and Regional Project:
    - (a) Name and address of the project;
    - (b) Names of the owner(s) and responsible operator(s) of the installed pervious pavement system(s) (if any), stormwater treatment system(s), and/or HM control(s);
    - (c) Specific description of the location (or a map showing the location) of the installed pervious pavement system(s) (if any), stormwater treatment system(s), and HM control(s) (if any);
    - (d) Date(s) that the pervious pavement system(s) (if any), stormwater treatment system(s), and HM controls (if any) was/were installed;
    - (e) Description of the type and size of the pervious pavement systems (if any), stormwater treatment system(s), and HM control(s) (if any) installed;
    - (f) Detailed information on O&M inspections. For each inspection, include the following:
      - (i) Date of inspection.
      - (ii) Type of inspection (e.g., installation, annual, followup, spot, etc.).

- (iii) Type(s) of pervious pavement systems inspected (e.g., pervious concrete, pervious asphalt, pervious pavers, ~~etc.~~).
  - (iv) Type(s) of stormwater treatment systems inspected (e.g., swale, bioretention unit, tree well, ~~etc.~~) and an indication of whether the treatment system is an onsite, joint, or offsite system.
  - (v) Type of HM controls inspected.
  - (vi) Inspection findings or results (e.g., proper installation, proper operation and maintenance, system not operating properly because of plugging, bypass of stormwater because of improper installation or maintenance, maintenance required immediately, ~~etc.~~).
  - (vii) Enforcement action(s) taken, if any (e.g., verbal warning, notice of violation, compliance schedule, administrative citation, administrative order, ~~etc.~~).
- (6) A prioritized O&M Inspection Plan for inspecting all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems and HM controls installed at Regulated Projects, offsite locations, and/or at joint or Regional Projects. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient.

At a minimum, the O&M Inspection Plan must specify the following for each fiscal year:

- (a) Inspection by the Permittee of all newly installed pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls (at Regulated Projects, offsite locations, and/or at joint or Regional Projects) at the completion of installation to ensure approved plans have been followed. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient;
- (b) Inspection by the Permittee of at least an average of 20 percent, but no less than 15 percent, of the total number (at the end of the preceding fiscal year) of Regulated Projects, offsite projects, or Regional Projects. Each inspection shall include inspection of all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed at the Regulated Project, offsite project, or Regional Project. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient;

- (c) Inspection by the Permittee of all Regulated Projects, offsite projects, or Regional Projects at least once every five years. Each inspection shall include inspection of all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed at the Regulated Project, offsite project, or Regional Project. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient; and
- (d) For vault-based stormwater treatment systems, Permittees may accept 3<sup>rd</sup> party inspection reports in lieu of conducting Permittee O&M inspections only if the 3<sup>rd</sup> party inspections are conducted at least annually. Information from each 3<sup>rd</sup> party inspection shall be included in the database or tabular format required in Provision C.3.h.ii.(5) and each inspection shall be clearly identified as a 3<sup>rd</sup> party inspection.

Each 3<sup>rd</sup> party inspection report must clearly document the following:

- (i) Name of 3<sup>rd</sup> party inspection company.
  - (ii) Date of inspection.
  - (iii) Condition of the treatment unit(s) at the time of inspection.
  - (iv) Description of maintenance activities performed during the inspection.
  - (v) Date- and time-stamped photographs of the inside of the vault unit(s) before and after maintenance activities.
- (7) An Enforcement Response Plan (ERP) for all O&M inspections that serves as a reference document for inspection staff so that consistent enforcement actions can be taken to bring development projects into compliance. At a minimum, the ERP must contain the following:
- (a) Enforcement Procedures – A description of the Permittee’s procedures from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for recognizing common problems with the different types of pervious pavement systems, stormwater treatment systems, and/or HM controls, remedies for the problems, and appropriate enforcement actions, followup inspections, and appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.
  - (b) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools appropriate for different field scenarios of problems identified with the pervious pavement systems, stormwater treatment systems, and/or HM controls as well as for different types of inadequate response to enforcement actions taken.

- (c) Timely Correction of Identified Problems – A description of the Permittee’s procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all identified problems with the pervious pavement systems, stormwater treatment systems, and/or HM controls.

Corrective actions shall be implemented no longer than 30 days after a problem is identified by an inspector. Corrective actions can be temporary and more time may be allowed for permanent corrective actions. If more than 30 days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

**iii. Due Date for Implementation:** Immediate, except as follows:

(1) July 1, 2016, for Provision C.3.h.ii.(6) and all requirements pertaining to pervious pavement systems in Provisions C.3.h.ii.(1)-(5), C.3.h.iv., and C.3.h.v.

~~(1) July 1, 2017, for Provision C.3.h.ii.(7), which is due within 12 months of the Permit effective date.~~

- iv. Maintenance Approvals:** The Permittees shall ensure that all pervious pavement systems ~~of~~ that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed onsite, offsite, or at a joint or Regional Project by development proponents are properly operated and maintained for the life of the projects. In cases where the responsible party for a pervious pavement system, stormwater treatment system or HM control has worked diligently and in good faith with the appropriate State and federal agencies to obtain approvals necessary to complete maintenance activities, but these approvals are not granted, the Permittees shall be deemed to be in compliance with this Provision. Permittees shall ensure that constructed wetlands installed by Regulated Projects and used for urban runoff treatment shall abide by the Water Board’s Resolution No. 94-102: Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control and the O&M requirements contained therein.

**v. Reporting**

- (1) The database or equivalent tabular format required in Provisions C.3.b.ii.(4) and (5) shall be maintained by the Permittees. Upon request from the Executive Officer, information from this database or equivalent tabular format shall be submitted to Water Board staff for review. The requested information may include specific details on each inspection conducted within particular timeframes, such as several fiscal years.
- (2) On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting period) stormwater treatment systems and HM controls to the local mosquito and vector control agency and the

Water Board. This list shall include the facility locations and a description of the stormwater treatment measures and HM controls installed.

- (3) Each Permittee shall report the following information in the Annual Report each year:
  - (a) Total number of Regulated Projects in the Permittee's database or tabular format as of the end of the reporting period (fiscal year).
  - (b) Total number of Regulated Projects, offsite projects, and Regional Projects inspected during the reporting period (fiscal year).
  - (c) Percentage of the total number of Regulated Projects that were inspected during the reporting period (fiscal year).
  - (d) A discussion of the inspection findings for the year and any common problems encountered with various types of pervious pavement systems, treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.
  - (e) A discussion of the effectiveness of the Permittee's O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness of program).
  - (f) For the 2016 Annual Report, Permittees may report on the total number and percentage of treatment and HM controls inspected, and exclude discussion of inspection findings for pervious pavement systems.
- (4) Each Permittee shall certify in the ~~XX 2017~~ Annual Report that an ~~ERP~~Enforcement Response Plan has been completed by July 1, 2017.42 ~~months after the Permit effective date.~~

### C.3.i. Required Site Design Measures for Small Projects and Detached Single-Family Home Projects

- i. **Task Description** – The Permittees shall require all development projects, which create and/or replace  $\geq 2,500$  ft<sup>2</sup> to  $< 10,000$  ft<sup>2</sup> of impervious surface, and detached single-family home projects,<sup>12</sup> which create and/or replace 2,500 square feet or more of impervious surface, to install one or more of the following site design measures:
  - Direct roof runoff into cisterns or rain barrels for reuse.
  - Direct roof runoff onto vegetated areas.
  - Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
  - Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.

<sup>12</sup> **Detached single-family home project** – The building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

- Construct sidewalks, walkways, and/or patios with permeable surfaces. <sup>2</sup>
- Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.<sup>2</sup>

This provision applies to all development projects that require approvals and/or permits issued under the Permittee<sup>s</sup>' planning, building, or other comparable authority.

- Reporting** – On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

### C.3.e. Green Infrastructure Planning and Implementation

The Permittees shall complete and implement a Green Infrastructure Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements.

The ~~P~~plan is intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff ~~Total Maximum Daily Load~~ (TMDL) wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters. For this Permit term, the Plan is being required, in part, as an alternative to expanding the definition of Regulated Projects prescribed in Provision C.3.b to include all new and redevelopment projects that create or replace 5,000 square feet or more of impervious surface areas and road projects that just replace existing impervious surface area. It also provides a mechanism to establish and implement alternative or in-lieu compliance options for Regulated Projects and to account for and justify Special Projects in accordance with Provision C.3.e.

Over the long term, the ~~P~~plan is intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.

The ~~p~~Plan shall also identify means and methods to prioritize particular areas and projects within each Permittee's jurisdiction, at appropriate geographic and time scales, for implementation of green infrastructure projects. Further, it shall include means and methods to track the area within each Permittee's jurisdiction that is treated by green infrastructure controls and the amount of directly connected impervious area. As appropriate, it shall incorporate plans required elsewhere within

this Permit, and specifically plans required for the monitoring of and to ensure appropriate reductions in trash, ~~and~~ PCBs, mercury, and other pollutants.

The Permittees may comply with any requirement of this Provision through a collaborative effort.

**i. Green Infrastructure Program Plan Development**

Each Permittee shall:

(1) Prepare a framework ~~or workplan (i.e., a plan containing that describes specific tasks and timeframes)~~ for development of its Green Infrastructure Plan. ~~This and have the~~ framework ~~or workplan shall be~~ approved by the Permittee's governing body, mayor, city manager, or county manager ~~within 12 months of the Permit effective date by June 30, 2017~~. At a minimum, the ~~framework or workplan~~ shall include a statement of purpose, tasks, and timeframes to complete the elements listed in Provision C.3.j.i.(2) below, ~~and appropriately detailed descriptions regarding tools that have been selected or are proposed to be selected, the specific plans, policies, and specifications that are proposed to be updated, and, as appropriate, other related information.~~

~~(1)~~(2) Prepare a Green Infrastructure Plan, subject to Executive Officer approval, that contains the following elements:

- (a) A mechanism (e.g., SFEI's GreenPlanIT tool or another tool) to prioritize and map areas for potential and planned projects, both public and private, and planned projects, on a drainage-area-specific basis, for implementation over the following time schedules, which are consistent with the timeframes for assessing load reductions specified in Provisions C.11 and C.12:
- (i) ~~Within 2 years of the Permit effective date~~ By 2020;
  - (ii) ~~Within 7 years of the Permit effective date (5-year horizon)~~ By 2030; and
  - (iii) ~~Within 12 years of the Permit effective date (10-year horizon)~~ By 2040.

The mechanism shall include criteria for prioritization (e.g., specific logistical constraints, water quality drivers (e.g., TMDLs), opportunities to treat runoff from private parcels in retrofitted street right-of-way, ~~etc.~~) and outputs (e.g., maps, project lists, ~~etc.~~) that can be incorporated into the Permittees' s long-term planning and capital improvement processes.

- (b) Outputs from the mechanism described above, including, but not limited to, the prioritization criteria, maps, lists, and all other information, as appropriate. Individual project-specific reviews completed using these mechanisms are not required to be submitted with the Plan, but shall be made available upon request.

- (c) Targets for the amount of impervious surface, from public and private projects, within the Permittees' s jurisdiction to be retrofitted over the following time schedules, which are consistent with the timeframes for assessing load reductions specified in Provisions C.11 and C.12:
- (i) By 2020 Within 2 years of the Permit effective date;
  - (ii) By 2030 Within 7 years of the Permit effective date (5-year horizon); and
  - (iii) By 2040. Within 12 years of the Permit effective date (10-year horizon)
  - ~~(iv) Within 27 years of the Permit effective date (25-year horizon); and~~
  - ~~(v) Within 52 years of the Permit effective date (50-year horizon).~~
- (d) A process for tracking and mapping completed projects, public and private, and making the information publically available (e.g., SFEI's GreenPlanIT tool).
- (e) General guidelines for overall streetscape and project design and construction so that projects have a unified, complete design that implements the range of functions associated with the projects. For example, for streets, these functions include, but are not limited to, street use for stormwater management, including treatment, safe pedestrian travel, use as public space, for bicycle, transit, vehicle movement, and as locations for urban forestry. The guidelines should call for the Permittee to coordinate, for example, street improvement projects so that related improvements are constructed simultaneously to minimize conflicts that may impact green infrastructure.
- (f) Standard specifications and, as appropriate, typical design details and related information necessary for the Permittee to incorporate green infrastructure into projects in its jurisdiction. The specifications shall be sufficient to address the different street and project types within a Permittee's jurisdiction, as defined by land use and transportation characteristics.
- (g) Requirement(s) that projects be designed to meet the treatment and hydromodification sizing requirements in Provisions C.3.c. and C.3.d. For street projects not subject to Provision C.3.b.ii. (i.e., non-Regulated Projects), Permittees may, collectively, propose a single approach with their Green Infrastructure Plans for how to proceed should project constraints preclude fully meeting the C.3.d sizing requirements. The single Such an approach can include different options to address specific issues or scenarios. That is, the approach shall identify the specific constraints that would preclude meeting the sizing requirements and the design approach(es) to take in that situation. The approach should also, consider whether a broad effort to incorporate hydromodification controls into green infrastructure, even where not otherwise required, could significantly improve creek

health and whether such implementation may be appropriate, plus all other information, as appropriate (e.g., how to account for load reduction for the PCBs or mercury TMDLs).

- (h) A summary of the planning documents the Permittee has updated or otherwise modified to appropriately incorporate green infrastructure requirements, such as: General Plans, Specific Plans, Complete Streets Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, Flood Control or Flood Management Plans, and other plans that may affect the future alignment, configuration, or design of impervious surfaces within the Permittee's jurisdiction, including, but not limited to, streets, alleys, parking lots, sidewalks, plazas, roofs, and drainage infrastructure. Permittees are expected to complete these modifications as a part of completing the Green Infrastructure Plan, and by not later than the end of the permit term.
- (i) To the extent not addressed above, a workplan identifying how the Permittee will ensure that green infrastructure and low impact development measures are appropriately included in future plans (e.g., new or amended versions of the kinds of plans listed above).
- (j) A workplan to complete prioritized projects identified as part of a Provision C.3.e Alternative Compliance program or part of Provision C.3.j Early Implementation.
- (k) An evaluation of prioritized project funding options, including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, ~~state~~State, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.

~~(2)~~(3) Adopt policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this provision.

~~(3)~~(4) Conduct outreach and education in accordance with the following:

- (a) Conduct public outreach on the requirements of this provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.
- (b) Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this provision and methods of implementation.
- (c) Educate appropriate Permittee elected officials (e.g., mayors, city council members, ~~C~~county ~~S~~supervisors, ~~D~~district ~~B~~board ~~M~~members, ~~etc.~~) on the requirements of this provision and methods of implementation.

~~(4)~~(5) Report on Green Infrastructure Planning as follows:

- (a) Each Permittee shall submit documentation in the 2017 Annual Report that ~~the~~ its framework or workplan for development of its Green Infrastructure Plan was approved by its governing body, mayor, city manager, or county manager by June 30, 2017~~12 months after Permit effective date,~~ with the XX Annual Report.
- (b) Each Permittee shall submit its completed Green Infrastructure Plan with the 2019 Annual Report.
- (c) Each Permittee shall submit documentation of its legal mechanisms to ensure implementation of its Green Infrastructure Plan with the 2019 Annual Report.
- (d) Each Permittee shall submit a summary of its outreach and education efforts in each Annual Report.

**ii. Early Implementation of Green Infrastructure Projects (No Missed Opportunities)**

Each Permittee shall:

- (1) Prepare and maintain a list of green infrastructure projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for green infrastructure measures.
- (2) Submit the list with each Annual Report and a summary of planning or implementation status for each public green infrastructure project and each private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. ~~and Also include~~ Include a summary of how each public infrastructure project with green infrastructure potential ~~will be implemented~~ will include green infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where ~~Where~~ implementation of green infrastructure measures is not practicable, submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement.

**iii. Participate in Processes to Promote Green Infrastructure**

- (1) The Permittees shall, individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, Sstate, and federal agencies to plan, design, and fund incorporation of green infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.

- (2) In each Annual Report, Permittees shall report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote green infrastructure.
- (3) In the 2019 Annual Report, Permittees shall submit a plan and schedule for new and ongoing efforts to participate in processes to promote green infrastructure.

**iv. Tracking and Reporting Progress**

- (1) The Permittees shall, individually or collectively, develop and implement regionally-consistent methods to track and report implementation of green infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.
- (2) In each Annual Report, Permittees shall report progress on development and implementation of the tracking methods.
- (3) In the 2019 Annual Report, Permittees shall submit the tracking methods and report implementation of green infrastructure measures including treated area, and connected and disconnected impervious area on both public and private parcels within their jurisdictions.

**Table 3.1 Standard Tracking and Reporting Form for Potential Special Projects**

Project No.	Permittee	Address	Application Submittal Date	Description	Site Total Acreage	Gross Density DU/Ac	FAR	Special Project Category	LID Treatment Reduction Credit	Stormwater Treatment Systems

**Project No:** Number of the Special Project as it appears in Table 3.1

**Permittee:** Name of the Permittee in whose jurisdiction the Special Project will be built.

**Address:** Address of the Special Project; if no street address, state the cross streets.

**Submittal Date:** Date that a planning application for the Special Project was submitted; if a planning application has not been submitted, include a projected application submittal date.

**Description:** Type of project (commercial, mixed-use, residential), number of floors, number of units, type of parking, and other relevant information.

**Site Acreage:** Total site area in acres.

**Gross Density in DU/Ac:** Number of dwelling units per acre.

**FAR:** Floor Area Ratio

**Special Project Category:** For each Special Project Category, indicate applicability. If a Category is applicable, list the specific criteria applied to determine applicability.

**LID Treatment Reduction Credit:** For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit available. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits available.

**Stormwater Treatment Systems:** List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project’s drainage area that will be treated by each treatment system.

## C.4. Industrial and Commercial Site Controls

Each Permittee shall implement an industrial and commercial site control program at all sites that could reasonably be considered to cause or contribute to pollution of stormwater runoff. ~~Permittees shall conduct, with~~ inspections, effective follow-up, and enforcement to abate potential and actual non-stormwater discharges, consistent with each Permittee's respective Enforcement Response Plan. ~~These combined efforts, in order to will~~ prevent ~~the~~ discharge of pollutants and impacts to beneficial uses of receiving waters. Inspections shall confirm implementation of appropriate and effective BMPs and other pollutant controls by industrial and commercial site operators.

### C.4.a. Legal Authority for Effective Site Management

- i. **Task Description** – Permittees shall have sufficient legal authority to inspect, require effective stormwater pollutant control, and implement progressively stricter enforcement to achieve expedient compliance and pollutant abatement at commercial and industrial sites within their jurisdiction.
- ii. **Implementation Level** – Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and pollution abatement at all industrial and commercial sites which may be reasonably considered to cause or contribute to pollution of stormwater runoff. Permittees shall have the legal authority to require implementation of appropriate BMPs at industrial and commercial facilities to address pollutant sources associated with outdoor process and manufacturing areas; outdoor material storage areas; outdoor waste storage and disposal areas; outdoor vehicle and equipment storage and maintenance areas; outdoor parking areas and access roads; outdoor wash areas; outdoor drainage from indoor areas, rooftop equipment; and contaminated and erodible surface areas; and other sources determined by the Permittees or the Water Board Executive Officer to have a reasonable potential to contribute to pollution of stormwater runoff.

### C.4.b. Industrial and Commercial Business Inspection Plan (Inspection Plan)

- i. **Task Description** – Permittees shall continue to update and implement an Inspection Plan that will serve as a prioritized inspection workplan. This Inspection Plan will allow inspection staff to categorize the commercial and industrial sites within the Permittee's jurisdiction by pollutant threat and inspection frequency, change inspection frequency based on site performance, and add and remove sites as businesses open and close.
- ii. **Implementation Level**
  - (1) **Facilities For Prioritization Into Inspection Plan**

Commercial and industrial facilities with the functional aspects and types described below, and other facilities identified by the Permittees as ~~having the reasonable potential~~ reasonably likely to contribute to pollution of stormwater runoff, shall be prioritized for inspection on the basis of the potential for water quality impact using criteria such as pollutant sources on site, pollutants of concern, proximity to a waterbody, ~~violation~~

potential and actual discharge history of the facility, and other relevant factors. The following are some of the functional aspects of businesses and types of businesses that shall be included in the Inspection Plan:

- (a) Sites that include the following types of functions that may produce pollutants when exposed to stormwater include, but are not limited to:
  - Outdoor process and manufacturing areas
  - Outdoor material storage areas
  - Outdoor waste storage and disposal areas
  - Outdoor vehicle and equipment storage and maintenance areas
  - Outdoor wash areas
  - Outdoor drainage from indoor areas
  - Rooftop equipment
  - Other sources determined by the Permittee or Water Board ~~to have a reasonable potential~~ as reasonably likely to contribute to pollution of stormwater runoff.
- (b) The following types of industrial and commercial businesses that have a reasonable likelihood to be sources of pollutants to stormwater and non-stormwater discharges:
  - Industrial facilities, as defined at 40 CFR 122.26(b)(14), including those subject to the Statewide NPDES General Permit for Stormwater Discharges Associated with Industrial Activity (hereinafter the Industrial General Permit);
  - Vehicle Salvage yards;
  - Metal and other recycled materials collection facilities, and waste transfer facilities;
  - Vehicle mechanical repair, maintenance, fueling, or cleaning facilities;
  - Building trades central facilities or yards, corporation yards;
  - Nurseries and greenhouses;
  - Building material retailers and storage;
  - Plastic manufacturers; and
  - Other facilities designated by the Permittee or Water Board to ~~have a reasonable potential~~ be reasonably likely to contribute to pollution of stormwater runoff.
- (2) Inspection Plan – The Inspection Plan shall be updated annually and shall contain the following information:
  - (a) A description of the process for prioritizing inspections and frequency of inspections. The prioritization criteria shall assign a more frequent inspection schedule to the highest priority facilities per Provision C.4.b.ii.(1). If any geographical areas are to be targeted for inspections

- due to high potential for stormwater pollution, these areas should be indicated in the Inspection Plan.
- (b) Assign appropriate inspection frequency for each industrial and commercial facility based on the priority established in Provision C.4.b.ii.(2)(a) above, potential for contributing pollution to stormwater runoff, and commensurate with the threat to water quality.
  - (c) A mechanism to include newly ~~opened~~ businesses that warrant inspections.
  - (d) Total number and a list of all industrial and commercial facilities requiring inspections, within each Permittee's jurisdiction, based on the prioritization criteria established in Provision C.4.(b)ii.(2)(a). This list shall be updated annually.
  - (e) List of facilities scheduled for inspection each fiscal year of the MRP permit term. Each fiscal year's inspection list shall be added to the Inspection Plan at the beginning of the fiscal year as part of the annual update. Previous fiscal years' inspection lists shall remain in the Inspection Plan.
- (3) Record Keeping – For each facility identified in Provision C.4.b.ii.(2)(d), the Permittee shall maintain a database or equivalent tabular system of at least the following information:
- (a) Name and address of the business and local business operator;
  - (b) A brief description of business activity or pollutant source, including SIC code. Examples: outdoor process/manufacturing areas, outdoor material storage areas, outdoor waste storage and disposal areas, outdoor vehicle and equipment storage and maintenance areas, outdoor parking areas and access roads, outdoor wash areas, rooftop equipment, and outdoor drainage from indoor areas;
  - (c) Inspection priority and inspection frequency; and
  - (d) If coverage under the Industrial General Permit is required.
- iii. **Reporting** – The Permittees shall include the list of all industrial and commercial facilities requiring inspections identified in Provision C.4.b.ii.(2)(d) in each Annual Report.

#### **C.4.c. Enforcement Response Plan (ERP)**

- i. **Task Description** – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective compliance from all commercial and industrial site operators.
- ii. **Implementation Level** – The ERP shall contain the following:
  - (1) **Enforcement Procedures** – A description of the Permittee's procedures, from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, follow-up inspections, referrals to

- another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.
- (2) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to potential discharges (e.g., housekeeping issues, evidence of actual non-stormwater discharges, lack of ~~best management practices~~ ~~(BMPs)~~, inadequate BMPs, and inappropriate BMPs), actual non-stormwater discharges, non-compliance with previous enforcement actions, and sites with a history of potential and/or actual non-stormwater discharges.
  - (3) Timely Correction of Potential and Actual Non-stormwater Discharges – A description of the Permittee’s procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all potential and actual non-stormwater discharges. Permittees shall require active non-stormwater discharges to cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual non-stormwater discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business day are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.
  - (4) Referral and Coordination with Other Agencies – Each Permittee shall enforce its stormwater ordinances to achieve compliance at sites with observed potential and actual non-stormwater discharges required in Discharge Prohibition A.1. For cases in which Permittee enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney, or other relevant agencies for additional enforcement.

#### C.4.d. Inspections

- i. **Task Description** – Each Permittee shall conduct inspections according to the Inspection Plan in Provision C.4.b.ii.(2) and ~~the ERP Enforcement Response Plan~~ in Provision C.4.c.ii. to enforce its ordinance to prevent stormwater pollution.
- ii. **Implementation Level**
  - (1) Inspections – Inspections shall be conducted to include at least the following activities:
    - (a) Observations for appropriate BMPs to prevent stormwater runoff pollution or illicit discharge;
    - (b) Observations for evidence of unauthorized discharges, illicit connections, and potential discharge of pollutants to stormwater;
    - (c) Observations for noncompliance with Permittee ordinances and other local requirements; and

- (d) Verification of coverage under the Industrial General Permit, if applicable.
- (2) Record Keeping – Permittees shall maintain adequate records to demonstrate compliance and appropriate follow-up enforcement responses for facilities inspected. Permittees shall maintain an electronic database or equivalent tabular system that contains the following information regarding industrial and commercial site inspections:
  - (a) Name of facility/site inspected
  - (b) Inspection date
  - (c) Industrial General Permit coverage required (Yes or No)
  - (d) Compliance status
  - (e) Specific problems
  - (f) Type of enforcement (if applicable)
  - (g) Problem resolution date
  - (h) Additional commentsThe electronic database or equivalent tabular system shall be made readily available to Water Board staff or its representative during inspections and audits.
- (3) Data Evaluation – Permittees shall evaluate the frequency ~~and types~~ of potential and actual non-stormwater discharges by business category. Note trends and, as needed, implement focused inspections or education in subsequent years to address trends.

**iii. Reporting—**

- (1) Permittees shall include the following information in the 2015-2016 Annual Report:
  - (a) Number of inspections conducted, Number of violations issued (excluding verbal warnings), Percentage of sites inspected in violation, and number and percent of violations resolved within 10 working days or otherwise deemed resolved in a longer, but still timely manner;
  - (b) Frequency and types/categories of violations observed, Frequency and type of enforcement conducted;
  - (c) Summary of types of violations noted by business category; and
  - (d) Facilities that are required to have coverage under the Industrial General Permit, but have not filed for coverage.
- ~~(4)~~(2) Beginning with the 2016-2017 Annual Report, Permittees shall include the following information in each Annual Report:
  - (a) Number of inspections conducted;
  - (b) Number of each type of enforcement action, as listed in each Permittee’s ERP, issued;

- ~~(c)~~ Number of enforcement actions or discreet number of potential and actual discharges fully resolved within 10 working days or otherwise deemed resolved in a longer, but still timely manner;
- ~~(e)~~~~(d)~~ Frequency of potential and actual non-stormwater discharges by business category; and
- ~~(d)~~~~(e)~~ A list of facilities that are required to have coverage under the Industrial General Permit, but have not filed for coverage.

**C.4.e. Staff Training**

- i. **Task Description** – Permittees shall provide focused training for industrial and commercial site inspectors and illicit discharge detection and elimination inspectors annually. Trainings may be ~~P~~program-wide, ~~R~~region-wide, or Permittee-specific.
- ii. **Implementation Level** – At a minimum, provide inspection training, within the 5-year term of this Permit, in the following topics:
  - (1) Urban runoff pollution prevention;
  - (2) Inspection procedures;
  - (3) Business Inspection Plan;
  - (4) Enforcement Response Plan;
  - (5) Illicit Discharge Detection and Elimination; and
  - (6) Appropriate BMPs to be used at different industrial and commercial facilities.
- iii. **Reporting** – The Permittees shall include the following information in each Annual Report:
  - (1) Dates of training;
  - (2) Training topics covered;
  - (3) Percentage of industrial and commercial site inspectors attending training; and
  - (4) Percentage of Illicit Discharge, Detection, and Elimination inspectors attending training.

## C.5. Illicit Discharge Detection and Elimination

The purpose of this provision is to implement the illicit discharge prohibition and to ensure illicit discharges are detected and controlled that are not otherwise controlled under provisions C.4. – Industrial and Commercial Site Controls and C.6. – Construction Site Controls. Permittees shall implement an illicit discharge program that includes an active surveillance component and a centralized complaint collection and follow-up component to ~~target-detect and eliminate~~ illicit discharges ~~and non-stormwater sources into the MS4~~. Permittees shall maintain a complaint tracking and follow-up data system as their primary accountability reporting for this provision.

### C.5.a. Legal Authority

- i. **Task Description** – Permittees shall have the legal authority to prohibit and control illicit discharges and implement progressively stricter enforcement to achieve expedient compliance.
- ii. **Implementation Level**
  - (1) Permittees shall have adequate legal authority to address illicit discharges ~~to the storm drain system~~MS4, including, but not limited to, the following:
    - (a) Sewage ~~(except those already reported to the Water Board through the California Integrated Water Quality System Project)~~;
    - (b) Discharges of wash water resulting from the cleaning of exterior surfaces and pavement, or the equipment and other facilities of any commercial business, or any other public or private facility, including discharges from mobile cleaning businesses;
    - (c) Discharges of runoff from material storage areas, including those containing chemicals, fuels, or other potentially polluting or hazardous materials;
    - (d) Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;
    - (e) Discharges of sediment, pet waste, vegetation clippings, or other landscape or construction-related wastes; and
    - (f) Discharges of food-related wastes (e.g., grease, fish processing wastes, restaurant kitchen mat and trash bin wash water, ~~etc.~~).
  - (2) Permittees shall have adequate legal authority to prohibit, discover through inspection and surveillance, and eliminate illicit connections and discharges to ~~the storm drains~~MS4.
  - (3) Permittees shall have adequate legal authority to control the discharge of spills, dumping, or disposal of materials other than storm water to ~~the storm drains~~MS4.

### C.5.b. Enforcement Response Plan (ERP)

- i. **Task Description** – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective abatement of illicit discharges and compliance from responsible parties.
- ii. **Implementation Level** – The ERP shall contain the following:
  - (1) **Enforcement Procedures** – A description of the Permittee’s procedures from the discovery of a problem through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, follow-up inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.
  - (2) **Enforcement Tools and Field Scenarios** – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to potential discharges (e.g., housekeeping issues, evidence of actual discharges, lack of ~~Best Management Practices (BMPs)~~, inadequate BMPs, and inappropriate BMPs), actual discharges, non-compliance with previous enforcement actions, and sites with a history of potential and/or actual discharges.
  - (3) **Timely Correction of Potential and Actual Discharges** – A description of the Permittee’s procedures for assigning due dates for corrective actions. Each Permittee shall require timely correction of all potential and/or actual discharges. Active discharges shall be required to cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

**C.5.c. Spill~~and~~, Dumping, ~~and~~ Complaint Response Program**

- i. **Task Description** – Each Permittee shall implement a program to respond to spills, ~~and~~ dumping, ~~and~~ complaints ~~response program~~.
- ii. **Implementation Level**
  - (1) Each Permittee shall have a central contact point for the public and Permittee’s staff to report spills, ~~and~~ dumping, ~~and~~ complaints. At a minimum, this central contact point shall include a phone number. Permittee shall also include, as feasible, user friendly web reporting for spills and dumping.
  - (2) Each Permittee shall publicize the phone number and web reporting address, if used, to internal Permittee’s staff and the public. The Permittee’s website shall be one of the places the central contact point is publicized. The Permittee’s website shall be updated with the central

contact point to report spills and dumping by June 30, 2016. This central contact point shall be readily searchable on the Permittee's website.

- (3) Each Permittee shall require its municipal staff conducting routine maintenance and inspection activities to report illicit discharges found during their activities to the central contact point so that illicit discharge staff can investigate and track.
- (4) Each Permittee shall maintain and update, as needed, a spill, ~~and~~ dumping, ~~and complaint~~ response flow chart and/or phone tree for the Permittee's staff responsible for the spill and dumping response program. At a minimum, this flow chart and/or phone tree shall identify staff or positions responsible for receiving the complaints and investigating and abating the complaints.
- (5) Each Permittee shall maintain and update, as needed, a spill, ~~and~~ dumping, ~~and complaint~~ response flow chart and phone tree or contact list for internal use that shows the various responsible agencies and their contacts, who would be involved in illicit discharge incident response that goes beyond the Permittee's immediate capabilities.
- (6) Each Permittee shall conduct reactive inspections in response to spill, ~~and~~ dumping, ~~and complaint~~ reports and shall also conduct follow-up inspections, as needed, to ensure that corrective measures have been effectively implemented to achieve and maintain compliance.

**iii. Reporting** – Permittees shall provide the following information in the 2016 and 2020 Annual Reports:

- (1) The spill and dumping reporting phone number and the web address, if used;
- (2) A screen shot of the Permittee's website showing the central contact point; and
- (3) A discussion of how the central contact point – spill and dumping reporting phone number and, if used, the web address – is being publicized to Permittees' staff and the public.

**C.5.d. Tracking and Case Follow-up**

- i. Task Description** – All incidents or discharges reported to the spill, ~~and~~ dumping, ~~and complaints~~ central contact point, that might ~~discharge into the MS4 pose a threat to water quality~~, shall be logged to track follow-up and response through problem resolution. The data collected shall be sufficient to demonstrate escalating responses for repeated problems and inter/intra-agency coordination, where appropriate. ~~It is not necessary to track and report data according to this provision if they are tracked and reported to the Water Board under another permit (e.g., sanitary sewer overflows reported according to State Water Resource Control Board Order No. 2006-0003-DWQ).~~

- ii. **Implementation Level** – Maintain a water quality spills, ~~and~~ dumping, ~~and~~ complaints tracking and follow-up in an electronic database or equivalent tabular system.

The spill and discharge complaint tracking system shall contain the following information:

- (1) Complaint information:
  - (a) Date and time of complaint.
  - (b) Type of pollutant, and
  - (c) Problem Status (potential or actual discharge).
- (2) Investigation information:
  - (a) Date and time started.
  - (b) Type of pollutant.
  - (c) Entered storm drain and/or receiving water,
  - (d) Date and time abated, and
  - (e) Type of enforcement based on the Permittee's ERP.

The electronic database or equivalent tabular system shall be made available to Water Board staff or representatives during audits or inspections.

- iii. **Reporting** – Permittees shall provide the following information in the Annual Report:

- (1) Number of discharges reported;
- (2) Number of discharges reaching storm drains and/or receiving waters; and
- (3) Number discharges resolved in a timely manner.

#### C.5.e. Control of Mobile Sources

- i. **Task Description** – Permittees shall have oversight and control of pollutants associated with mobile businesses ~~es~~ sources.
- ii. **Implementation Level** – Each Permittee shall implement a program to reduce the discharge of pollutants from mobile businesses.
- (1) The program shall include the following:
    - (a) Implementation of minimum standards and BMPs for each of the various types of mobile businesses, such as automobile washing, power washing, steam cleaning, and carpet cleaning.
    - (b) Implementation of an enforcement strategy that specifically addresses the unique characteristics of mobile businesses.
    - (c) Regularly updating mobile business inventories.
    - (d) Implementation of an outreach and education strategy to mobile businesses operating within the Permittee's jurisdiction.
    - (e) Inspection of mobile businesses, as needed.

- (2) Permittees ~~should~~may cooperate county-wide and/or region-wide with the implementation of their programs for mobile businesses, including sharing of mobile business inventories, BMP requirements, enforcement action information, and education.

### iii. Reporting

- (1) In the ~~2016-2017~~ Annual Report, each Permittee shall provide the following: (a) minimum standards and BMPs for each of the various types of mobile businesses; (b) its enforcement strategy; (c) a list and summary of the specific outreach events and education conducted to the different types of mobile businesses operating within the Permittee's jurisdiction; (d) the number of inspections conducted at mobile ~~cleaners'~~ businesses and/or job sites in ~~2015-2016-2016-2017~~; (e) discuss enforcement actions taken against mobile businesses in ~~2015-2016-2016-2017~~; (f) ~~a list of Permittee's inventory of~~ mobile cleaners businesses operating within the Permittee's jurisdiction; and (g) a list and summary of the county-wide or regional activities conducted, including sharing of mobile business inventories, BMP requirements, enforcement action information, and education (Permittees' annual reports may refer to the county-wide or regional reports for this information.).
- (2) In the 2019 Annual Report, each Permittee shall include at least the following: (a) changes to minimum standards and BMPs for each of the various types of mobile businesses since the ~~2016-2017~~ Annual Report; (b) changes to the Permittee's enforcement strategy; (c) minimum standards and BMPs developed for additional types of mobile businesses; (d) a list and summary of specific outreach events and education conducted to each type of mobile businesses operating within the Permittee's jurisdiction during the Permit term; (e) a discussion of the inspections conducted at mobile ~~cleaners'~~ businesses and/or job sites; (f) ~~a list of Permittee's inventory of~~ mobile businesses operating within the Permittee's jurisdiction; and (g) a discussion of the enforcement actions taken against mobile businesses during the permit term.

#### C.5.f. Municipal Separate Storm Sewer System (MS4) Map

- i. **Task Description** – Each Permittee shall make the map(s) of its MS4 available.
- ii. **Implementation Level** – Permittees shall make maps of the MS4 publicly available, either electronically or in hard copy. Public availability shall be made through a single point of contact that is convenient for the public, such as a staffed counter or web accessible maps. The MS4 map availability shall be publicized through Permittee directories and web pages.
- iii. **Reporting** – In the 2016 and 2019 Annual Reports, Permittees shall discuss how they make MS4 maps available to the public and how they publicize the availability of the MS4 maps.

## C.6. Construction Site Control

Each Permittee shall implement a construction site inspection and control program at all construction sites, with follow-up and enforcement consistent with each Permittee's respective ~~Enforcement Response Plan (ERP)~~, to prevent construction site discharges of pollutants ~~into the storm drains and adverse impacts to beneficial uses of receiving waters~~. Inspections shall confirm implementation of appropriate and effective erosion and other construction pollutant controls by construction site operators/developers. Each Permittee shall in its reporting demonstrate the effectiveness of its inspections and enforcement activities to prevent polluted construction site discharges into storm drains.

### C.6.a. Legal Authority for Effective Site Management

- i. **Task Description** – Permittees shall have the ability to require effective stormwater pollutant controls to prevent discharge of pollutants into the storm drains, and implement progressively stricter enforcement to achieve expedient compliance and cleanup at all public and private construction sites.
- ii. **Implementation Level**
  - (1) Permittees shall have the legal authority to require at all construction sites year-round effective erosion control, run-on and runoff control, sediment control, active treatment systems (as appropriate), good site management, and non-storm water management through all phases of construction (including, but not limited to, site grading, building, and finishing of lots) until the site is fully stabilized by landscaping or the installation of permanent erosion control measures.
  - (2) Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and cleanup at all construction sites year-round.

### C.6.b. Enforcement Response Plan (ERP)

- i. **Task Description** – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective compliance at all public and private construction sites.
- ii. **Implementation Level** – The ERP shall contain the following:
  - (1) **Enforcement Procedures** – A description of the Permittee's procedures from the discovery of the problems through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, follow-up inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.
  - (2) **Enforcement Tools and Field Scenarios** – A discussion of the various, escalating enforcement tools for different field scenarios, including, but

not limited to, potential discharges (e.g., housekeeping issues, evidence of actual discharges, lack of ~~Enforcement Response Plan (ERP)~~, inadequate BMPs, and inappropriate BMPs), actual discharges, non-compliance with previous enforcement actions, and sites with a history of potential and/or actual discharges.

- (3) Timely Correction of Potential and Actual Discharges – A description of the Permittee’s procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all potential and actual discharges. Permittees shall require actual non-stormwater discharges to cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

### C.6.c. Best Management Practices Categories

- i. **Task Description** – Permittees shall require all construction sites to have site-specific, and seasonally and phase-appropriate, effective ~~Best Management Practices (BMPs)~~ in the following six categories:

- Erosion Control
- Run-on and Run-off Control
- Sediment Control
- Active Treatment Systems, as necessary
- Good Site Management
- Non-Stormwater Management.

- ii. **Implementation Level**

The BMPs targeting specific construction site pollutants within the six categories listed in C.6.c.i. shall be site-specific. Site-specific BMPs targeting specific pollutants from the six categories listed in C.6.c.i. may be a combination of BMPs from:

- CASQA, BMP Handbook, Construction, January 2009.
- Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices Manual, March 2003, and addenda.
- New BMPs available since the release of these ~~H~~handbooks.
- Other BMPs shown to provide equivalent protection.

### C.6.d. Plan Approval Process

- i. **Task Description** – Permittees shall review erosion control plans for consistency with local requirements and the appropriateness and adequacy of proposed BMPs for each site before issuance of grading permits for projects. Permittees shall also verify that sites disturbing one acre or more of land have

~~filed a Notice of Intent for permit~~~~obtained~~ coverage under the Construction General Permit.

- ii. **Implementation Level** – Before approval and issuance of local grading permits, each Permittee shall perform the following:
- (1) Review the site operator's/developer's erosion/pollution control plan or Stormwater Pollution Prevention Plan (SWPPP) to verify compliance with the Permittee's grading ordinance and other local requirements. Also review the site operator's/developer's erosion/pollution control plan or SWPPP to verify that seasonally appropriate and effective BMPs for the six categories listed in C.6.c.i. are planned;
  - (2) For sites disturbing one acre or more of soil, verify that the site operators/developers have ~~filed a Notice of Intent for permit~~ ~~obtained~~ coverage under the Construction General Permit; and
  - (3) Provide construction stormwater management educational materials to site operators/developers, as appropriate.

#### C.6.e. Inspections

- i. **Task Description** – Permittees shall conduct inspections to determine compliance with local ordinances (grading and stormwater) and determine the effectiveness of the BMPs in the six categories listed in C.6.c.i. ~~in preventing the discharge of construction pollutants into the storm drain~~; and Permittees shall require timely corrections of all actual and ~~threatened violations~~~~potential discharges of local ordinances~~ observed.

ii. **Implementation Level**

- (1) **Wet Season Notification**  
By September 1~~st~~ of each year, each Permittee shall remind all site developers and/or owners disturbing one acre or more of soil, ~~hillside projects, and high priority sites~~ to prepare for the upcoming wet season.
- (2) **Frequency of Inspections**  
Inspections shall be conducted monthly during the wet season<sup>13</sup> at the following sites:
  - (a) All construction sites disturbing one or more acre of land;~~and~~
  - (b) All hillside projects<sup>14</sup> (based on the Permittee's map of hillside development areas or criteria, or if the Permittee does not have a map of hillside development areas or criteria, those projects on sites with  $\geq 15\%$  slope) disturbing greater than or equal to 5,000 square feet; and

<sup>13</sup> For the purpose of inspections, the wet season is defined as October through April, but sites need to implement seasonally appropriate BMPs in the six categories listed in C.6.c.i throughout the year.

<sup>14</sup> ~~Effective July 1, 2016.~~

- (c) High Priority Sites – Other sites determined by the Permittee or the Water Board as significant threats to water quality. In evaluating threat to water quality, the following factors shall be considered:
  - (i) Soil erosion potential or soil type;
  - (ii) Site slope;
  - (iii) Project size and type;
  - (iv) Sensitivity or receiving waterbodies;
  - (v) Proximity to receiving waterbodies;
  - (vi) Non-stormwater discharges; and
  - (vii) Any other relevant factors as determined by the local agency or the Water Board.

(3) **Contents of Inspections**

Inspections shall focus on the adequacy and effectiveness of the site-specific BMPs implemented for the six categories listed in C.6.c.i. Permittees shall require timely corrections of all actual and potential problems observed. Inspections of construction sites shall include, but are not limited to, the following:

- (a) Assessment of compliance with Permittee's ordinances and permits related to urban runoff, including the implementation and maintenance of the verified erosion/pollution control plan or SWPPP (from C.6.d.ii.(1));
- (b) Assessment of the adequacy and effectiveness of the site-specific BMPs implemented for the six categories listed in C.6.c.i.;
- (c) Visual observations for:
  - actual discharges of sediment and/or construction related materials into storm drains and/or waterbodies.
  - evidence of sediment and/or construction related materials discharges into storm drains and/or waterbodies.
  - illicit connections~~=and~~
  - potential illicit connections.
- (d) Education on stormwater pollution prevention, as needed.

(4) **Tracking**

All inspections shall be recorded on a written or electronic inspection form. Inspectors shall follow the ERP for all actual and potential discharges discovered during the inspection.

Permittees shall track in an electronic database or tabular format all inspections. This electronic database or tabular format shall be made readily available during inspections and audits by the Water Board staff or its representatives. This electronic database or tabular format shall record the following information for each site inspection:

- (a) Site name;

- (b) Inspection date;
- (c) Weather during inspection;
- (d) Enforcement Response Level (Use ERP);
- (e) Problem(s) observed using Illicit Discharge and the six BMP categories listed in C.6.c.i.;
- (f) Resolution of Problems noted using the following three standardized categories: Problems Fixed, Need More Time, and Escalate Enforcement; and
- (g) Comments, which shall include all Rationales for Longer Compliance Time, all escalation in enforcement discussions, and any other information that may be relevant to that site inspection.

### iii. Reporting

- (1) In the 2016 Annual Report, each Permittee shall certify the criteria it uses to determine hillside developments. If the Permittee is using maps of hillside developments areas or other written criteria, include a copy in the Annual Report.
- (2) In the 2015-2016 Annual Report, each Permittee shall summarize the following information:
  - (a) Total number of active sites disturbing less than one acre of soil requiring inspection;
  - (b) Total number of active sites disturbing ~~one~~ acre or more of soil;
  - (c) Total number of inspections conducted;
  - (d) Number and percentage<sup>15</sup> of violations in each of the six categories listed in C.6.c.i.;
  - (e) Number and percentage<sup>16</sup> of each type of enforcement action taken as listed in each Permittee's ERP;
  - (f) Number of discharges, actual and those inferred through evidence, of sediment or other construction related materials;
  - (g) Number of sites with discharges, actual and those inferred through evidence, of sediment or other construction related materials;
  - (h) Number and percentage<sup>17</sup> of violations fully corrected prior to the next rain event but no longer than 10 business days after the violations are discovered or otherwise considered in a timely, though longer period; and

<sup>15</sup> Percentage shall be calculated as number of violations in each category divided by total number of violations in all six categories.

<sup>16</sup> Percentage shall be calculated as number of each type of enforcement action divided by the total number of enforcement actions.

<sup>17</sup> Percentage shall be calculated as follows: number of violations fully corrected prior to the goal of the next rain event but no later than 10 business days after the violations are discovered divided by the total number of violations for the reporting year.

(i) Number and percentage<sup>18</sup> of violations not fully corrected 30 days after the violations are discovered.

~~(2)(3)~~In each Beginning with the 2016-2017 Annual Report, each Permittee shall summarize the following information:

- (a) Total number of active hillside sites disturbing less than one acre of soil requiring inspection;
- (b) Total number of active sites disturbing 1 acre or more of soil;
- (c) Total number of active sites disturbing less than one acre of soil identified as High Priority sites in C.6.e.ii.(2)(c) requiring inspections;
- (d) Total number of inspections conducted;
- (e) Number of each type of enforcement action taken as listed in each Permittee's ERP;
- (f) Number of illicit discharges, actual and those inferred through evidence, of sediment or other construction-related materials;
- (g) Number of ~~violations-enforcement actions or discrete~~ discrete number of potential and actual discharges fully corrected prior to the next rain event, but no longer than 10 business days after the ~~violations~~ potential and actual discharges<sup>19</sup> are discovered or otherwise considered corrected in a timely, though longer periods, ~~and~~

~~(3)(4)~~In each Annual Report, each Permittee shall evaluate its respective electronic database or tabular format and the summaries produced in C.6.e.ii.(4) above. This evaluation shall include findings on the program's strength, comparison to previous years' results, as well as areas that need more focused education for site owners, operators, and developers the following year.

~~(4)(5)~~The Executive Officer may require that the information recorded and tracked by C.6.e.ii.(4) be submitted electronically or in a tabular format. Permittees shall submit the information within 10 working days of the Executive Officer's requirement. Submittal of the information in tabular form for the reporting year is not required in each Annual Report, but it is encouraged.

#### C.6.f. Staff Training

- i. **Task Description** – Permittees shall provide training or access to training for staff conducting construction stormwater inspections.
- ii. **Implementation Level** – Permittees shall provide training at least every other year to municipal staff responsible for conducting construction site stormwater inspections. Training topics shall include information on correct uses of specific

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<sup>18</sup> Percentage shall be calculated as follows: number of violations not fully corrected 30 days after the violations are discovered divided by the total number of violations for the reporting year.

<sup>19</sup> Permittees who track by discrete potential and actual discharges shall report by discrete discharges. Permittees who track by enforcement actions shall report by enforcement actions.

BMPs, proper installation and maintenance of BMPs, Permit requirements, local requirements, and the ERP.

- iii. **Reporting** – Permittees shall include in each Annual Report the following information: training topics covered, dates of training, and the number of the Permittees’ inspectors attending each training. If there was no training in that year, so state.

## C.7. Public Information and Outreach

Each Permittee shall increase the ~~knowledge~~awareness of a broad spectrum of the community, including a diversity of socioeconomic groups and ethnic communities, regarding the impacts of stormwater pollution on receiving waters and potential solutions to mitigate the problems caused; ~~change-positively influence~~ the waste disposal and runoff pollution generation behavior of target audiences by encouraging implementation of appropriate solutions; and involve various citizens in mitigating the impacts of stormwater pollution. Outreach required in ~~Provision C.9~~other provisions may be conducted under Provision C.7.

### C.7.a. Storm Drain Inlet Marking

- i. **Task Description** – Permittees shall mark and maintain municipally-maintained storm drain inlets with an appropriate stormwater pollution prevention message, such as “No dumping, drains to Bay” or equivalent. For newly ~~approved~~, privately maintained streets, Permittees shall require storm drain inlet markings with an appropriate stormwater pollution prevention message by the project developer upon construction and maintenance of markings through the development maintenance entity. Markings on the storm drain inlets shall be verified prior to acceptance of the project.
- ii. **Implementation Level**
  - (1) Inspect and maintain storm drain inlet markings of at least 80 percent of municipality-maintained inlets to ensure they are legibly labeled with a no dumping message or equivalent once per permit term.
  - (2) Storm drain inlet markings of newly developed privately-maintained streets shall be verified prior to acceptance of the project. Permittees shall require maintenance of the storm drain inlet markings through the development maintenance entity.
- iii. **Reporting** – In the 2020 Annual Report, each Permittee shall (1) state how many municipally-maintained storm drain inlets it has, (2) certify that at least 80 percent of municipality-maintained storm drain inlet markings are legibly labeled with an appropriate stormwater pollution prevention message during the permit term; (3) include a picture of a labeled municipality-maintained inlet; and (4) certify that all privately-maintained streets ~~that did not trigger the exemptions in Provision C.3.e.ii.~~ had storm drain inlet markings verified prior to acceptance of the project and were required to maintain the storm drain inlet markings through the development maintenance entity.

### C.7.b. ~~Advertising Outreach~~ Campaigns

- i. **Task Description** – Permittees shall continue to participate in or contribute to advertising outreach campaigns, with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in target audiences.

**ii. Implementation Level**

- (1) Target a broad audience with ~~two separate~~ minimum of one advertising outreach campaign with specific stormwater runoff pollution prevention messages. ~~At least one campaign must be focused on reducing trash/litter in waterways. The outreach campaign(s) should utilize various electronic and print media, and paid and free media to best reach the different target audiences.~~ The ~~outreach~~ advertising campaign(s) may be coordinated regionally or county-wide.
- (2) Permittees shall conduct a post-campaign survey effectiveness assessment/evaluation to identify and quantify the audiences' knowledge, trends, and attitudes and/or practices; and to measure the overall population's awareness of the messages and behavior changes achieved by the ~~two advertising outreach~~ campaigns. Survey Effectiveness assessment/evaluation may be done regionally or county-wide.

**iii. Reporting** – In the Annual Report following the post-campaign ~~survey effectiveness assessment/evaluation~~, each Permittee (or the Countywide Program, if ~~survey the effectiveness assessment/evaluation~~ was done county-wide or the regional program, if the effectiveness assessment/evaluation was done regionally) shall provide a report of the effectiveness assessment/evaluation survey completed, which, at minimum, shall include the following:

- (1) A description of the outreach campaign.
- ~~(1)~~(2) A summary of how the effectiveness assessment/evaluation survey was implemented.
- ~~(2)~~ A copy of the survey.
- ~~(3)~~ A copy of the survey results.
- ~~(4)~~(3) An analysis of the effectiveness assessment/evaluation survey results.
- ~~(5)~~(4) A discussion of the measurable changes in awareness and behavior achieved.
- ~~(6)~~(5) A discussion of the planned or future advertising outreach campaigns to influence awareness and behavior changes regarding ~~trash/litter and other stormwater runoff~~ pollution prevention messages ~~topics~~.

**~~C.7.c. Media Use of Free Media~~**

**~~i. Task Description~~** ~~Permittees shall participate in or contribute to a media relations campaign. Maximize use of free media/media coverage with the objective of significantly increasing the overall awareness of stormwater pollution prevention messages and associated behavior change in target audiences, and to achieve public goals.~~

~~ii. **Implementation Level**—Conduct a minimum of six pitches (e.g., press releases, public service announcements, social media, and/or other means) per year at the county wide program, regional, and/or local levels.~~

~~iii.iv. **Reporting**—In each Annual Report, each Permittee (or the Countywide Program, if the media relations campaign was done county wide or regionally) shall include the details of each media pitch, such as the medium, date, and content of the pitch.~~

~~C.7.d.~~C.7.c. **Stormwater Pollution Prevention Education**

i. **Task Description** – Permittees shall continue to maintain a point of contact to provide the public with stormwater pollution prevention information.

ii. **Implementation Level**

(1) Each Permittee shall maintain and publicize one point of contact for information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives. This point of contact can be maintained individually or collectively and Permittees may combine this function with the spill and dumping complaint central contact point required in C.5.

(2) Each Permittee shall place and maintain information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives on its website. In lieu of posting the detailed informational pages directly on their individual websites, Permittees may choose to provide links from their websites to the countywide program’s and/or BASMAA’s websites. Each Permittee shall publicize its website.

iii. **Reporting** – In the 2016 Annual Report, each Permittee shall list the point of contact, discuss how this point of contact and stormwater pollution website are publicized and maintained, and certify that it has a website dedicated to providing and maintaining information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives.

~~C.7.e.~~C.7.d. **Public Outreach and Citizen Involvement Events**

i. **Task Description** – Public outreach shall include a variety of pollution prevention message such as car washing; proper use, storage and disposal of vehicle waste fluids; household waste materials disposal; pesticide use; and trash. Public outreach events may include venues such as fairs, shows, and workshops. Citizen involvement events may include venues such as creek/shore clean-ups, adopt-an-inlet/creek/beach programs, volunteer monitoring, storm drain inlet marking, riparian restoration activities, community grants.

ii. **Implementation Level** – Each Permittee shall annually participate and/or host a mix of public outreach and citizen involvement events (~~The number of citizen involvement events shall be equal to or greater than the number of public outreach events~~) according to its population, as shown in the table below:

**Table 7.1 Public Outreach and Citizen Involvement Events<sup>20</sup>**

Permittee Population	Number of Events
< 10,000	2
10,001– 40,000	4
40,001 – 100,000	5
100,001 – 175,000	7
175,001 – 250,000	8
> 250,000	10
Non-population-based Permittees <sup>21</sup>	6

- iii. **Reporting** – In each Annual Report, each Permittee shall list the events (name of event, event location, and event date) participated in; identity whether the event is public outreach or citizen involvement; and assess the effectiveness of efforts with appropriate measures (e.g., success at reaching a broad spectrum of the community, number of participants compared to previous years, post-event [survey effectiveness assessment/evaluation](#) results, quantity/volume of materials cleaned up and comparisons to previous efforts).

**C.7.f.C.7.e. Watershed Stewardship Collaborative Efforts**

- i. **Task Description** – Permittees shall individually or collectively encourage and support watershed stewardship collaborative efforts of community groups such as the Contra Costa Watershed Forum, the Santa Clara Basin Watershed Management Initiative, “friends of creek” groups, and other organizations that benefit the health of the watershed, such as the Bay-Friendly Landscaping and Gardening Coalition. If no such organizations exist, encourage and support development of grassroots watershed groups or engagement of an existing group, such as a neighborhood association, in watershed stewardship activities. Coordinate with existing groups to further stewardship efforts.
- ii. **Implementation Level** – Annually demonstrate effort.
- iii. **Reporting** – In each Annual Report, each Permittee shall state the level of effort, describe the support given, state what efforts were undertaken and the results of these efforts, and provide an evaluation of the effectiveness of these efforts.

**C.7.g.C.7.f. School-Age Children Outreach**

- i. **Task Description** – Permittees shall individually or collectively implement outreach activities designed to increase awareness of stormwater and/or watershed message(s) in school-age children (K through 12).

<sup>20</sup> Permittees may claim individual credits for all events in which their Countywide Program or BASMAA participates, supports, and/or hosts, which are publicized to reach the Permittee’s jurisdiction.

<sup>21</sup> Alameda County Flood Control and Water Conservation District, Contra Costa Flood Control and Water Conservation District, Santa Clara Valley Water District, Vallejo Sanitation and Flood Control District, and Zone 7 of the Alameda County Flood Control and Water Conservation District

- ii. **Implementation Level** – Implement annually and demonstrate effectiveness of efforts through assessment.
- iii. **Reporting** – In each Annual Report, each Permittee shall state the level of effort, spectrum of children reached, and methods used, and provide an evaluation of the effectiveness of these efforts.

**C.7.h.C.7.g. Outreach to Municipal Officials**

- i. **Task Description** – Permittees shall conduct outreach to municipal officials. One alternative means of accomplishing this is through the use of the Nonpoint Education for Municipal Officials program (NEMO) to significantly increase overall awareness of stormwater and/or watershed message(s) among regional municipal officials.
- ii. **Implementation Level** – At least once per permit cycle, or more often.
- iii. **Reporting** – Permittees shall summarize efforts in the 2020 Annual Report.

## C.8. Water Quality Monitoring

### C.8.a. Compliance Options

All Permittees shall comply with all the monitoring requirements in this Provision. Permittees may choose any of the following mechanisms, or a combination of these mechanisms, to meet the monitoring requirements:

- i. **Regional Collaboration.** Permittees are encouraged to continue contributing to the Regional Monitoring Collaborative (RMC), which coordinates water quality monitoring conducted by all the Permittees. Permittees are encouraged to consider and assign additional duties to the RMC for purposes of increased efficiencies, particularly, but not limited to, reporting duties.
- ii. **Area-wide Stormwater Program.** Permittees may contribute to their countywide or area-wide Stormwater Program, so that the Stormwater Program conducts monitoring on behalf of its members.
- iii. **Third-party Monitoring.** Permittees may use data collected by a third-party organization, such as the Water Board or Department of Pesticide Regulation, to fulfill a monitoring requirement, provided the data are demonstrated to meet the data quality objectives described in Provision C.8.b.

### C.8.b. Monitoring Protocols and Data Quality

Where applicable, monitoring data must be Surface Water Ambient Monitoring Program (SWAMP) comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Project Plan (QAPrP) for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent SWAMP Standard Operating Procedures.

### C.8.c. San Francisco Estuary Receiving Water Monitoring

With limited exceptions, urban runoff from the Permittees' jurisdictions ultimately discharges to the San Francisco Estuary. Monitoring of the Estuary is intended to answer questions<sup>22</sup> such as:

- Are chemical concentrations in the Estuary potentially at levels of potential concern and are associated impacts likely?
- What are the concentrations and masses of contaminants in the Estuary and its segments?
- What are the sources, pathways, loadings, and processes leading to contaminant related impacts in the Estuary?
- Have the concentrations, masses, and associated impacts of contaminants in the Estuary increased or decreased?

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<sup>22</sup> <http://www.sfei.org/rmp/objectives> (9/15/2014). While the stated objectives may change over time, the intent of this provision is for Permittees to continue contributing financially and as stakeholders in such a program as the RMP, which monitors the quality of San Francisco Bay.

- What are the projected concentrations, masses, and associated impacts of contaminants in the Estuary?

The Permittees shall participate in implementing an Estuary receiving water monitoring program, at a minimum equivalent to the San Francisco Estuary Regional Monitoring Program by contributing their fair-share financially on an annual basis.

#### **C.8.d. Creek Status Monitoring**

Creek status monitoring is intended to assess the chemical, physical, and biological impacts of urban runoff on receiving waters. In particular, the monitoring required by this provision is intended to answer the following questions:

- Are water quality objectives, both numeric and narrative, being met in local receiving waters, including creeks, rivers and tributaries?
- Are conditions in local receiving waters supportive of or likely to be supportive of beneficial uses?

##### **i. Biological Assessment including Nutrients and General Water Quality Parameters**

- (1) Field and Laboratory Method – The Permittees shall conduct biological assessments (also referred to herein as bioassessments) in accordance with SWAMP Standard Operating Procedures<sup>23,24,25</sup> and shall include collection and reporting of in-stream biological and physical habitat data according to the *SWAMP Standard Operating Procedures for Bioassessment*,<sup>3</sup> including benthic algae, benthic macroinvertebrates, water chemistry, and full characterization of physical habitat. The bioassessment sampling method shall be multihabitat reach-wide. For algae, the assessment shall include all analytes in the protocol, including diatom and soft algae taxonomy, biomass (ash-free dry weight), chlorophyll a, pebble count algae information, and reach-wide algal percent cover. Physical Habitat (PHab) Assessment shall include the SWAMP full physical habitat characterization method.
- (2) The sampling crew shall be trained by a SWAMP-approved trainer and possess a Scientific Collection Permit from the California Department of

<sup>23</sup> Ode, P.R. 2007. *Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California*, State Water Board Surface Water Ambient Monitoring Program (SWAMP), as subsequently revised [[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/docs/swamp\\_sop\\_bio.pdf](http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/swamp_sop_bio.pdf)].

<sup>24</sup> Current methods are documented in (1) *SWAMP Standard Operating Procedure (SOP) and Interim Guidance on Quality Assurance for SWAMP Bioassessments*, Memorandum to SWAMP Roundtable from Beverly H. van Buuren and Peter R. Ode, May 21, 2007, and (2) *Amendment to SWAMP Interim Guidance on Quality Assurance for SWAMP Bioassessments*, Memorandum to SWAMP Roundtable from Beverly H. van Buuren and Peter R. Ode, September 17, 2008 both available at [[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/tools.shtml#methods](http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#methods)].

<sup>25</sup> The Standard Operating Procedure for algae sampling and evaluation is available in the following: Fetscher, A. and K. McLaughlin, May 16, 2008. *Incorporating Bioassessment Using Freshwater Algae into California's Surface Water Ambient Monitoring Program (SWAMP)*. Technical Report 563 and current SWAMP-approved updates to Standard Operating Procedures therein. Available at [[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/docs/reports/563\\_periphyton\\_bioassessment.pdf](http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reports/563_periphyton_bioassessment.pdf)].

Fish and Wildlife and participate in a SWAMP-approved inter-calibration exercise at least once in the Permit term. The ~~Discharger~~ Permittee may, but is not required to, modify its sampling procedures if these referenced procedures change during the Permit term. In such case, the ~~Discharger~~ Permittee shall notify the ~~Regional~~ Water Board and follow the updated SWAMP procedures.

- (3) Macroinvertebrates shall be identified and classified according to the *Standard Taxonomic Effort (STE) Level I of the Southwestern Association of Freshwater Invertebrate Taxonomists (SAFIT)*<sup>26</sup> (except Chironomids should be identified to subfamily) using a fixed count of 600 organisms per sample. The laboratory shall follow the *SWAMP Standard Operating Procedures for Laboratory Processing and Identification of Benthic Macroinvertebrates in California*.<sup>27</sup> Soft-bodied algae and diatom algae shall be identified to the species level. Algae identifications must be harmonized with the SWAMP master taxa list. All quality assurance and quality control steps specified in the *SWAMP Quality Assurance Program Plan*<sup>1</sup> shall be performed.
- (4) The Permittees shall measure general water quality parameters using a sonde and collect nutrient samples at a site when biological samples are collected. The general water quality parameters shall include temperature, dissolved oxygen, pH, and specific conductance. Nutrients samples shall be analyzed for total ammonia, nitrate, nitrite, total Kjeldahl nitrogen, total nitrogen (calculated), dissolved orthophosphate and total phosphorous, silica, and chloride.
- (5) In conducting the required bioassessment monitoring, the Permittees shall take precautions to prevent the introduction or spread of aquatic invasive species.
- (6) Sample Design/Locations – The Permittees shall continue to use the probabilistic sample design developed in the previous Permit term ~~2009-2014~~ to select sample locations. Also, Permittees shall continue to use the sampling site order and the rationale to exclude potential sites as previously defined by the sample design and reconnaissance standard operating procedures. After a statistically representative data set (i.e., approximately 30 samples) has been collected to address management questions related to condition of aquatic life, Permittees may select up to 20% of sample locations on a targeted basis to evaluate temporal trends in or other impacts to aquatic life condition.

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<sup>26</sup> The current SAFIT STEs (November 28, 2006) list requirements for both the Level I and Level II taxonomic effort, and are located at [http://www.waterboards.ca.gov/water\\_issues/programs/swamp/safit.shtml](http://www.waterboards.ca.gov/water_issues/programs/swamp/safit.shtml). When new editions are published by SAFIT, they will supersede all previous editions. All editions will be posted at the State Water Board's SWAMP website.

<sup>27</sup> [http://www.waterboards.ca.gov/water\\_issues/programs/swamp/docs/bmi\\_lab\\_sop\\_final.pdf](http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/bmi_lab_sop_final.pdf).

- (7) Frequency, Timeframe and Number of Sites – Sampling shall occur once per year during the appropriate index period (April 15-June 30) with consideration of antecedent rainfall. Sampling is a one-time grab sample for biological communities, nutrients, and general water quality collected on the same day. The Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Samples
Alameda Permittees	20 per year
Santa Clara Permittees	20 per year
Contra Costa Permittees	10 per year
San Mateo Permittees	10 per year
Fairfield-Suisun Permittees	8 per 5-year period
Vallejo Permittees	4 per 5-year period

- (8) Followup – ~~The Permittees shall consider s~~Sites scoring less than 0.795 according to the California Stream Condition Index<sup>28</sup> (CSCI) ~~as potentially are~~ appropriate for a Stressor Source Identification (SSID) project as defined in C.8.e. Such a score indicates a substantially degraded biological community relative to reference conditions. ~~Sites A SSID project shall also be considered when where~~ there is a substantial difference in CSCI score observed at a location relative to upstream or downstream sites ~~are also appropriate for a SSID project~~. If many samples show a degraded biological condition, sites where water quality is most likely to cause and contribute to this degradation may be prioritized by the Permittee for a SSID project.

**ii. Chlorine**

- (1) Field and Laboratory Method – Permittees shall collect a grab sample and analyze for free and total chlorine using methods specified in the BASMAA Regional Monitoring Coalition Creek Status Monitoring Program Standard Operating Procedures.
- (2) Sample Design/Locations – Sample locations may be selected by the Permittees to monitor locations near known or suspected potable water line breaks; to coincide with bioassessment sites; to coincide with creek restoration sites; or to resample a location where chlorine has been found in the past.
- (3) Frequency, Timeframe, and Number of Samples – Samples shall be collected in spring or summer. Vallejo and Fairfield-Suisun Permittees each shall collect their samples by the end of the second year of the permit term. The Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Locations Sampled
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<sup>28</sup> Documentation for the CSCI and information on calculating scores can be found at [http://www.swrcb.ca.gov/plans\\_policies/biological\\_objective.shtml](http://www.swrcb.ca.gov/plans_policies/biological_objective.shtml).

Alameda Permittees	20 per year
Santa Clara Permittees	20 per year
Contra Costa Permittees	10 per year
San Mateo Permittees	10 per year
Fairfield-Suisun Permittees	8 per 5-year period
Vallejo Permittees	4 per 5-year period

- (4) Followup – The Permittees shall immediately resample if the chlorine concentration is greater than 0.1 mg/L. If the resample is still greater than 0.1 mg/L, then Permittees shall report the observation to the appropriate Permittee central contact point for illicit discharges so that the illicit discharge staff can investigate and abate the associated discharge in accordance with its Provision C.5.e - Spill and Dumping Complaint Response Program.

**iii. Temperature**

- (1) Field Method – The Permittees shall monitor temperature of their streams using a digital temperature logger or equivalent.
- (2) Sample Design/Locations – The Permittees shall monitor stream reaches that are documented to support cold water fisheries and where either past data or best professional judgment indicates that temperatures may negatively affect that beneficial use.
- (3) Frequency, Timeframe and Number of Sites – Loggers shall be installed so that water temperatures are recorded at 60-minute intervals from April through September at the number of sites specified below. Vallejo and Fairfield-Suisun Permittees each shall collect their samples by the end of the second year of the permit term. The Permittees shall collect at least the minimum number of samples as shown below:

<b>Sampling Agency</b>	<b>Minimum Number of Stream Reaches Sampled</b>
Alameda Permittees	8 per year
Santa Clara Permittees	8 per year
Contra Costa Permittees	4 per year
San Mateo Permittees	4 per year
Fairfield-Suisun Permittees	2 per 5-year period
Vallejo Permittees	2 per 5-year period

- (4) Followup – The Permittees shall ~~consider conducting a SSID project when identify a site for which~~ results at one sampling station exceed the applicable temperature trigger or demonstrate a spike in temperature with no obvious natural explanation as a candidate SSID project. The temperature trigger is defined as when two or more weekly average temperatures exceed the Maximum Weekly Average Temperature of 17.0°C for a Steelhead stream, or when 20% of the results at one sampling station exceed the

instantaneous maximum of 24°C.<sup>29</sup> Permittees shall calculate the weekly average temperature by breaking the measurements into non-overlapping, 7-day periods.

**iv. Continuous Monitoring of Dissolved Oxygen, Temperature, and pH**

- (1) Field and Laboratory Method – The Permittees shall monitor general water quality parameters of streams using a water quality sonde or equivalent. Parameters shall include dissolved oxygen (mg/L and % saturation), pH, specific conductance (µS), and temperature (°C).
- (2) Sample Design/Locations – The Permittees shall monitor stream reaches that are documented to support cold water fisheries or where either past data or best professional judgment indicates that temperature may negatively affect the cold water beneficial use.
- (3) Frequency, Timeframe, and Number of Sites – The Permittees shall install sondes so that parameters are recorded at 15-minute intervals over 1-2 weeks in the spring concurrent with bioassessment sampling and 1-2 weeks in summer at the same sites. The Permittees shall monitor at least the minimum number of sites as shown below:

<b>Sampling Agency</b>	<b>Minimum Number of Sample Sites in Spring</b>	<b>Minimum # of Sample Sites in Summer</b>
Alameda Permittees	3 per year	3 per year
Santa Clara Permittees	3 per year	3 per year
Contra Costa Permittees	2 per year	2 per year
San Mateo Permittees	2 per year	2 per year
Fairfield-Suisun Permittees	2 per permit term	2 per 5-year period
Vallejo Permittees	2 per permit term	2 per 5-year period

- (4) Followup – ~~The Permittees shall consider conducting a SSID project when~~ When results at one sampling station exceed the applicable temperature or dissolved oxygen trigger or demonstrate a spike in temperature or drop in dissolved oxygen with no obvious natural explanation, the Permittees shall identify that sample site as a candidate SSID project. The Permittees shall calculate the weekly average temperature and dissolved oxygen by separating the measurements into non-overlapping, 7-day periods. The temperature trigger is defined as any of the following:
  - a. Maximum Weekly Average Temperature exceeds 17.0°C for a Steelhead stream, or 20 percent of the instantaneous results exceed 24°C<sup>8</sup>;
  - b. 20 percent of instantaneous pH results are < 6.5 or > 8.5;

<sup>29</sup> This maximum weekly average temperature trigger corresponds to a 10% reduction in growth as listed in Table 7.3 in Sullivan K., Martin, D.J., Cardwell, R.D., Toll, J.E., Duke, S. 2000. *An Analysis of the Effects of Temperature on Salmonids of the Pacific Northwest with Implications for Selecting Temperature Criteria, Sustainable Ecosystem Institute*. The 24°C acute lethal threshold is the more protective threshold cited on page 4-1 in Sullivan et al. (2000).

- c. 20 percent of the instantaneous specific conductance results are > 2000µS, or there is a spike in readings with no obvious natural explanation; or
- d. 20 percent of instantaneous dissolved oxygen results are < 7 mg/L in a cold water fishery stream.

**v. Toxicity in Water Column**

(1) ~~Field and Laboratory Method—The Permittees shall collect grab samples of receiving (creek) water using applicable SWAMP comparable methodology. These samples shall be analyzed for the test organisms listed and by the methods described on Table 8.1.~~

~~Toxicity shall be evaluated using the Test of Significant Toxicity (TST) statistical approach.<sup>30</sup> Each sample shall be subject to determination of “Pass” or “Fail” and shall indicate “Percent Effect” from toxicity using nondiluted samples. The TST null hypothesis shall be “mean sample response ≤ 0.75 × mean control response.” A test result that rejects this null hypothesis shall be reported as “Pass.” A test result that does not reject this null hypothesis shall be reported as “Fail.” The relative “Percent Effect” of the sample is defined and reported as: ((Mean control response — Mean sample response) ÷ Mean control response) × 100.~~

**Table 8.1 Water Column Aquatic Toxicity Analytical Procedures**

Test Species	Test Endpoint(s)	Units	U.S. EPA Method
<del><i>Pimephales promelas</i> (Fathead Minnow)</del>	<del>Larval Survival and Growth</del>	<del>Pass or Fail using TST, % Effect</del>	<del>EPA 821-R-02-013<sup>31</sup> EPA 833-R-10-003<sup>32</sup></del>
<del><i>Ceriodaphnia dubia</i> (Freshwater Crustacean)</del>	<del>Survival<sup>33</sup></del>	<del>Pass or Fail, % Effect &lt;25% Passes, &gt;25% Fails</del>	<del>EPA 821-R-02-013 EPA 833-R-10-003</del>
<del><i>Ceriodaphnia dubia</i> (Freshwater Crustacean)</del>	<del>Reproduction</del>	<del>Pass or Fail using TST, % Effect</del>	<del>EPA 821-R-02-013 EPA 833-R-10-003</del>
<del><i>Selenastrum capricornutum</i> (Green Algae)</del>	<del>Growth</del>	<del>Pass or Fail using TST, % Effect</del>	<del>EPA 821-R-02-013 EPA 833-R-10-003</del>

<sup>30</sup> ~~National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), Appendix A, Figure A-1, and Table A-1.~~

<sup>31</sup> ~~Short term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136.~~

<sup>32</sup> ~~National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003) 2010.~~

<sup>33</sup> ~~The *Ceriodaphnia dubia* chronic toxicity test design for the survival endpoint is not amenable to the TST, Welch's t test so the survival endpoint will be determined as a percent effect using the TST approach. A percent effect less than 25 percent will be considered a "pass," and a percent effect equal to or greater than 25 percent will be considered a "fail."~~

Test Species	Test Endpoint(s)	Units	U.S. EPA Method
<i>Hyaella azteca</i> (Freshwater Amphipod)	Survival	Pass or Fail using TST, % Effect <sup>a</sup>	EPA 821-R-02-012 <sup>34</sup> EPA 833-R-10-003
<i>Chironomus dilutus</i> (midge)	Survival	Pass or Fail using TST, % Effect <sup>a</sup>	EPA 821-R-02-012 EPA 833-R-10-003

<sup>a</sup> ~~The *Ceriodaphnia dubia* chronic toxicity test design for the survival endpoint is not amenable to the TST, Welch's t test so the survival endpoint will be determined as a percent effect using the TST approach. A percent effect less than 25 percent will be considered a "pass," and a percent effect equal to or greater than 25 percent will be considered a "fail." For *Hyaella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent.~~

- ~~(2) Sample Design/Locations—Sample locations may be selected by the Permittees to monitor locations where toxicity could be likely; to coincide with bioassessment sites; to coincide with creek restoration sites; or to resample a location where toxicity has been found in the past.~~
- ~~(3) Frequency, Timeframe and Number of Sites—The Permittees shall collect samples annually in the dry season. Vallejo and Fairfield Suisun Permittees each shall collect their sample by the end of the second year of the permit term. The Permittees shall collect at least the minimum number of samples as shown below:~~

Sampling Agency	Minimum Number of Sample Sites
Alameda Permittees	2 per year
Santa Clara Permittees	2 per year
Contra Costa Permittees	1 per year
San Mateo Permittees	1 per year
Fairfield Suisun & Vallejo Permittees collectively	1 per 5 year period

- ~~(4) Followup—The Permittees shall consider conducting a SSID project when a toxicity test of growth, reproduction, or survival of any test organism is reported as “fail” in both the initial sampling and a second, followup sampling, and both have ≥ 50 percent effect.~~

**vi. Toxicity and Pollutants in Sediment**

- ~~(1) Field and Laboratory Method—The Permittees shall collect grab samples of creek sediment using applicable SWAMP comparable methodology. These samples shall be analyzed for the pollutants and organisms listed and by the methods described on Table 8.2. Where no laboratory method is listed in Table 8.2, Permittees shall use U.S. EPA or SWAMP approved methods.~~

**Table 8.2 Sediment Toxicity & Pollutants Analytical Procedures**

Test Species or Pollutant	Units	Laboratory Method
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<sup>34</sup> ~~Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA/821/R-02/012, 2002; Table IA, 40 CFR Part 136). See Appendix B, page 238, for *H. azteca* and *C. dilutus* methods.~~

<b>Test Species or Pollutant</b>	<b>Units</b>	<b>Laboratory Method</b>
<i>Hyalella azteca</i> and <i>Chironomus dilutus</i> survival	Pass/Fail using TST, % Effect <sup>a</sup>	EPA 600/R-99-064 <sup>35</sup>
PCBs		
Total Mercury		
Pyrethroids <sup>b</sup> : bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin		EPA 3540C followed by EPA 8270D by NCI GCMS
Carbaryl		
Fipronil		
Organochlorine pesticides: Chlordane, Dieldrin, Sum DDD, Sum DDE, Sum DDT, Endrin, Heptachlor epoxide, Lindane (gamma-BHC)		
Total PAHs		
Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Zinc		
Total organic carbon		
Grain size		

<sup>a</sup> For *Hyalella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent. The false positive rate (beta error) is 0.05 and the negative rate (alpha error) is 0.25 for these test methods.

- (1) ~~Sample Design/Locations~~—Samples shall be collected at fine-grained depositional locations. Such sample locations may be selected by the Permittees to monitor locations where toxicity could be likely, to coincide with bioassessment sites, or to resample a location where toxicity has been found in the past, for example.
- (2) ~~Frequency, Timeframe, and Number of Sites~~—The Permittees shall collect samples annually during the dry season. Vallejo and Fairfield Suisun Permittees each shall collect their sample by the end of the second year of the permit term. Permittees shall collect at least the minimum number of samples as shown below:

<b>Sampling Agency</b>	<b>Minimum Number of Sample Sites</b>
Alameda Permittees	2 per year
Santa Clara Permittees	2 per year
Contra Costa Permittees	1 per year
San Mateo Permittees	1 per year
Fairfield Suisun & Vallejo Permittees collectively	1 per 5-year period

- (4) ~~Followup~~—The Permittees shall consider conducting a SSID project when analytical results indicate any of the following:

<sup>35</sup> *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates* (EPA 600/R-99-064) Second Edition. March 2000.

- ~~a. A toxicity test of growth, reproduction, or survival of any test organism is reported as “fail” in both the initial sampling and a second, followup sampling, and both have  $\geq 50\%$  Percent Effect;~~
- ~~b. A pollutant is present at a concentration exceeding its water quality objective in the Basin Plan;~~
- ~~c. For pollutants without WQOs, results exceed Probable Effects Concentrations or Threshold Effects Concentrations from MacDonald 2000.<sup>36</sup>~~

**vii.v. Pathogen Indicators**

- (1) Field and Laboratory Method – The Permittees shall collect and analyze samples for Enterococci and *E. coli* in accordance with the most recent U.S. EPA protocols.<sup>37</sup>
- (2) Sample Design/Locations – The Permittees shall collect one or more samples in a creek and at an area where water-contact recreation is likely or at an opportunistic location where there is potential to detect leaking sewerage infrastructure.
- (3) Frequency, Timeframe and Number of Sites – The Permittees shall collect samples in the dry season. Permittees shall collect at least the minimum number of samples as shown below:

<b>Sampling Agency</b>	<b>Minimum Number of Sample Sites</b>
Alameda Permittees	5 per year
Santa Clara Permittees	5 per year
Contra Costa Permittees	5 per year
San Mateo Permittees	5 per year
Fairfield-Suisun Permittees	3 per 5-year period
Vallejo Permittees	3 per 5-year period

- (4) Followup – If U.S. EPA’s statistical threshold value<sup>38</sup> for 36 per 1000 primary contact recreators is exceeded, the water body reach shall be ~~considered identified as a candidate SSID project for a SSID.~~

**C.8.e. Stressor/Source Identification (SSID) Projects**

When any ~~Creek Status Mon~~itoring result triggers a candidate for a SSID project ~~followup or potential~~ followup ~~action~~ as indicated within the provisions of C.8.d and C.8.g, the Permittees shall take the following actions, as also required by Provision C.1. If the trigger stressor or source is already known, the Permittee(s)

<sup>36</sup> ~~TEC and PEC are found in MacDonald, D.D., G.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. *Archives of Environ. Contamination and Toxicology* 39(1):20–31.~~

<sup>37</sup> U.S. EPA protocols available at [http://water.epa.gov/scitech/methods/cwa/methods\\_index.cfm](http://water.epa.gov/scitech/methods/cwa/methods_index.cfm). Analytical methods listed here are also acceptable: [http://water.epa.gov/grants\\_funding/beachgrants/chapter4.cfm](http://water.epa.gov/grants_funding/beachgrants/chapter4.cfm)

<sup>38</sup> U.S. EPA. 2012. *Recreational Water Quality Criteria*. Office of Water 820-F-12-058. Table 4.

shall take appropriate followup action to reduce the water quality stressor or source and count this action as a completed SSID Project.

SSID projects are intended to be oriented toward taking action(s) to alleviate stressors and reduce sources of pollutants; thus the Permittees shall attempt to complete all steps for half their required SSID projects, at a minimum, during the permit term.

- i. Review ~~Creek Status M~~onitoring (C.8.d and C.8.g) results annually and ~~develop-maintain~~ a list of all results exceeding thresholds described therein. Pollutant of Concern Monitoring (C.8.f) results may be included on the list as appropriate.
- ii. Select followup SSID projects from the list developed in C.8.e.i based on criteria such as magnitude of threshold exceedance; parameter (for a variety of parameters); likelihood stormwater management action(s) could address the exceedance; and similar priorities.
  - (1) Permittees who conduct SSID projects through a regional collaborative shall collectively initiate a minimum of eight new SSID projects (minimum of one for toxicity) during the Permit term. Because these SSID projects are being conducted through a regional collaborative, all SSID project reports shall be presented in a unified, regional-level report when submitted to the Water Board. In the case that no sample exhibits toxicity, as defined within the method required in this section, during the permit term, a SSID project for toxicity is not required.
  - (2) If conducted through a countywide Stormwater Program, the Santa Clara and Alameda Permittees each shall be required to initiate ~~no more than~~ five (minimum of one for toxicity) SSID projects; the Contra Costa and San Mateo Permittees each shall be required to initiate ~~no more than~~ three SSID (one for toxicity) projects; and the Fairfield-Suisun and Vallejo Permittees each shall be required to initiate ~~no more than~~ one SSID project(s) during the Permit term. In the case that no sample exhibits toxicity, as defined within the method required in this section, within a countywide program area during the permit term, a SSID project for toxicity is not required.
- iii. The Permittees shall conduct site specific SSID project(s) (or non-site specific if the problem is wide-spread) in the stepwise process described below:
  - (1) Step 1: The Permittees shall develop a work plan for each SSID project and submit the work plans with the Urban Creeks Monitoring Report (UCMR) such that a minimum of half the required number of SSID projects are started (at a minimum, have a workplan) by the third year of the permit term, with the goal of completing Step 2, at a minimum, for half the required SSID projects within the permit term. The work plan shall:
    - (a) Define the problem (e.g., magnitude and temporal and geographic extent) to the extent known;
    - (b) Describe the SSID project objectives, including the management context within which the results of the investigation will be used;

- (c) Consider the problem within a watershed context and look at multiple types of related indicators, where possible (e.g., basic water quality data and biological assessment results);
  - (d) List candidate causes of the problem (e.g., biological stressors, pollutant sources, and physical stressors);
  - (e) Establish a schedule for investigating the cause(s) of the trigger stressor/source to begin upon completion of the workplan. Investigations may include evaluation of existing data, desktop analyses of land uses and management actions, and/or collection of new data.
  - (f) Conduct a site specific study (or non-site specific if the problem is wide-spread) in a stepwise process to identify and isolate the cause(s) of the trigger stressor/source. This study should follow guidance for Toxicity Reduction Evaluations (TRE) or Toxicity Identification Evaluations (TIE)<sup>18</sup>. A TRE, as adapted for urban stormwater, allows Permittees to use other sources of information (such as industrial facility stormwater monitoring reports) in attempting to determine the trigger cause, potentially eliminating the need for a TIE. If a TRE does not result in identification of the stressor/source, Permittees shall conduct a TIE. For toxicity studies where there is no chemical pollutant associated with the creek status monitoring sample exhibiting toxicity, a TIE should be conducted. Where chemical data indicate a pollutant, such as fipronil or a pyrethroid, is present at adverse effects levels in the sample location, it is not necessary to conduct a TIE, and the SSID project would be considered complete;
  - (g) For physical habitat, physiochemical pollutants (dissolved oxygen, pH, conductivity, temperature), nutrients, metals, and other stressors, the investigation shall generally follow Step 5 (Identify Probably Causes) of the Causal Analysis/Diagnosis Decision Information System (CADDIS);<sup>39</sup>
  - (h) For pathogen indicators, the study shall generally follow the California Microbial Source Identification Manual: A Tiered Approach to Identifying Fecal Pollution Sources to Beaches (2013) or equivalent process or method;<sup>40</sup> and
  - ~~(h)~~(i) The Permittees may modify the SSID Work Plan in subsequent years of the Permit term in order to address new Creek Status (or POC) results that exceed applicable thresholds and are of a higher priority based on the criteria in C.8.e.ii.
- (2) Step 2: The Permittees shall conduct SSID investigations according to the schedule in each SSID project work plan and shall report on the status of SSID investigations annually in the UCMR. ~~SSID projects are intended to be oriented toward taking action(s) to alleviate stressors and reduce sources~~

<sup>39</sup> [http://www.epa.gov/caddis/si\\_step5\\_overview.html](http://www.epa.gov/caddis/si_step5_overview.html)

<sup>40</sup> [http://www.swrcb.ca.gov/water\\_issues/programs/beaches/cbi\\_projects/docs/sipp\\_manual.pdf](http://www.swrcb.ca.gov/water_issues/programs/beaches/cbi_projects/docs/sipp_manual.pdf)

~~of pollutants; thus the Permittees shall attempt to complete all steps for half their required SSID projects, at a minimum, during the permit term.~~ Local stormwater Permittees shall be advised of the SSID project and consulted regarding possible local sources and potential management actions during the work plan phase and periodically throughout the SSID project.

- (3) Step 3: Follow-up actions.
  - (a) When a Permittee(s) determines that discharges to its stormwater collection system(s) contribute to an exceedance of a water quality standard or an exceedance of a trigger threshold such that the water body's beneficial uses are not supported, the Permittee(s) shall submit a report in the UCMR that describes BMPs that are currently being implemented, and the current level of implementation, and additional BMPs that will be implemented, and/or an increased level of implementation, to prevent or reduce the discharge of pollutants that are causing or contributing to the exceedance of WQS. The report shall include an implementation schedule.
  - (b) If a Permittee(s) determines that discharges from its (their) stormwater collection system(s) are not contributing to an exceedance of a water quality standard, the Permittee(s) may end the SSID project. The Executive Officer must concur in writing before an SSID project is determined to be completed.
  - ~~(e)~~—In cases where SSID investigations prove inconclusive (e.g., the trigger threshold exceedance is episodic or reasonable methods do not reveal a stressor/source), the Permittee(s) may request that the Executive Officer consider the SSID project ~~be considered~~ complete.
- iv. Reporting: The Permittees shall submit an SSID status report in each UCMR which summarizes the actions taken in C.8.e.i-iii above. The SSID status report shall include a running summary of all SSID projects (C.8.e.ii), including start date, brief problem definition, and schedule for each project. As projects progress, the SSID report shall describe findings and monitoring results and outline steps for the upcoming year for each ongoing project. The Permittees shall submit the SSID status report with each UCMR.
- v. As long as Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed to do so by the Water Board.

#### **C.8.f. Pollutants of Concern Monitoring**

Pollutants of Concern (POC) monitoring is intended to assess inputs of POCs to the Bay from local tributaries and urban runoff, provide information to support implementation of TMDLs and other pollutant control strategies, assess progress toward achieving wasteload allocations for TMDLs and help resolve uncertainties associated with loading estimates and impairments associated with these pollutants.

In particular, monitoring required by this provision must be directed toward addressing the following five priority POC management information needs:

1. **Source Identification** - identifying which sources or watershed source areas provide the greatest opportunities for reductions of POCs in urban stormwater runoff;
2. **Contributions to Bay Impairment** - identifying which watershed source areas contribute most to the impairment of San Francisco Bay beneficial uses (due to source intensity and sensitivity of discharge location);
3. **Management Action Effectiveness** - providing support for planning future management actions or evaluating the effectiveness or impacts of existing management actions;
4. **Loads and Status** - providing information on POC loads, concentrations, and presence in local tributaries or urban stormwater discharges; and
5. **Trends** - evaluating trends in POC loading to the Bay and POC concentrations in urban stormwater discharges or local tributaries over time.

Not all information needs apply to all POCs (see Table 8.4-2 below for details).

- i. **Sampling Methods** – The Permittees shall implement or cause to be implemented the monitoring components shown in Table 8.3-1 in order to address each of the five POC management information needs.

**Table 8.3-1 POC Monitoring Methods**

Monitoring Type	Information Need	Monitoring Methods
1	Identify Source Areas	Monitoring methods to identify watershed sources of POCs should include: <ul style="list-style-type: none"> <li>• Collection and analysis of POCs on sediments in urban stormwater runoff that are transported through MS4s or receiving waters during stormwater runoff events; or</li> <li>• Collection and analysis of POCs on bedded sediments deposited in MS4s or receiving waters; or</li> <li>• Collection and analysis of POCs in stormwater runoff or bedded sediments on source area properties (e.g. private property); or,</li> <li>• Other monitoring methods designed to identify specific sources or uses of POCs (e.g., caulk in roadways or building materials) or watershed source areas.</li> </ul>
2	Identify watershed areas contributing most to Bay impairment	Monitoring methods to identify watershed areas contributing most to Bay impairment should include: <ul style="list-style-type: none"> <li>• Methods described for Monitoring Type #1; or</li> <li>• Collection of small fish tissue (or equivalent indicator) near tributary confluences with the Bay and analysis for POCs; or</li> <li>• Collection of bedded sediments near tributary confluences with the Bay and analysis for POCs.</li> </ul>
3	Provide support for future or existing management actions	Monitoring methods to support future or existing management actions should include: <ul style="list-style-type: none"> <li>• Methods described for Monitoring Type #1, with a focus on monitoring the effectiveness of specific management actions in reducing or avoiding POCs in MS4 discharges.</li> </ul>
4	Provide information on POC loads, concentrations, or presence / absence	Monitoring methods to provide information on POC loads, concentrations or presence/absence should include: <ul style="list-style-type: none"> <li>• Methods described for Monitoring Type #1, in combination with quantitative modeling associated with quantifying POC loads from MS4s or small tributaries to the Bay.</li> </ul>
5	Evaluate POC trends	Monitoring methods to provide information on trends in POC loads and concentrations overtime may include: <ul style="list-style-type: none"> <li>• Methods described for Monitoring Type #1 or #2.</li> </ul>

**ii. Parameters and Monitoring Frequency** – The Permittees shall conduct POC monitoring consistent with the monitoring intensity and frequency specified in Table 8.42. Monitoring frequencies are described as the total and minimum number of samples that Permittees within a countywide Stormwater Program shall collectively collect and analyze in a Water Year (October 1 – September 30). Minimum number of samples that Permittees within a countywide Stormwater Program shall collect by the end of the permit term fourth Water Year (i.e., September 30, 2019) to address each monitoring type are also specified.

**Table 8.4-2 POC Monitoring Parameters, Effort and Type**

Pollutant of Concern	Total Samples <sup>a</sup> Collected /Analyzed (yearly minimum) for each Countywide Program: Alameda, Contra Costa, Santa Clara, and San Mateo	Minimum Number of Samples for each Monitoring Type <sup>b</sup>
<b>Polychlorinated Biphenyls (PCBs)</b>	80 (8)	8 samples minimum for monitoring types 1-5
<b>Total Mercury</b>	80 (8)	8 samples minimum for monitoring types 1-5
<b>Copper</b>	20 (2)	4 samples minimum for monitoring types 4-5
<b>Pesticides:<sup>e</sup></b> Pyrethroids (water and sediment): bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda- cyhalothrin, permethrin Imidacloprid (in water only) Indoxacarb Fipronil Carbaryl (in sediments)	20 (2) for each	4 samples minimum for monitoring types 4-5
<b>Toxicity:</b> Water Column (during storms) Sediment (dry season)	10 (1) for each	10 samples for monitoring type 4
<b>Emerging Contaminants<sup>c</sup>:</b> Must include but not limited to: Perfluorooctane Sulfonates (PFOS, in sediment) Perfluoroalkyl sulfonates (PFAS, in sediment) Alternative flame retardants	See footnote c	See footnote c
<b>Ancillary Parameters<sup>d</sup>:</b> Total organic carbon Suspended sediments (SSC) Hardness	as necessary to address management questions for other POCs – see footnote d	
<b>Nutrients:</b> Ammonium, Nitrate, Nitrite, Total Kjeldahl Nitrogen, Orthophosphate, Total Phosphorus (all nutrients collected together for each sample)	20 (2) for each nutrient species	20 samples for monitoring type 4 for each nutrient species.

<sup>a</sup> This column indicates the total number of samples, across all applicable monitoring types (i.e., monitoring types 1-5 from Table 8.3-1), that must be collected during the permit term. The number in parentheses indicates the minimum number of samples that must be collected, across all applicable monitoring types, during each of the five years of the permit. For example, 80 total samples must be collected for both total PCBs and mercury by each set of Santa Clara County, San Mateo County, Alameda County, and Contra Costa County Permittees during the term of the

permit. Permittees must collect a minimum of 8 PCBs samples every year of the permit term, including the final year.

<sup>b</sup> This column indicates the monitoring types from Table 8.3-1 that are applicable to this POC along with the minimum number of samples that shall be collected by each set of Permittees (i.e., Santa Clara County, San Mateo County, Alameda County, and Contra Costa County) by the end of year four of the permit. The applicable monitoring type(s) is also stated to illustrate the management information need(s) motivating the collected data. For example, each set of Permittees (i.e., the Countywide Programs for Santa Clara, San Mateo, Alameda, and Contra Costa counties) must collect and analyze at least 8 samples to address monitoring types 1-5 in Table 8.3-1 for both total PCBs and total mercury. Some collected samples may address multiple management questions.

<sup>c</sup> The Permittees shall conduct or cause to be conducted a special study that addresses relevant management information needs for emerging contaminants. The special study must account for relevant CECs in stormwater and would address at least PFOS, PFAS, and alternative flame retardants being used to replace PBDEs.

<sup>d</sup> Total Organic Carbon (TOC) data are not used independently. Rather, TOC can be useful for normalizing PCBs data collected in water and sediment. TOC shall be collected concurrently with PCBs data that should be normalized to TOC. Similarly, suspended sediment concentrations (SSC) samples should be collected and analyzed when water samples are collected that will be used to assess loads, loading trends, or BMP effectiveness for PCBs and Mercury. Hardness data are used in conjunction with copper concentrations collected in fresh water.

**iii. POC Parameters and Analytical Methods** – Samples collected consistent with Table 8.4-2 shall be analyzed for parameters listed in Table 8.53. Where no laboratory method is listed in Table 8.3-8.2, Permittees shall use U.S. EPA or SWAMP-approved methods.

**Table 8.5-3 POC Analytes and Analytical Methods**

Pollutant of Concern	Matrix	Analyte(s) or Test Species	Laboratory Analytical Methods
Polychlorinated Biphenyls (PCBs)	Water	Total PCBs	U.S. EPA 1668 (RMP 40)
		Total Organic Carbon	
		Suspended sediments (SSC)	
	Bedded Sediment	Total PCBs	<a href="#">As appropriate to address the management information need: U.S. EPA 1668 (RMP 40), 8082A, or 8270D modified by Method 1625</a>
		Total organic carbon	
Mercury	Water	Total Mercury	
	Bedded Sediment	Total Mercury	
Copper	Water	Total Copper	
		Dissolved Copper	
		Hardness	
Pesticides	Water	Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin Imidacloprid	

Pollutant of Concern	Matrix	Analyte(s) or Test Species	Laboratory Analytical Methods
		Fipronil and Carbaryl (bedded sediment only)	
	Bedded Sediment	Total Organic Carbon	
Toxicity	Water	<i>Pimephales promelas</i> (Fathead Minnow)	Use methods stated in Provision C.8.d.iv. and C.8.d.v.
		<i>Ceriodaphnia dubia</i> (water flea) & <i>Hyalella azteca</i> (Freshwater Amphipod)	
		<i>Chironomus dilutus</i> (midge)	
		<i>Selenastrum capricornutum</i> (Green Algae)	
	Bedded Sediment	<i>Hyalella azteca</i>	
Nutrients	Water	Ammonium	
		Nitrate	
		Nitrite	
		Total Kjeldahl Nitrogen	
		Orthophosphate	
		Total Phosphorus	

**C.8.g. Pesticides and Toxicity Monitoring**

The Permittees shall conduct wet weather and dry weather monitoring of pesticides and toxicity in urban creeks. If a statewide coordinated pesticides and pesticides-related toxicity monitoring program begins collecting data on an ongoing basis during the Permit term, Permittees may request the Executive Officer modify, reduce or eliminate this monitoring requirement, provided the resultant change, viewed in context of the statewide program, would result in overall improvement of pesticide monitoring data collection.

**i. Toxicity in Water Column - Dry Weather**

(1) Field and Laboratory Method – The Permittees shall collect grab samples of receiving water using applicable SWAMP comparable methodology. These samples shall be analyzed for the test organisms listed, and by the methods described, on Table 8.4.

Toxicity shall be evaluated using the Test of Significant Toxicity (TST) statistical approach.<sup>41</sup> Each sample shall be subject to determination of “Pass” or “Fail” and shall indicate “Percent Effect” from toxicity using nondiluted samples. The TST null hypothesis shall be “mean sample response  $\leq 0.75 \times$  mean control response.” A test result that rejects this null hypothesis shall be reported as “Pass.” A test result that does not reject this

<sup>41</sup> National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), Appendix A, Figure A-1, and Table A-1.

null hypothesis shall be reported as “Fail.” The relative “Percent Effect” of the sample is defined and reported as: ((Mean control response – Mean sample response) ÷ Mean control response) × 100.

**Table 8.4 Water Column Aquatic Toxicity Analytical Procedures**

<u>Test Species</u>	<u>Test Endpoint(s)</u>	<u>Units</u>	<u>U.S. EPA Method</u>
<u><i>Pimephales promelas</i></u> (Fathead Minnow)	<u>Larval Survival and Growth</u>	<u>Pass or Fail using TST, % Effect</u>	<u>EPA-821-R-02-013<sup>42</sup></u> <u>EPA 833-R-10-003<sup>43</sup></u>
<u><i>Ceriodaphnia dubia</i></u> (Freshwater Crustacean)	<u>Survival<sup>a</sup></u>	<u>Pass or Fail, % Effect</u> <u>&lt;25% Passes,</u> <u>&gt;25% Fails</u>	<u>EPA-821-R-02-013</u> <u>EPA 833-R-10-003</u>
<u><i>Ceriodaphnia dubia</i></u> (Freshwater Crustacean)	<u>Reproduction</u>	<u>Pass or Fail using TST, % Effect</u>	<u>EPA-821-R-02-013</u> <u>EPA 833-R-10-003</u>
<u><i>Selenastrum capricornutum</i></u> (Green Algae)	<u>Growth</u>	<u>Pass or Fail using TST, % Effect</u>	<u>EPA-821-R-02-013</u> <u>EPA 833-R-10-003</u>
<u><i>Hyaella azteca</i></u> (Freshwater Amphipod)	<u>Survival</u>	<u>Pass or Fail using TST, % Effect<sup>b</sup></u>	<u>EPA-821-R-02-012<sup>44</sup></u> <u>EPA 833-R-10-003</u>
<u><i>Chironomus dilutus</i></u> (midge)	<u>Survival</u>	<u>Pass or Fail using TST, % Effect<sup>b</sup></u>	<u>EPA-821-R-02-012</u> <u>EPA 833-R-10-003</u>

<sup>a</sup>The *Ceriodaphnia dubia* chronic toxicity test design for the survival endpoint is not amenable to the TST, Welch's t-test so the survival endpoint will be determined as a percent effect using the TST approach. A percent effect less than 25 percent will be considered a "pass," and a percent effect equal to or greater than 25 percent will be considered a "fail."

<sup>b</sup>For *Hyaella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent.

- (2) Sample Design/Locations – Sample locations may be selected by the Permittees to monitor locations where toxicity could be likely; to coincide with bioassessment sites; to coincide with creek restoration sites; or to resample a location where toxicity has been found in the past.
- (3) Frequency, Timeframe and Number of Sites – The Permittees shall collect samples annually in the dry season. Vallejo and Fairfield-Suisun Permittees each shall collect their sample by the end of the second water year of the permit term. The Permittees shall collect at least the minimum number of samples as shown below:

<sup>42</sup> Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136.

<sup>43</sup> National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003) 2010.

<sup>44</sup> Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA/821/R-02/012, 2002; Table IA, 40 CFR Part 136). See Appendix B, page 238, for *H.azteca* and *C.dilutus* methods.

<u>Sampling Agency</u>	<u>Minimum Number of Sample Sites</u>
<u>Alameda Permittees</u>	<u>2 per year</u>
<u>Santa Clara Permittees</u>	<u>2 per year</u>
<u>Contra Costa Permittees</u>	<u>1 per year</u>
<u>San Mateo Permittees</u>	<u>1 per year</u>
<u>Fairfield-Suisun &amp; Vallejo Permittees collectively</u>	<u>1 per 5-year period</u>

**ii. Toxicity, Pesticides and Other Pollutants in Sediment - Dry Weather**

- (1) Field and Laboratory Method – The Permittees shall collect grab samples of creek sediment using applicable SWAMP comparable methodology. These samples shall be analyzed for the pollutants and organisms listed and by the methods described on Table 8.5. Where no laboratory method is listed in Table 8.5, Permittees shall use U.S. EPA or SWAMP-approved methods.

**Table 8.5 Sediment Toxicity & Pollutants Analytical Procedures**

<u>Test Species or Pollutant</u>	<u>Units</u>	<u>Laboratory Method</u>
<u><i>Hyaella azteca</i> and <i>Chironomus dilutus</i> survival<sup>a</sup></u>	<u>Pass/Fail using TST, % Effect<sup>a</sup></u>	<u>EPA-600/R-99-064<sup>45</sup></u>
<u>Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin</u>		<u>EPA 3540C followed by EPA 8270D by NCI-GCMS</u>
<u>Carbaryl</u>		
<u>Fipronil</u>		
<u>Total PAHs</u>		
<u>Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Zinc</u>		
<u>Total organic carbon</u>		
<u>Grain size</u>		

<sup>a</sup> For *Hyaella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent. The false positive rate (beta error) is 0.05 and the negative rate (alpha error) is 0.25 for these test methods.

- (2) Sample Design/Locations – Samples shall be collected at fine-grained depositional locations. Such sample locations may be selected by the Permittees to monitor locations where toxicity could be likely, to coincide with bioassessment sites, or to resample a location where toxicity has been found in the past, for example.
- (3) Frequency, Timeframe, and Number of Sites – The Permittees shall collect samples annually during the dry season. Vallejo and Fairfield-Suisun Permittees each shall collect their sample by the end of the second year of the permit term. Permittees shall collect at least the minimum number of samples as shown below:

<sup>45</sup> Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates (EPA 600/R-99-064) Second Edition. March 2000.

<u>Sampling Agency</u>	<u>Minimum Number of Sample Sites</u>
<u>Alameda Permittees</u>	<u>2 per year</u>
<u>Santa Clara Permittees</u>	<u>2 per year</u>
<u>Contra Costa Permittees</u>	<u>1 per year</u>
<u>San Mateo Permittees</u>	<u>1 per year</u>
<u>Fairfield-Suisun &amp; Vallejo Permittees collectively</u>	<u>1 per 5-year period</u>

**iii. Wet Weather Pesticides and Toxicity Monitoring**

(1) Field and Laboratory Method – The Permittees shall collect water column samples and analyze them for the following parameters using the methods specified in Tables 8.4 and 8.5. For imidacloprid, Permittees shall specify an analytical method that achieves a reporting level as close to 0.05 ppb as possible, but in no case exceeds 0.1 ppb).

- Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin
- Imidacloprid
- Indoxacarb<sup>46</sup>
- Fipronil
- Toxicity

(2) Sample Design/Locations – The Permittees shall collect samples annually during storm events. Sample locations shall be representative of urban watersheds (i.e., bottom of watershed locations).

(3) Frequency, Timeframe, and Number of Sites – If this (C.8.g.iii) sampling is conducted by the RMC on behalf of all Permittees, a total of ten (10) samples shall be collected over the Permit term, with a minimum of six (6) samples collected by the end of the third water year of the permit term. If this (C.8.g.iii) sampling is conducted by Countywide Stormwater Programs, Permittees shall collect at least the minimum number of samples as shown below:

<u>Sampling Agency</u>	<u>Minimum Number of Sample Sites</u>
<u>Alameda Permittees</u>	<u>1 per year</u>
<u>Santa Clara Permittees</u>	<u>1 per year</u>
<u>Contra Costa Permittees</u>	<u>1 per year</u>
<u>San Mateo Permittees</u>	<u>1 per year</u>
<u>Fairfield-Suisun &amp; Vallejo Permittees collectively</u>	<u>1 per 5-year period</u>

**iv. Followup** – The Permittees shall identify a site as a candidate SSID project when analytical results indicate any of the following:

<sup>46</sup> Indoxacarb shall be a required analyte in the water year following notification by the Executive Officer that an analytical method with appropriate quality assurance and sensitivity is available. At the time of Permit issuance, an analytical method has not been developed.

- (1) A toxicity test of growth, reproduction, or survival of any test organism is reported as “fail” in both the initial sampling and a second, followup sampling, and both have  $\geq 50\%$  Percent Effect;
- (2) A pollutant is present at a concentration exceeding its water quality objective in the Basin Plan;
- (3) For pollutants without WQOs, results exceed Probable Effects Concentrations or Threshold Effects Concentrations.<sup>47</sup>

#### C.8.h. Reporting

- i. **Water Quality Standard Exceedence** – When data collected pursuant to C.8.a.- ~~C.8.f~~C.8.g. indicate that discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittees shall notify the Water Board within no more than 30 days of such a determination and submit a followup report in accordance with Provision C.1 requirements. This reporting requirement shall not apply to continuing or recurring exceedances of water quality standards previously reported to the Water Board or to exceedances of pollutants that are to be addressed pursuant to Provisions C.8-9 through C.14 of this Order, ~~consistent in accordance~~ with Provision C.1.
- ii. **Electronic Reporting** – The Permittees shall submit to the California Environmental Data Exchange Network (CEDEN) all results from monitoring conducted pursuant to Provisions C.8.d. Creek Status, C.8.e. SSID Projects (as applicable), ~~and~~ C.8.f. Pollutants of Concern ~~and~~ C.8.g. Pesticides and Toxicity. Data that CEDEN cannot accept are exempt from this requirement.
  - (1) Data shall be submitted in SWAMP formats and with the quality controls required by CEDEN.
  - (2) Data collected during the previous October 1–September 30 period shall be submitted by March ~~15~~31 of each year.
- iii. **Urban Creeks Monitoring Report** – The Permittees shall submit a comprehensive Urban Creeks Status Monitoring Report no later than March ~~15~~31 of each year, reporting on all data collected during the foregoing October 1–September 30 period. Each Urban Creeks Monitoring Report shall contain summaries of Creek Status, SSID Projects, and Pollutants of Concern Monitoring including, as appropriate, the following:
  - (1) Immediately following the Table of Contents, a completed Water Year Summary Table that lists each Program’s monitoring sites, with a row for each site. The table columns contain: Site ID; creek name; land use; latitude; longitude; bioassessment, nutrient; chlorine; water column toxicity; sediment toxicity and chemistry; pathogens; temperature

<sup>47</sup> TEC and PEC are found in MacDonald, D.D., G.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. *Archives of Environ. Contamination and Toxicology* 39(1):20–31. More recent TECs and PECs may be used if lower than stated in MacDonald 2000.

loggers; and general water quality (sonde data). For each site, list the site information and check the parameters sampled at that site. This will provide a summary of all Creek Status Monitoring conducted that water year.

- (2) An SSID status report pursuant to Provision C.8.e.iv.
- (3) For all data, a statement of the data quality.
- (4) An analysis of the data, which shall include the following:
  - (a) Identification and analysis of any trends in stormwater or receiving water quality which shall include:
    - Calculations of CSCI scores and physical habitat endpoints;
    - Comparison of CSCI scores to:
      - Each other;
      - Any applicable, available reference site(s); and
      - Physical habitat endpoints.
  - (b) A discussion of the data for each monitoring program component, which shall:
    - Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin Plan, the Ocean Plan, or the California Toxics Rule or other applicable water quality control plans;
    - Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
    - Identify and prioritize water quality problems;
    - Identify potential sources of water quality problems;
    - Describe followup actions;
    - Evaluate the effectiveness of existing control measures; and
    - Identify management actions needed to address water quality problems.

**iv. Pollutants of Concern Monitoring Reports** – By October 15 of each year of the permit (beginning in 2016), the Permittees shall submit a report describing the allocation of sampling effort for POC monitoring for the forthcoming year (i.e., the water year that began October 1 of that year) and what was accomplished for POC monitoring during the preceding water year. The report shall include (for preceding year and projected for forthcoming year): monitoring locations, number and types of samples collected, purpose of sampling (management question addressed), and analytes measured. Any data not reportable to CEDEN should ~~also~~ be included in this the following Urban Creeks Monitoring Report due annually on March 31.

**v. Integrated Monitoring Report** – No later than March ~~15-31~~ of the fifth year of the Permit term, Permittees shall submit an Integrated Monitoring Report in lieu of the annual Urban Creeks Monitoring Report. This report will be part of the next Report of Waste Discharge for the reissuance of this Permit. The Integrated

Monitoring Report shall report on all the data collected since the previous Integrated Monitoring Report and shall contain the following:

- (1) The Water Year ~~Data-Summary~~ Table, as described in Provision ~~C.8.gC.8.h~~.iii above, containing information pertaining to the fourth year monitoring data;
- (2) A comprehensive analysis of all data collected pursuant to Provision C.8. since the previous Integrated Monitoring Report, and may include other pertinent studies;
- (3) For ~~Pollutants of Concern~~POCs, the report shall include methods, data, calculations, load estimates, and source estimates for each ~~Pollutants of Concern~~POC parameter, as applicable; and
- (4) The Integrated Monitoring Report shall include a budget summary for each monitoring requirement and recommendations for future monitoring.

**vi. Standard Report Content** –All monitoring reports shall include the following:

- (1) The purpose of the monitoring and briefly describe the study design rationale;
- (2) Quality Assurance/Quality Control summaries for sample collection and analytical methods, including a discussion of any limitations of the data;
- (3) Brief descriptions of sampling protocols and analytical methods;
- (4) Sample location description, including water body name and segment and latitude and longitude coordinates;
- (5) Sample ID, collection date (and time if relevant), media (e.g., water, filtered water, bed sediment, tissue);
- (6) Concentrations detected, measurement units, and detection limits;
- (7) Assessment, analysis, and interpretation of the data for each monitoring program component;
- (8) A listing of volunteer and other non-Permittee entities whose data are included in the report; ~~and~~
- (9) Assessment of compliance with applicable water quality standards;
- ~~(10) A signed certification.~~

## C.9. Pesticides Toxicity Control

To prevent the impairment of urban streams by pesticide-related toxicity, the Permittees shall implement a pesticide toxicity control program that addresses, within their jurisdictions, their own and others' use of pesticides that pose a threat to water quality and that have the potential to enter the municipal conveyance system.

This provision implements requirements of the TMDL for Diazinon and Pesticide-Related Toxicity for Urban Creeks in the region. The TMDL includes urban runoff allocations for Diazinon of 100 ng/l and for pesticide-related toxicity of 1.0 Acute Toxicity Units (TUa) and 1.0 Chronic Toxicity Units (TUc) to be met in urban creek waters. U.S. EPA phased out urban uses of diazinon in the mid-2000s, and diazinon is no longer detected in urban creeks in the region. Pesticide-related toxicity continues to occur, because State and federal pesticide regulatory programs, as currently implemented, allow pesticides to be used in ways that cause or contribute to aquatic toxicity. In adopting the TMDL implementation plan, the Water Board recognized that (1) Permittees must control their own use of pesticides, but Permittees are not solely responsible for attaining the allocations, because their authority to regulate others' pesticide use is constrained by federal and State law; and (2) because a realistic date for achieving allocations cannot be discerned given the current framework for pesticide regulation, reviewing the implementation strategy every five years, at permit reissuance, is the appropriate timeline. Accordingly, the Permittees' requirements for addressing the allocations are set forth in the TMDL implementation plan and are included in this provision.

Urban-use pesticides of concern to water quality include: diamides (chlorantraniliprole and cyantraniliprole); diuron, fipronil and its degradates; indoxacarb; organophosphorous insecticides (chlorpyrifos, diazinon, and malathion); pyrethroids (metofluthrin, bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, and permethrin); and carbamates (e.g., carbaryl and aldicarb).

### C.9.a. Maintain and Implement an Integrated Pest Management (IPM) Policy or Ordinance and Standard Operating Procedures

All Permittees have developed a pesticide toxicity control program for use of pesticides in municipal operations and on municipal property based on the concepts of IPM<sup>48</sup> and have adopted an IPM policy or ordinance and standard operating procedures to implement the policy or ordinance.

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<sup>48</sup> 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. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. IPM techniques could include biological controls (e.g., ladybugs and other natural enemies or predators); physical or mechanical controls (e.g., hand labor or mowing, caulking entry points to buildings); cultural controls (e.g., mulching, alternative plant type selection, and enhanced cleaning and containment of food sources in buildings); and reduced risk chemical controls (e.g., soaps or oils).

- i. **Task Description** – The Permittees shall implement their IPM policies or ordinances and standard operating procedures and update their IPM policies or ordinances and standard operating procedures as needed to ensure their use of pesticides do not cause or contribute to pesticide-caused toxicity in receiving waters.
- ii. **Implementation** - Each Permittee shall require municipal employees and contractors to adhere to its IPM policy or ordinance and standard operating procedures in all the Permittee’s municipal operations and on all municipal property.
- iii. **Reporting**
  - (1) In their Annual Reports, the Permittees shall certify they are implementing their IPM policy or ordinance and standard operating procedures, report trends in quantities and types of pesticide active ingredients used, and explain any increases in use of pesticides of concern to water quality as listed in the introduction section of this Provision. [Trends and quantities of pesticide active ingredient usage shall be reported beginning with the September 2017 Annual Report.](#)
  - (2) In their Annual Reports, the Permittees shall provide a brief description (e.g., one or two sentences) of two IPM tactics or strategies implemented in the reporting year. Examples could include non-chemical strategies such as monitoring, mowing weeds, mulching, and redesign of problematic landscapes; preventive actions such as sealing holes and gaps in structures, improving sanitation, and outreach to employees about how their actions contribute to pest presence; and examples of integration of several strategies into a cohesive whole, such as tackling a rat problem by educating building occupants, improving sanitation, trimming trees away from buildings, sealing holes in the structure, and trapping rodents. To the extent possible, different IPM actions should be described each year, so that a range of IPM actions is described over the permit term.
  - (3) IPM policies or ordinances and IPM standard operating procedures shall be submitted to the Water Board upon request.

**C.9.b. Train Municipal Employees**

- i. **Task Description**– The Permittees shall ensure that all municipal employees who, within the scope of their duties, apply or use pesticides are trained in IPM practices and the Permittee’s IPM policy or ordinance and standard operating procedures. This training may also include other training opportunities such as Bay-Friendly Landscape Maintenance Training & Qualification Program, provided both structural and landscape pest control training are provided.
- ii. **Reporting**
  - (1) In their Annual Reports, the Permittees shall report the percentage of municipal employees who apply pesticides who have received training in

their IPM policy or ordinance and IPM standard operating procedures within the last year. This report shall briefly describe the nature of the training, such as tailgate training provided by a Permittee's IPM coordinator, IPM training through the Pesticide Applicators Professional Association, etc.

- (2) The Permittees shall submit training materials (e.g., course outline, date, and list of attendees) upon request.

### C.9.c. Require Contractors to Implement IPM

- i. **Task Description** – The Permittees shall hire IPM-certified contractors ~~and or~~ include contract specifications requiring contractors to implement IPM, so that all contractors practice IPM on municipal properties. The Permittees shall observe contractor pesticide applications to verify that contractors implement their contract specifications in accordance with the Permittee's IPM policies or ordinance and standard operating procedures. Permittees shall note that contractor certification as a pest control advisor (PCA) alone is not evidence of IPM implementation. Similarly, IPM certifications awarded to a pest control company may not guarantee an individual employee will always use IPM strategies. Thus, periodic Permittee observation of contractor performance is necessary.
- ii. **Implementation** – Permittees shall periodically monitor their contractors' activities to verify full implementation of IPM techniques. This shall include, at a minimum, evaluation of lists of pesticides and amounts of active ingredient used.
- iii. **Reporting** – In their Annual Reports, the Permittees shall state how they verified contractor compliance with IPM policies and any actions taken or needed to correct contractor performance.

### C.9.d. Interface with County Agricultural Commissioners

- i. **Task Description** – The Permittees shall maintain communications with county agricultural commissioners to (a) get input and assistance on urban pest management practices and use of pesticides, (b) inform them of water quality issues related to pesticides, and (c) report any observed or citizen-reported violations of pesticide regulations (e.g., illegal handling and applications of pesticides) associated with stormwater management, particularly the California Department of Pesticide Regulation (DPR) surface water protection regulations for outdoor, nonagricultural use of pyrethroid pesticides by any person performing pest control for hire ([http://www.cdpr.ca.gov/docs/legbills/rulepkgs/11-004/text\\_final.pdf](http://www.cdpr.ca.gov/docs/legbills/rulepkgs/11-004/text_final.pdf)).
- ii. **Reporting** – In their Annual Reports, the Permittees shall briefly describe the communications they have had with county agricultural commissioners and report followup actions to correct violations of pesticide regulations.

**C.9.e. Public Outreach**

- i. Task Description** – Permittees shall undertake outreach programs to (a) encourage communities within the Permittee’s jurisdiction to reduce their reliance on pesticides that threaten water quality; (b) encourage public and private landscape irrigation management that minimizes pesticide runoff; and (c) promote appropriate disposal of unused pesticides.
- ii. Implementation** – The Permittees shall conduct each of the following:
  - (1) **Point of Purchase Outreach:** The Permittees shall:
    - Conduct outreach to consumers at the point of purchase;
    - Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control; and
    - Participate in and provide resources for the “Our Water, Our World” program or a functionally-equivalent pesticide use reduction outreach program.
  - (2) **Pest Control Contracting Outreach:** The Permittees shall conduct outreach to residents who use or contract for structural pest control and landscape professionals by (a) explaining the links between pesticide usage and water quality; and (b) providing information about IPM in structural pest management certification programs and landscape professional trainings; and (c) disseminating tips for hiring structural pest control operators and landscape professionals, such as the tips prepared by the University of California Extension IPM Program (UC-IPM).
  - (3) **Outreach to Pest Control Professionals:** The Permittees shall conduct outreach to pest control operators, urging them to promote IPM services to customers and to become IPM-certified by Ecowise Certified or a functionally-equivalent certification program. Permittees are encouraged to work with the Pesticide Applicators Professional Association; the California Association of Pest Control Advisors; DPR; county agricultural commissioners; UC-IPM; BASMAA; EcoWise Certified Program (or functionally equivalent certification program); Bio-integral Resource Center and others to promote IPM to pest control operators.
- iii. Reporting** – In each Annual Report, Permittees shall describe their actions taken in the three outreach categories above. Outreach conducted at the county or regional level shall be described in Annual Reports prepared at that respective level; reiteration in individual Permittee reports is discouraged. Reports shall include a brief description of outreach conducted in each of the three categories, including level of effort, messages and target audience. (The effectiveness of outreach efforts shall be evaluated only once in the Permit term, as required in Provision C.9.f.).

**C.9.f. Track and Participate in Relevant Regulatory Processes**

- i. Task Description** – The Permittees shall conduct the following activities, which may be done at a county, regional, or state wide level:
- (1) The Permittees shall track U.S. EPA pesticide evaluation and registration activities as they relate to surface water quality and, when necessary, encourage U.S. EPA to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the CWA and to accommodate water quality concerns within its pesticide registration process;
  - (2) The Permittees shall track DPR pesticide evaluation activities as they relate to surface water quality and, when necessary, encourage DPR to coordinate implementation of the California Food and Agriculture Code with the California Water Code and to accommodate water quality concerns within its pesticide evaluation process;
  - (3) The Permittees shall assemble and submit information (such as monitoring data) as needed to assist DPR and county agricultural commissioners in ensuring that pesticide applications comply with ~~water quality standards~~ WQS; and
  - (4) As appropriate, the Permittees shall submit comment letters on U.S. EPA and DPR re-registration, re-evaluation, and other actions relating to pesticides of concern for water quality.
- ii. Reporting** – In their Annual Reports, the Permittees shall summarize participation efforts, information submitted, and how regulatory actions were affected. Permittees who contribute to a county, regional, or state wide effort shall submit one report at the county or regional level. Duplicate reporting is discouraged. ~~Permittees who do not contribute to a regional or county wide effort shall list their own participation efforts, information submitted, and how regulatory actions were affected.~~

**C.9.g. Evaluate Implementation of Pesticide Source Control Actions**

- i. Task Description** – This task is necessary to gauge how effective the implementation actions taken by Permittees are in (a) achieving TMDL targets and (b) avoiding future pesticide-related toxicity in urban creeks. Once during the permit term, Permittees shall conduct a thoughtful evaluation of their IPM efforts, how effective these efforts appear to be, and how they could be improved.
- ii. Implementation** – The Permittees shall evaluate the effectiveness of the pesticide control measures implemented by their staff and contractors, evaluate attainment of pesticide concentration and toxicity targets for water and sediment from monitoring data (collected by Permittees, research agencies, and/or State agencies), and identify additions and/or improvements to existing control measures needed to attain targets, with an implementation time schedule.

- iii. Reporting** – In their 2019 Annual Reports, the Permittees shall submit this evaluation, which shall include an assessment of the effectiveness of their IPM efforts required in Provisions C.9.a-e and g; a discussion of any improvements made in these efforts in the preceding five years; and any changes in water quality regarding pesticide toxicity in urban creeks. This evaluation shall also include a brief description of one or more pesticide-related area(s) the Permittee will focus on enhancing during the subsequent permit term. Work conducted at the county or regional level shall be evaluated at that respective level; reiteration in individual Permittee evaluation reports is discouraged.

## C. 10. Trash Load Reduction

The Permittees shall demonstrate compliance with Discharge Prohibition A.1, for trash discharges, Discharge Prohibition A.2, and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from MS4s in accordance with the requirements of this provision. Flood management agencies are not subject to these trash reduction requirements except for continued implementation of requirements for trash full capture systems and Trash Hot Spot cleanups, as specified in subsections C.10.b.i and C.10.c.

### C.10.a.Trash Reduction Requirements

Permittees shall implement trash load reduction control actions in accordance with the following schedule and trash generation area management requirements, including mandatory minimum full trash capture systems, to meet the goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by July 1, 2022.

- i. **Schedule** - Permittees shall reduce trash discharges from 2009 levels, described below, to receiving waters in accordance with the following schedule:

- a. 70 percent by July 1, 2017; and

- ~~a.b. 80 percent by July 1, 2019.~~

- ~~b. 100 percent, or no adverse impact to receiving waters from trash, by July 1, 2022.~~

In addition, Permittees should achieve ~~the following reductions:~~ 60 percent reduction by July 1, 2016, ~~and 80 percent by July 1, 2019.~~ ~~The~~ ~~ise~~ ~~are~~ ~~is~~ ~~not~~ ~~a~~ ~~mandatory~~ ~~deadlines;~~ rather, it shall -but should- be used as a performance guidelines to meet the mandatory July 1, 2017 ~~deadlines~~ ~~above~~. Permittees that do not attain ~~the 60 percent~~ performance guideline shall submit documentation of a plan and schedule of implementation of additional trash load reduction control actions that will attain the July 1, 2017 ~~subsequent~~ ~~mandatory~~ deadline.

- ii. **Trash Generation Area Management** - Permittees shall demonstrate attainment of the C.10.a.i trash discharges percentage-reduction requirements by management of mapped trash generation areas within their jurisdictions delineated on Trash Generation Area Maps included with their Long Term Trash Reduction Plans, submitted in February 2014, in accordance with the requirements and accounting set forth in this provision ~~herein~~. The February 2014 maps provide the 2009 trash levels and delineate trash generation areas within Permittees' jurisdictions into the following trash generation rate categories:

Low = less than 5 gal/acre/yr;

Moderate = 5-10 gal/acre/yr;

High = 10-50 gal/acre/yr; and

Very High = greater than 50 gal/acre/yr.

Permittees also designated trash management areas on their February 2014 maps encompassing one or more trash generation areas, within which they will implement trash control actions. Permittees shall have an opportunity to correct and/or revise, based on

improved information, the 2009 trash levels and trash generation areas in their February 2014 maps by submitting the correction and/or revision no later than the 2016 Annual Report deadline.

- a. Permittees shall implement trash prevention and control actions, including full trash capture systems or other trash management actions, or combinations of actions, with trash discharge control equivalent to or better than full trash capture systems, to reduce trash generation to a Low trash generation rate or better. Actions equivalent to full trash capture means actions that send no more trash down the storm drain system than a full trash capture device would allow, which is essentially no trash discharge except in very large storm flows. The C.10.a.i percent reductions shall be demonstrated by percent of 2009 Very High, High, and Moderate trash generation areas reduced to lower trash generation categories or Low trash generation by the C.10.a.i mandatory deadlines.
- b. Permittees shall ensure that lands that they do not own or operate, but that are plumbed directly to their storm drain systems in Very High, High, and Moderate trash generation areas, are equipped with full trash capture systems or are managed with trash discharge control actions equivalent to or better than full trash capture systems. The efficacy of the latter shall be assessed with visual assessments in accordance with C.10.b.ii. If there is a full trash capture device downstream of these lands, no other trash control is required. Permittees shall map the location, or otherwise record the location, of all such lands greater than 510,000 ft<sup>2</sup> that are plumbed directly to their storm drain systems by July 1, 2018, including the trash control status of these areas. This information shall be retained by the Permittees for inspection upon request.
- iii. **Mandatory Minimum Full Trash Capture Systems** - Permittees shall install and maintain a mandatory minimum number of full trash capture devices, to treat runoff from an area equivalent to 30 percent of retail/wholesale land area, as documented by the Association of Bay Area Governments, which drains to the storm drain system within their jurisdictions. A city Permittee with a population less than 12,000 and retail/wholesale land less than 40 acres, or a population less than 2,000, is exempt from this full trash capture requirement. Table 2 in Attachment E contains the minimum amount of drainage areas that must be treated with full trash capture devices by each city or county Permittee and the minimum number of trash capture devices required to be installed and maintained by flood management agency Permittees.

A full capture system is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour, storm in the sub-drainage area or designed to carry at least the same flow as the storm drain connected to the inlet. The device(s) must also have a trash reservoir large enough to contain a reasonable amount of trash safely without overflowing trash into the overflow outlet between maintenance events. Types of systems certified by the State Water Board are deemed full capture systems. A stormwater treatment facility implemented in accordance with Provision C.3 is also deemed a full capture systems if the system-facility, including its maintenance is maintained to prevent the discharge-off site movement of accumulated trash to the

downstream MS4 and receiving waters and discharge point overflow from the system facility, including overflows, are is appropriately screened or otherwise configured to meet the full trash capture screening specification for storm flows up to the full trash capture one year, one hour storm hydraulic specification (C.10.a.iii.).

**C.10.b. Demonstration of Trash Reduction Outcomes**

i. **Full Trash Capture Systems** – Permittees shall maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of each of their full trash capture systems, including the mapped location and drainage area served by each system.

a. **Maintenance** - The maintenance of each full capture device shall be adequate to prevent plugging, including plugging of the 5 mm screen leading to trash overflow and bypass, flooding, or a full condition of the device's trash reservoir ~~and causing~~ bypassing of trash. All full trash capture devices shall be inspected and maintained at least once per year. All such devices in High or Very High trash generation areas shall be inspected at least two times per year, with the inspections spaced at least three months or more apart. If this frequency of inspection is found excessive after two inspections, the inspection frequency can be reduced to once per year.

~~(i) Storm drain inlet type full trash capture devices in Low or Moderate trash generation areas shall be maintained a minimum of once per year.~~

~~(ii) Storm drain inlet type full trash capture devices in High trash generation areas shall be maintained a minimum of twice per year.~~

~~(iii) Storm drain inlet type full trash capture devices in Very High trash generation areas will be maintained a minimum of 3 times per year.~~

~~(iv) All other full trash capture devices shall be maintained a minimum of one time per year.~~

If any such device is found to have a plugged or blinded screen or is greater than 50 percent full of trash during a maintenance event, the maintenance frequency shall be increased so that the device is neither plugged nor more than half full of trash ~~byat~~ the next maintenance event.

b. **Maintenance Records** - Permittees shall retain device specific maintenance records, including, at a minimum: the date(s) of maintenance, the capacity condition of the device at the time of maintenance (full and overflowing or with storage capacity remaining), any special problems such as flooding, screen blinding or plugging from leaves, plastic bags, or other debris causing overflow, damage reducing function, or other negative conditions. A summary of this information shall be reported in each Annual Report, which may be limited to the number of full capture devices maintained that exhibited a plugged, full or overflowing condition upon maintenance.

c. **Certification** - Permittees shall certify annually that each of their full trash capture systems is operated and maintained to meet full trash capture system requirements. Drainage areas served by an adequately maintained full trash capture system will be considered equivalent to or better than a Low trash generation area.

- ii. **Other Trash Management Actions** - Permittees shall maintain, and provide for inspection and review upon request, documentation of non-full trash capture system trash control actions that verifies implementation of each action. Permittees shall also conduct assessment of the action that verifies effectiveness of the action or combination of actions and maintain, and provide for inspection and review upon request, documentation of assessments.
- a. **Implementation Documentation** - Permittees shall maintain documentation of trash control actions that describes each action or combination of actions, the level of implementation, the timing and frequency of implementation, standard operating procedures if applicable, location(s) of implementation actions including mapped location(s) and drainage area(s) affected or description of areal extent, tracking and enforcement procedures if applicable, and other information relevant to effective implementation of the action or combination of actions.
- b. **Visual Assessment of Outcomes of Other Trash Management Actions** - Permittees shall conduct visual on-land assessment, including photo documentation, or other acceptable assessment method (see C.10.b.ii.b.(iv.)), of each trash generation area within which it is implementing other trash management actions or combination of actions other than full trash capture, to determine or verify the effectiveness of the action or combination of actions. Permittees may assess and account for one or more trash generation areas in a single trash management area within which a control action or combination of control actions is implemented. The visual on-land assessment method used shall meet or exceed the following criteria:
- (i) Conduct observations within a trash management area of the sidewalk, curb and gutter, or locations associated with trash generation sources.
  - (ii) Conduct observations at randomly selected locations covering at least ten percent of a trash management area's street miles; or conduct observations at strategic locations with justification they are representative of trash generation in the management area and they will represent the effectiveness of the control action(s) implemented or planned in the management area.
  - (iii) Conduct observations at a frequency consistent with known or estimated trash generation rate(s) within a trash management area and the time frequency of implementation of the control action(s) implemented or planned in the management area. Conduct observations for effectiveness approximately at the halfway point of the interval between instances of recurring trash control actions such as street sweeping and on-land cleanup.
  - (iv) Permittees may put forth substantial-substantive and credible evidence that certain management actions or sets of management actions when performed to a specified performance standard yield a certain trash reduction outcome reliably. Such a proposal shall be made to the Executive Officer as a submittal separate from any other submittals or reports. If this evidence is ~~presented and~~ accepted by the Executive Officer, the Permittees may claim a similar trash reduction outcome by demonstrating that they have performed these trash reduction actions within certain trash management areas to the same performance standard accepted by the Executive Officer.

- iii. **Percentage Discharge Reduction** - Percentage discharge reduction from 2009 from Very High generation areas reduced to High, Moderate, and Low, High generation areas reduced to Moderate and Low, and Moderate trash generation areas reduced to Low trash generation category to meet the required total percent reduction (%<sub>Reduction</sub>) shall be calculated based on the following formula:

$$\% \text{ Reduction} = 100 [(12A_{\text{VH}(2009)} + 4A_{\text{H}(2009)} + A_{\text{M}(2009)}) - (12A_{\text{VH}} + 4A_{\text{H}} + A_{\text{M}})] \\ / (12A_{\text{VH}2009} + 4A_{\text{H}2009} + A_{\text{M}2009})$$

where:

- $A_{\text{VH}(2009)}$  = total amount of the 2009 very high trash generation category jurisdictional area  
 $A_{\text{H}(2009)}$  = total amount of the 2009 high trash generation category jurisdictional area  
 $A_{\text{M}(2009)}$  = total amount of the 2009 moderate trash generation category jurisdictional area  
 $A_{\text{VH}}$  = total amount of very high trash generation category jurisdictional area in the reporting year  
 $A_{\text{H}}$  = total amount of high trash generation category jurisdictional area in the reporting year  
 $A_{\text{M}}$  = total amount of moderate trash generation category jurisdictional area in the reporting year  
12 = Very High to Moderate weighing ratio  
4 = High to Moderate weighing ratio  
100 = fraction to percentage conversion factor

- iv. **Source Control** – Permittee jurisdiction-wide actions to reduce trash at the source, particularly persistent trash items, may be valued toward trash load reduction compliance by up to ~~five~~ten percent load reduction total for all such actions. To claim a load percentage reduction value, Permittees must provide ~~substantial~~substantive and credible evidence that these actions reduce trash by the claimed value. A Permittee may reference studies in other jurisdictions if it provides evidence that the implementation of source control in its jurisdiction is similarly implemented as the source control assessed in the reference studies.

- v. **Receiving Water ~~Observations~~ Monitoring** - Permittees shall ~~conduct receiving water observations downstream from trash generation areas that have been converted from Very High, High, or Moderate to Low trash generation rates, or at other locations for which receiving water monitoring over time will produce useful trash management information.~~ develop receiving water monitoring tools and protocols and a monitoring program designed, to the extent possible, to answer the following questions:

- Have a Permittee's trash control actions effectively prevented trash within a Permittee's jurisdiction from discharging into receiving water(s)?
- Is trash present in receiving water(s), including transport from one receiving water to another, e.g., from a creek to a San Francisco Bay segment, at levels that may cause adverse water quality impacts?

- Are trash discharges from a Permittee's jurisdiction causing or contributing to adverse trash impacts in receiving water(s)?
- Are there sources outside of a Permittee's jurisdiction that are causing or contributing to adverse trash impacts in receiving water(s)?

The monitoring tools and protocols shall include direct measurements and/or observations of trash in receiving water(s), or in scenarios where direct measurements or observations are not feasible, surrogates for trash in receiving waters, such as measurement or observations of trash on stream banks or shorelines.

- a. **Development and Testing Plan** - The observations shall be sufficient to determine whether a Permittee's trash control actions have effectively prevented trash from discharging into receiving waters, whether additional actions may be necessary associated with sources within a Permittee's jurisdiction, or whether there are ongoing sources outside of the Permittee's jurisdiction that are causing or contributing to adverse trash impacts in the receiving water(s). Permittees shall submit a plan acceptable to the Executive Officer by July 1, 2017, to develop and test receiving water monitoring tools and protocols that includes the following:
- (i) Description of the tools and protocols to be developed and tested;
  - (ii) Description of discharge and receiving water scenarios, which will be considered, that accounts for the various receiving waters and watershed, community, and drainage characteristics within Permittees' jurisdictions that affect the discharge of trash and its fate and effect in receiving water(s);
  - (iii) Description of factors, in addition to those in C.10.b.v.a.(ii), that will be considered and evaluated to determine scenarios and spatial and temporal representativeness of the tools and protocols;
  - (iv) Development of a system to manage and access monitoring results;
  - (v) Opportunity for input and participation by interested parties;
  - (vi) Scientific peer review of the tools and protocols and testing results;
  - (vii) Schedule for development and testing of the tools and protocols; and
  - (viii) Development of a proposed receiving monitoring program.
- b. **Report and Proposed Monitoring Program** - The observations shall be conducted a minimum of twice per year until the no trash in receiving water determination has been observed and then confirmed with a subsequent observation, after which the frequency may be reduced to once per year. Permittees shall report progress in the 2018 Annual Report, and submit a preliminary report by July 1, 2019, and a final report by July 1, 2020, on the development and testing of receiving water monitoring tools and protocols and a proposed trash receiving water monitoring program. The preliminary report is not required if the Permittees conduct this work through an independent third party that provides input and participation by interested parties and scientific peer review of the tools and protocols and testing results and proposed receiving monitoring program.

~~e.—A C.10.c Trash Hot Spot cleanup site downstream of a trash management area may serve as a receiving water observation site.~~

### C.10.c. Trash Hot Spot Selection and Cleanup

Trash Hot Spots in receiving waters shall be cleaned annually to achieve the multiple benefits of abatement of impacts and to learn more about the sources and transport routes of trash loading.

- i. **Trash Hot Spot Cleanup and Definition** – The Permittees shall clean selected Trash Hot Spots to a level of “no visual impact” at least one time per year for the term of the permit. Trash Hot Spots shall be sections of creek or shoreline significantly impacted by trash of at least 100 yards of creek length or 200 yards of shoreline length.
- ii. **Trash Hot Spot Selection** – Permittees shall maintain the same number of Trash Hot Spots identified in the Previous Permit term, which are included in Attachment E. Permittees may select new Trash Hot Spot locations if past locations are no longer Trash Hot Spots or if other locations may better align with trash management areas.
- iii. **Trash Hot Spot Assessments** – The Permittees shall quantify the volume of material removed from each Trash Hot Spot cleanup and attempt to identify sources to the extent readily feasible. Documentation of the cleanup activity to be retained by the Permittee shall include the trash condition before and after cleanup of the entire hot spot using photo documentation with a minimum of one photo per 100 feet of hot spot length and the total volume of trash and litter removed from the hot spot. Permittees shall report the volume removed for the most recent five years of hot spot cleanup in each Annual Report, or if a new Trash Hot Spot location is selected, Permittees shall report the volume removed for the years of cleanup of that hot spot.

### C.10.d. Trash Load Reduction Plans

Each Permittee shall maintain, and provide for inspection and review upon request, a Trash Load Reduction Plan, including an implementation schedule to meet the C.10.a Trash Load Reduction requirements. A summary of any new revisions to the Plan shall be included in the Annual Report. The Plan shall describe trash load reduction control actions being implemented or planned and the trash generation areas or trash management areas where the actions are or will be implemented, including jurisdiction-wide actions, such as source control ordinances

The Plans may include actions to control sources outside of the Permittee’s jurisdiction that are causing or contributing to adverse trash impacts in the receiving water(s). Permittees who choose to implement such control actions may account for them towards meeting the C.10.a Trash Load Reduction requirements as long as they can demonstrate the controls will be sustained and they quantify the sustained load reduction benefit relative to control actions in the trash generation areas or trash management areas in their jurisdiction that drained to the affected receiving water.

### C.10.e. Optional Trash Load Reduction Offset Opportunities

- i. **Additional Creek and Shoreline Cleanup** – A Permittee may offset part of its provision C.10.a Trash Load Reduction requirement by conducting additional cleanup of creek and shoreline areas beyond Trash Hot Spot cleanups required by C.10.c if the additional

cleanup efforts are conducted at a frequency of at least twice per year and sufficient to demonstrate sustained improvement of the creek or shoreline area. The maximum offset that may ~~in~~ be claimed is ~~five~~ten percent.

A Permittee may claim a load reduction offset of one percent for each total of trash volume removed from additional cleanups that is ten percent of the Permittee's 2009 trash load volume estimates, based on its trash generation maps and average categorical trash generation rates (see C.10.a.ii), in accordance with the following formula:

$$1\% \text{ Reduction Offset (Volume)} = (12 A_{\text{VH}(2009)} + 4 A_{\text{H}(2009)} + A_{\text{M}(2009)}) OF$$

where:

$A_{\text{VH}(2009)}$  = total amount of 2009 very high trash generation category jurisdictional area

$A_{\text{H}(2009)}$  = total amount of 2009 high trash generation category jurisdictional area

$A_{\text{M}(2009)}$  = total amount of 2009 moderate trash generation category jurisdictional area

12 = Very High to Moderate weighing ratio

4 = High to Moderate weighing ratio

$OF$  = offset factor equal to  $(7.5 \times 0.1)$ , where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.1 is the ten to one offset ratio.

- ii. **Direct Trash Discharge Controls**– A Permittee may offset an additional part of its provision C.10.a trash load percent reduction requirement by implementing a comprehensive plan approved by the Executive Officer for control of direct discharges of trash to receiving waters from non-storm drain system sources. The maximum offset that may be claimed is ~~ten~~fifteen percent using the C.10.e.i formula. The plan shall be submitted not later than February 1 of the first year in which the offset will be reported in the following~~with the 2016~~ Annual Report and shall include the following:

- a. description of sources of the directly discharged trash;
- b. description of control actions that will be implemented during the Permit term to prevent or reduce direct discharge trash loads in a systematic and comprehensive manner;
- c. map of the affected receiving water area and associated watershed; and
- d. description of how effectiveness of controls will be assessed, including documentation of controls, quantification of trash volume controlled, and assessment of resulting improvements to receiving water conditions.

#### C.10.f. Reporting

Each Permittee shall provide the following in each Annual Report:

- i. A summary of trash control actions within each trash management area, including the types of actions, levels of implementation, areal extent of implementation, and whether the actions are ongoing or new, including initiation date.

- ii. Upon request by the Executive Officer, ~~An an~~ updated trash generation area map or maps, and which includes associated trash management areas, including the locations and associated drainage areas and of full trash capture systems and ~~non-full trash capture system other~~ trash control actions, and the location of Trash Hot Spots, with highlight or other indication of any revisions or changes from the previous year map(s). These ~~maps are separate and distinct from corrections and/or revisions of the 2009 trash levels in the February 2014 maps and maps shall~~ can be used to illustrate progress toward achieving the trash reduction requirements in C.10.a.i.
- Should a Permittee correct and/or revise its 2009 trash generation map submitted in February 2014, the corrected or revised 2009 trash generation map, shall be submitted in the 2016 Annual Report, if the Permittee has not already submitted the corrected or revised map.
- iii. Certification that each of its full trash capture systems is operated and maintained to meet full trash capture system requirements; ~~and describe a description of~~ any systems that did not meet full trash capture system requirements (e.g., due to plugging or overflowing); ~~and~~ any corrective actions taken.
- iv. An accounting of its non-full trash capture system trash control actions assessments by providing a summary description of assessments in each of its trash management areas, including the number and dates of observations.
- v. An accounting of progress toward or attainment of C.10.a.i trash discharge reduction performance guidelines and mandatory deadlines using the C.10.a.ii trash generation area mapping methodology and formula.
- a. If a Permittee cannot demonstrate attainment of ~~a the 2016~~ performance guideline, it shall submit a detailed plan and schedule of implementation of additional trash load reduction control actions that will attain the 2017 subsequent mandatory deadline.
- b. If a Permittee cannot demonstrate attainment of the 2017 or 2019 mandatory trash load reduction deadline, it shall submit a report of non-compliance with the associated Annual Report, or in advance of the Annual Report, that describes actions to comply with the mandatory reduction deadline in a timely manner, ~~including thorough consideration of additional full trash capture systems. The report shall include a plan and schedule for implementation of full trash capture systems or a combination of full trash capture and measures equivalent to full trash capture, sufficient to attain the required reduction.~~
- vi. In the 2018 Annual Report, status of development and testing of receiving water monitoring tools and protocols and monitoring program development. C.10.b.v. receiving water observations, including the locations and times of observations and associated determinations. Pending EO acceptance of a monitoring proposal, reference can be made to the existing Trash Hot Spot Cleanup data.
- vii. The volume removed for the most recent five years of hot spot cleanup for each of its Trash Hot Spots, or for the years of cleanup if a new Trash Hot Spot location has been selected.

- viii. For Permittees claiming a C.10.e.i offset, based on additional cleanup of creek and shoreline areas, a summary description of the additional cleanup actions.
- ix. For Permittees claiming a C.10.e.ii offset, based on non-storm drain system trash controls, a summary description of control actions receiving water assessment results, quantification of trash volume controlled, and assessment of resulting improvements in receiving water condition, the claimed offset and documentation of information used in the C.10.e.i formula.

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## C.11. Mercury Controls

The Permittees shall implement the following control program for mercury. The Permittees shall perform the control measures (source control, treatment control, and pollution prevention strategies) and report on those control measures according to the provisions below. The provisions implement the urban runoff requirements of the San Francisco Bay and Guadalupe River Watershed mercury TMDLs and reduce mercury loads to make substantial progress toward achieving the urban runoff mercury load allocations established for the TMDLs. The aggregate, regionwide, urban runoff wasteload allocation from the San Francisco Bay mercury TMDL is 82 kg/yr. The TMDL implementation plan calls for attainment of the allocation by February 2028 and, as a way to measure progress, attainment of an interim loading milestone by February 2018 of 120 kg/yr, halfway between the 2003 estimated load, 160 kg/yr, and the aggregate allocation. The Permittees may comply with any requirement of this provision through a collaborative effort.

### C.11.a. Implement Control Measures to Achieve Mercury Load Reductions

- i. **Task Description** – Permittees shall implement mercury source and treatment control measures and pollution prevention strategies to reduce mercury loads throughout the area covered by ~~the this~~ Permit (permit-area).
- ii. **Implementation level** – To comply with this provision element, Permittees shall:
  - (1) Identify the watersheds or portions of watersheds (management areas) in which mercury control measures are currently being implemented and those in which new control measures will be implemented during the term of this Permit (many or most may be the same watersheds as those identified for C.12.a.ii(1));
  - (2) Identify the control measures that are currently being implemented and those that will be implemented in each watershed and management area (may be the same as those identified for C.12.a.ii(2)); ~~and~~
  - (3) Submit a schedule of control measure implementation-; and
  - (4) Implement mercury source and treatment control measures and pollution prevention strategies and Quantify mercury load reductions achieved by using the accounting methods established according to provision C.11.b.
- iii. **Reporting**
  - (1) The Permittees shall report by ~~February-April~~ 1, 2016, progress toward developing a list of the watersheds and management areas where mercury control measures are currently being implemented and those in which control measures will be implemented (C.11.a.ii(1)) during the term of this Permit as well as the monitoring data and other information used to select these watersheds and management areas.
  - (2) The Permittees shall report in their 2016 Annual Report the list of watersheds and management areas where control measures are currently

being implemented or will be implemented during the term of the Permit (C.11.a.ii(1)) along with the specific control measures (C.11.a.ii(2)) that are currently being implemented and those that will be implemented in these watersheds and management areas identified under C.11.a.iii(1) and an implementation schedule (C.11.a.ii(3)) for these control measures. ~~This~~ In addition to the list of watersheds and management areas, this report shall include:

- a. The number, type, and locations and/or frequency (if applicable) of control measures;
  - b. The description, scope, and start date of pollution prevention measures;
  - c. For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural BMPs or other relevant implementation milestones for structural and non-structural BMPs) and a schedule for milestone achievement; and
  - d. Clear statements of the roles and responsibilities of each participating Permittee for implementation of pollution prevention or control measures identified under C.11.a.iii(1~~2~~).
- (3) Beginning with the 2017 Annual Report and continuing in all Annual Reports, Permittees shall update all the information required under C.11.a.iii(2) as necessary to account for new control measures implemented, but not described, in the 2016 Annual Report.

#### C.11.b. Assess Mercury Load Reductions from Stormwater

- i. **Task Description** – The Permittees shall develop and implement an adequate assessment methodology and data collection program to quantify in a technically sound manner mercury loads reduced through implementation of any and all pollution prevention, source control, and treatment control measures, including mercury source control, stormwater treatment, green infrastructure, and other measures. ~~efforts required by this permit or load reductions achieved through other relevant efforts not explicitly required by this permit.~~ The Permittees shall use the assessment methodology to demonstrate progress toward achieving the load reductions required in this Permit term and the program area wasteload allocations.

A reasonable and technically sound foundation for the load reduction accounting system is described in the Fact Sheet and is based on information ~~was~~ submitted by the Permittees in ~~December 2013 in~~ the January 2014 Integrated Monitoring Report ~~for the previous permit~~. This task consists of documenting the method described in the Fact Sheet or any alternative methodology, updating and refining the accounting system to account for new information ~~the work from that document~~, justifying assumptions, analytical methods, sampling schemes and ~~selected~~ parameters used to quantify the load reduction ~~benefit~~ for each type of control measure, and indicating what

information will be collected and submitted to confirm the calculated load reduction ~~benefit~~ for each control measure implemented ~~unit of activity~~.

ii. **Implementation Level** – The Permittees shall adequately quantify the mercury load reductions achieved through implementing pollution prevention, source control, and treatment control efforts.

iii. **Reporting**

- (1) ~~In their 2016 Annual Report~~ In their 2016 Annual Report ~~the~~ Permittees shall submit, for Executive Officer approval, the assessment methodology and data collection program required in C.11.b.i. by April 1, 2016, a full description of an adequate measurement and estimation methodology and rationale for the approaches used to assess mercury load reductions achieved through mercury source control, stormwater treatment, green infrastructure projects, and other stormwater management measures implemented during the term of this permit.
- (2) ~~For control measures that become operational at any time during the year following June 30, 2020~~ of the permit term, the estimated load reduction value credited to the Permittee for this control measure shall be the estimated mercury load removed during one full year of operation. For control measures requiring construction or installation of new infrastructure that are under construction but not fully operational as of June 30, 2020 the end of the permit term, one half (50% percent) of the estimated mercury yearly load reduction shall may be counted towards the June 30, 2020 load reduction requirement in year 5 with the remaining 50% percent load reduction credited counted during the future year that the infrastructure element is fully operational.
- (3) ~~(2)~~ Beginning with the 2016-2017 Annual Report, Permittees shall report annually the loads reduced using the default (from Fact Sheet) or alternative approved ~~estimation~~ assessment methodology to demonstrate cumulative mercury load reduced from each control measure implemented since the beginning of the Permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates, including appropriate reference to the control measures described in the reporting required under C.11.a.
- (4) ~~(3)~~ In their 2018 and subsequent Annual Reports, the Permittees shall submit, for Executive Officer approval, any refinements, if necessary, to the measurement and estimation methodologies to assess mercury load reductions in the subsequent permit.

**C.11.c. Plan and Implement Green Infrastructure to reduce mercury loads**

- i. **Task Description** – Permittees shall implement green infrastructure projects during the term of the Permit to achieve the mercury load reduction performance criteria in Table 11.1. Green infrastructure projects on both public and private land can serve to achieve this load reduction requirement. ~~of 48~~

~~g/year over the final three years of the permit term.~~ Additionally, Permittees shall prepare a reasonable assurance analysis (see below and Fact Sheet) to demonstrate quantitatively that mercury load reductions of at least 10 kg/yr ~~throughout the Permit area~~ will be achieved by 2040 through implementation of green infrastructure ~~throughout the permit-area~~ ~~plans required by provision C.3.j.~~

**ii. Implementation Level**

- (1) ~~The~~ Permittees shall implement sufficient green infrastructure projects ~~so that mercury loads are collectively reduced by 48 g/yr by June 30, 2020, which shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2010 2020. Permittees shall to achieve county-specific load reduction performance criteria shown in Table 11.1 and demonstrate achievement of these load reductions by using the accounting methods approved under established according to~~ provision C.11.b.iii(1). Load reductions from green infrastructure projects implemented prior to the effective date of this Permit may be counted toward the required green infrastructure reductions of this Permit term if these projects were established and implemented during the Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term.

~~The Permittees may meet the load reduction as a group. The load reduction requirements summed over all Permittees within each county are set forth in Table 11.1. If neither the permit-area-wide total load reduction nor the county-specific load reduction is achieved, Permittees shall achieve load reductions consistent with their share of the county total. The individual Permittee share of the county load reduction is the proportion of county population in each municipality.~~

~~If all the Permittees in a county wish to use an alternative method of distributing the county load reductions, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions in the 2017 Annual Report. This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit.~~

~~For all Permittees combined, these county-specific average annual mercury load reductions from green infrastructure projects total 48 g/yr during each of the final three years of the permit. The green infrastructure load reduction performance criteria shall be assessed for compliance at the end of year 4 and will be computed as the average load reduction of years 3-5 (year 5 load reductions shall be estimated according to the predicted benefit of control measures that Permittees commit to implement in year 5).~~

~~Permittees shall report on the amount of mercury load reduction benefit associated with a unit of activity of green infrastructure control measure implementation as part of C.11.b(1). Permittees will be in compliance with the numeric load reduction performance criteria if they implement sufficient control measures such that the total benefit of the control measures actually implemented equals or exceeds the numeric load reduction criteria in Table 11.1. The Countywide Urban Runoff Programs are responsible for the specific portions of the Permit-wide green infrastructure load reduction shown in Table 11.1 below.~~

~~Green infrastructure implementation opportunities in mercury-contaminated areas will likely vary by jurisdiction. Therefore, all Permittees will be in compliance with the green infrastructure load reduction performance criteria as long as the total load reduction for the entire area covered by this permit (48 g/yr for years 3-5) is achieved.~~

~~If the area-wide total load reduction (i.e., 48 g/yr) performance criterion is not achieved, the Permittees in counties meeting the county-level load reduction criteria from Table 11.1 will be deemed in compliance with this Provision. If neither the area-wide total load reduction criterion nor the county-specific load reduction criterion are achieved, those Permittees will be deemed in compliance if they have achieved load reductions consistent with their proportion of the county total (reported under C.12.b.ii(1)).~~

**Table 11.1 Mercury Load Reduction Performance Criteria via Green Infrastructure Implementation by County**

<b>County <u>Permittees</u></b>	<b>Mercury Load Reduction (g/year) for final 3 years of <u>permit by June 30, 2020</u>, through green infrastructure implementation</b>
Alameda <u>Permittees</u>	15
Contra Costa <u>Permittees</u>	9
San Mateo <u>Permittees</u>	6
Santa Clara <u>Permittees</u>	16
<u>Solano Permittees:</u> Suisun City, Vallejo, Fairfield	2
<b>Totals</b>	<b>48</b>

- (2) Permittees shall prepare a reasonable assurance analysis of future mercury load reductions by doing the following:
  - a. Quantify the relationship between areal extent of green infrastructure implementation and mercury load reductions. This quantification should

take into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies.

- b. Estimate the amount and characteristics of land area that will be treated through green infrastructure by ~~future years~~ 2020, 2030, and 2040.
- c. Estimate the amount of mercury load reductions that will result from green infrastructure implementation by ~~future years~~ 2020, 2030, and 2040.
- d. Quantitatively demonstrate that mercury reductions of at least 10 kg/yr will be realized by 2040 through implementation of green infrastructure projects.
- e. Ensure that the calculation methods, models, model inputs, and modeling assumptions used to fulfill C.11.c.ii(2)(~~4a-4d~~) have been validated through a peer review process.

### iii. Reporting

- (1) The Permittees shall submit in their ~~2017-2018~~ Annual Report, (as part of reporting for C.11.b.iii(~~42~~)), the quantitative relationship between green infrastructure implementation and mercury load reductions. This submittal shall include all data used and a full description of models and model inputs relied on to establish this relationship.
- (2) The Permittees shall submit in their ~~2019-2020~~ Annual Report an estimate of the amount and characteristics of land area that will be treated through green infrastructure implementation by ~~future years~~ 2020, 2030, and 2040. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.
- (3) The Permittees shall submit in their ~~2019-2020~~ Annual Report a reasonable assurance analysis to demonstrate quantitatively that mercury reductions of at least 10 kg/yr will be realized by 2040 through implementation of green infrastructure projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.
- (4) The Permittees shall submit as part of reporting for C.11.b.iii(2), beginning with their 2019 Annual Report, an estimate of the amount of mercury load reductions resulting from green infrastructure implementation during the term of the Permit. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.
- (5) All Permittees in a county may submit, in the 2017 Annual Report, an alternative (different from the population-based default described in C.11.c.ii(1)) and supporting information to derive Permittee-specific proportions of load reduction criteria.

#### C.11.d. Prepare Implementation Plan and Schedule to Achieve TMDL Allocations

- i. **Task Description** – Permittees shall prepare a plan and schedule for mercury control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the mercury TMDL wasteload allocations by 2028. This plan may share many elements of a similar plan developed for PCBs according to Provision C.12.d.
- ii. **Implementation level** – Permittees shall prepare a mercury control measure implementation plan and corresponding reasonable assurance analysis that demonstrates quantitatively that the plan will result in mercury load reductions sufficient to attain the mercury TMDL wasteload allocations by 2028. The plan must:
  - (1) Identify all technically and economically feasible mercury control measures (including green infrastructure projects) to be implemented;
  - (2) Include a schedule according to which these technically and economically feasible control measures will be fully implemented; and
  - (3) Provide an evaluation and quantification of the mercury load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

- iii. **Reporting**

Permittees shall submit the plan and schedule in the ~~2019~~2020 Annual Report.

#### C.11.e. Implement a Risk Reduction Program

- i. **Task Description** – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of mercury in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence fishers and their families. The risk reduction framework developed in the Previous Permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach.
- ii. **Implementation Level**
  - (1) At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement.
  - (2) In year four of the permit term, Permittees shall evaluate the effectiveness of their risk reduction program.

- iii. **Reporting** – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their 2020 Annual Report ~~on year four of the permit term.~~

## C.12. Polychlorinated Biphenyls (PCBs) Controls

The Permittees shall implement the following control program for PCBs. The Permittees shall implement PCBs control measures (source control, treatment control, and pollution prevention strategies) in areas where benefits are most likely to accrue (focused implementation) and report on those control measures according to the provisions below. The provisions implement the urban runoff requirements of the PCBs TMDL. Permittees shall reduce PCBs loads by a specified amount during the term of the Permit, thereby making substantial progress toward achieving the urban runoff PCBs wasteload allocation in the Basin Plan. The allocation, on an aggregate and regionwide basis, ~~of~~ is 2 kg/yr (1.6 kg/yr allocated to Permittees) to be achieved by March 2030. This wasteload allocation represents ~~(representing~~ a load reduction from all urban runoff sources to the Bay of approximately 18 kg/yr (14.4 kg/yr from Permittees) compared to loads estimated using data collected in 2003), ~~is to be achieved by March 2030~~. The Permittees may comply with any requirement of this Provision through a collaborative effort.

### C.12.a. Implement Control Measures to Achieve PCBs Load Reductions.

- i. **Task Description** – Permittees shall implement PCBs source and treatment control measures and pollution prevention strategies to achieve PCBs load reductions in Table 12.1 throughout the area covered by ~~the this~~ Permit (permit-area).
- ii. **Implementation level** –To comply with this provision element, Permittees shall:
  - (1) Identify the watersheds or portions of watersheds (management areas) in which PCBs control measures are currently being implemented and those in which new control measures will be implemented during the term of this permit;
  - (2) Identify the control measures that are currently being implemented and those that will be implemented in each watershed and management area; ~~and~~
  - (3) Submit a schedule of control measure implementation; ~~and~~
  - (4) Implement sufficient control measures to achieve the permit-area-wide reduction stated below or the county-specific load reduction performance criteria shown in Table 12.1. The Permittees shall ~~and~~ demonstrate achievement of these load reductions by using the accounting methods described in the Permit Fact Sheet and documented according to as required in provision C.12.b. Load reductions from control measures implemented prior to the effective date of this Permit may be counted toward the required reductions of this Permit term if these control measures were established or implemented during the Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term (e.g., they were implemented after the load reduction accounting 2014 Integrated Monitoring Report was submitted).

For all Permittees combined, these county-specific average annual PCBs load reduction performance criteria shall total 0.5 kg/yr by June 30, 2018, during each of the first two years of the permit and 3.0 kg/yr by June 30, 2020 during each of the final three years of the permit. The June 30, 2020, deadline shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by

~~December 31, 2020. The 0.5 kg/yr reduction (and county-specific portions thereof) shall be assessed for compliance at the end of year 2 and shall be computed as the average of the year 1 and year 2 load reduction. Similarly, the 3.0 kg/yr reduction (and county-specific portions thereof) shall be computed as the average of years 3-5 and shall be assessed for compliance at the end of year 4 (year 5 load reductions will be estimated according to the predicted benefit of control measures which Permittees commit to implement in year 5). The Fact Sheet stipulates-describes the amount of PCBs load reduction benefit associated with implementing a unit of activity for a number of control measures. Permittees will be in compliance with the numeric load reduction performance criteria if they implement sufficient control measures such that the total stipulated benefit of the control measures actually implemented equals or exceeds the numeric load reduction performance criteria shown in Table 12.1 below.~~

~~The Permittees may meet the load reductions as a group. The load reduction requirements summed over all Permittees within each county are The Countywide Urban Runoff Programs are responsible for specific portions of the Permit-wide load reduction requirement is stated shown set forth in Table 12.1. These county-specific load reduction performance criteria allocate responsibility for load reductions to individual county programs according to the same proportions used to establish county-specific wasteload allocations (and corresponding load reductions) in the PCBs TMDL.~~

~~Load reduction opportunities will likely vary by jurisdiction. Some jurisdictions (e.g., those with a higher proportion of old industrial land use) may have more PCBs-contaminated sites, and hence, greater potential opportunities to implement control measures to reduce loads. Further, the total PCBs load reduction across the entire area covered under this permit is relevant to the recovery of San Francisco Bay. Therefore, all Permittees will be in compliance with the load reduction performance criteria as long as the total load reductions for the entire area covered by this permit (500 g/yr for years 1-2 and 3 kg/yr for years 3-5) are achieved.~~

~~If the area-wide total load reduction criteria (i.e., 500 g/yr and 3000 g/yr) are not achieved, the Permittees in counties meeting the county-level load reduction criteria from Table 12.1 will be deemed in compliance with this Provision. If neither the permit-area-wide total load reduction criteria nor the county-specific load reduction criteria-criterion are is achieved, those Permittees will be deemed in compliance if they have shall achieved load reductions consistent with their appropriate share proportion of the county total. The individual Permittee share of the county load reduction performance criteria is the proportion of county population in each municipality.~~

~~If all the Permittees in a county wish to use an alternative method of distributing the county load reductions, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions~~

~~in the 2017 Annual Report by April 2016 (see C.12.b(1) below). This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit. As a default, the Permittees share of the county load reduction performance criteria will be allocated by the proportion of county population in each municipality.~~

**Table 12.1 PCBs Load Reductions Performance Criteria by County**

<b>County <del>Program</del></b>	<b>PCBs load reduction (g/yr) during first two years of permit by <u>June 30, 2018</u></b>	<b>PCBs Load Reduction (g/yr) for final 3 years of permit by <u>June 30, 2020</u></b>
Alameda <del>Permittees</del>	160	940
Contra Costa <del>Permittees</del>	90	560
San Mateo <del>Permittees</del>	60	370
Santa Clara <del>Permittees</del>	160	940
<del>Solano Permittees:</del> Suisun City, Vallejo, Fairfield	30	190
<b>Totals</b>	<b>500</b>	<b>3000</b>

**iii. Reporting**

- (1) The Permittees shall report by ~~February-April~~ 1, 2016, progress toward developing a list of the watersheds ~~(or portions therein)~~ and management areas where PCBs control measures are currently being implemented and those in which control measures will be implemented (C.12.a.ii(1)) during the term of this Permit as well as the monitoring data and other information used to select these watersheds and management areas. This list should include watersheds containing contaminated sites referred to the Water Board as well.
- (2) The Permittees shall report in their 2016 Annual Report the list of watersheds and management areas where control measures are currently being implemented or will be implemented during the term of the Permit (C.12.a.ii(1)) along with the specific control measures (C.12.a.ii(2)) that are currently being implemented and those that will be implemented in these watersheds and management areas identified under C.12.a.iii(1) and an implementation schedule (C.12.a.ii(3)) for these control measures. In addition to the list of watersheds and management areas, this report shall include:
  - a. The number, type, and locations and/or frequency (if applicable) of control measures;
  - b. A cumulative listing of all The identity and description of the potentially PCB-contaminated sites Permittees have discovered and referred to the

- Water Board to date, with a brief summary description of each site and where to obtain further information during permit term;
- c. The description, scope, and start date, of ~~pollution prevention~~ PCBs control measures;
  - d. For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement; and
  - e. Clear statements of the roles and responsibilities of each participating Permittee for implementation of pollution prevention or control measures identified under C.12.a.iii(2).
- (3) Beginning with the 2017 Annual Report and continuing in all Annual Reports, Permittees shall update all the information required under C.12.a.iii(2) as necessary to account for new control measures implemented but not described in the 2016 Annual Report.
- (4) All Permittees in a county may submit, in the 2017 Annual Report, an alternative (different from the default described in C.12.a.ii(4)) and supporting information to derive Permittee-specific proportions of load reduction criteria.

#### C.12.b. Assess PCBs Load Reductions from Stormwater

**i. Task Description** – The Permittees shall develop, document, and implement an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of ~~any and all~~ pollution prevention, source control, and treatment control ~~efforts-measures, including PCBs source control, stormwater treatment, green infrastructure and other measures required by the provisions of this permit or load reductions achieved through other relevant efforts not explicitly required by the provisions of this permit.~~ The Permittees shall use the assessment methodology to demonstrate progress toward achieving the ~~interim~~ load reduction ~~milestones to be achieved during the~~ required in this Permit term-of the permit and ~~demonstrate progress toward attainment of the~~ the program area wasteload allocations.

A reasonable ~~foundation for the and technically sound~~ load reduction accounting system is described in the Fact Sheet and is based on information submitted by Permittees in the December-January 20134 in the Integrated Monitoring Report ~~for the previous permit.~~ This task ~~element~~ consists of documenting the approach-method described in the Fact Sheet or any alternative methodology, updating and refining the accounting system to account for new information, justifying assumptions, analytical methods, sampling schemes and ~~selected~~ parameters used to quantify the load reduction ~~benefit~~ for each type of control measure, and indicating what information will be collected and submitted to confirm the calculated load reduction ~~benefit~~ for each unit of activity.

**ii. Implementation Level** – The Permittees shall adequately quantify the PCBs load reductions achieved through implementing all the pollution prevention, source control, and treatment control efforts measures Permittees will implement in this Permit term, except for measures to manage PCB-containing materials and wastes during building demolitions (C.12.f).

For this Permit term, the Permittees will receive a total of 2000 g/yr (2 kg/yr) PCBs load reduction value if they have developed and implemented effective protocols for managing PCB-containing materials during demolition so that PCBs do not drain into the MS4 as required in provision C.12.f. The 2000 g/yr PCBs load reduction value shall be in furtherance of meeting the June 30, 2020, 3000 g/yr requirement in Table 12.1.

The Permittee-specific portion of the 2000 g/yr PCBs load reduction value shall be based on the proportion of county population in each municipality. If all the Permittees in a county wish to use an alternative method of distributing the county load reductions for managing PCB-containing materials during demolition, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions in the 2019 Annual Report. This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit.

### iii. Reporting

(1) In their 2016 Annual Report ~~The Permittees shall submit for approval by the Executive Officer by April 1, 2016, a full description of the assessment methodology and data collection program required in C.12.b.i. and described in C.12.b.ii an adequate measurement and estimation methodology and rationale for the approaches used to assess PCBs load reductions achieved through PCBs source control, stormwater treatment, green infrastructure projects, and other stormwater management measures implemented during the term of this permit. This methodology shall justify the choices for parameters used to estimate load reduction benefits and identify the data that will be collected and submitted in support of any claim of load reductions benefit associated with implemented control measures.~~

~~For control measures that become operational at any time during year 5 of the permit term, the estimated load reduction credited to the Permittee for this control measure shall be the estimated PCBs load removed during one full year of operation. For control measures requiring construction or installation of new infrastructure that are under construction but not fully operational as of the end of the permit term, one half (50%) of the estimated PCBs yearly load reduction shall be counted in year 5 with the remaining 50% load reduction credited during the future year that the infrastructure element is fully operational.~~

(2) Beginning with the ~~2016~~2017 Annual Report, Permittees shall report annually the loads reduced using the default (from the Fact Sheet) or alternative approved

~~estimation-assessment~~ methodology to demonstrate cumulative PCBs load reduced from each control measure implemented since the beginning of the Permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates, including appropriate reference to the control measures described in the reporting required under C.12.a.

(3) In their 2018 and subsequent Annual Reports, the Permittees shall submit, for Executive Officer approval, any refinements, if necessary, to the measurement and estimation methodologies to assess PCBs load reductions in the subsequent Permit.

(4) All Permittees in a county may submit, in the 2019 Annual Report, an alternative (different from the default population-based method) and supporting information to derive Permittee-specific shares of load reduction value associated with implementation of C.12.f.

**C.12.c. Plan and Implement Green Infrastructure to reduce PCBs loads**

**i. Task Description** – Permittees shall implement green infrastructure projects during the term of the Permit to achieve PCBs load reductions ~~performance criteria in Table 12.2 of 120 g/year over the final three years of the permit term in furtherance of meeting the 3000 g/year load reduction~~ criteria required in C.12.a.ii.(4) and Table 12.1. Green infrastructure projects on both public and private land can serve to achieve this load reduction requirement. Additionally, Permittees shall prepare a reasonable assurance analysis (see below and the Fact Sheet) to demonstrate quantitatively that PCBs load reductions of at least 3 kg/yr ~~throughout the Permit area~~ will be achieved by 2040 through implementation of green infrastructure throughout the permit-area plans required by Provision C.3.j.

**Table 12.2 PCBs Load Reduction Performance Criteria via Green Infrastructure Implementation by County**

<b>County <u>Program Permittees</u></b>	<b>PCBs Load Reduction (g/yr) <u>for final 3 years of permit by June 30, 2020, through green infrastructure</u></b>
Alameda <u>Permittees</u>	37
Contra Costa <u>Permittees</u>	23
San Mateo <u>Permittees</u>	15
Santa Clara <u>Permittees</u>	37
<u>Solano Permittees:</u> Suisun City, Vallejo, Fairfield	8
<b>Totals</b>	<b>120</b>

**ii. Implementation Level**

The Permittees ~~collectively~~ shall implement green infrastructure projects ~~to the extent so that PCBs loads are collectively reduced by 120 g/yr by June 30, 2020, which shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2020. Permittees shall and~~ demonstrate achievement of these load reductions by using the accounting methods ~~established according to approved under~~ provision C.12.b.iii(1). ~~PCBs load reductions achieved through implementation of green infrastructure may be counted as part of the overall load reductions required during this permit term under C.12.a.ii(4).~~ Load reductions from green infrastructure projects implemented prior to the effective date of this Permit may be counted toward the required green infrastructure reductions of this Permit term if these projects were established and implemented during the Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term.

The Permittees may meet the load reduction as a group. The load reduction requirements summed over all Permittees within each county are set forth in Table 12.2. If neither the permit-area-wide total load reduction nor the county-specific load reduction is achieved, Permittees shall achieve load reductions consistent with their share of the county total under provision C.12.a.ii(4).

~~For all Permittees combined, these county specific average annual PCBs load reductions from green infrastructure projects total 120 g/yr during each of the final three years of the permit. The green infrastructure load reduction shall be assessed for compliance at the end of year 4 and shall be computed as the average load reduction of years 3-5 (year 5 load reductions will be estimated according to the predicted benefit of control measures which Permittees commit to implement in year 5).~~

~~The Fact Sheet contains land use yield information that allows one to calculate the amount of PCBs load reduction benefit associated with a unit of activity of green infrastructure control measure implementation. Permittees will be in compliance with the numeric load reduction performance criteria if they implement sufficient control measures such that the total stipulated benefit of the control measures actually implemented equals or exceeds the numeric load reduction criteria in Table 12.2. The Countywide Urban Runoff Programs are responsible for the specific portions of these Permit area totals shown in Table 12.2 below.~~

~~Green infrastructure implementation opportunities in PCBs contaminated areas will likely vary by jurisdiction. Therefore, all Permittees will be in compliance with the green infrastructure load reduction performance criteria as long as the total load reduction for the entire area covered by this permit (120 g/yr for years 3-5) is achieved.~~

~~If the area-wide total load reduction (i.e. 120 g/yr) performance criterion is not achieved, the Permittees in counties meeting the county-level load reduction criteria from Table 12.2 will be deemed in compliance with this Provision.~~

- (2) Permittees shall prepare a reasonable assurance analysis that demonstrates how green infrastructure will be implemented in order to achieve a PCBs load reduction of 3 kg/yr across the permit-area by 2040. This analysis shall include the following:
  - a. Quantify the relationship between areal extent of green infrastructure implementation and PCBs load reductions, taking into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies;
  - b. Estimate the amount and characteristics of land area that will be treated through green infrastructure by 2020, 2030, and 2040;
  - c. Estimate the amount of PCBs load reductions that will result from green infrastructure implementation by 2020, 2030, and 2040;
  - d. Quantitatively demonstrate that PCBs reductions of at least 3 kg/yr will be realized by 2040 through implementation of green infrastructure projects; and
  - e. Ensure that the calculation methods, models, model inputs and modeling assumptions used to fulfill C.12.c.ii(2)a-d have been validated through a peer review process.

### iii. Reporting

- (1) The Permittees shall submit in their ~~2017~~2018 Annual Report, as part of reporting for C.12.b.iii.(13), the quantitative relationship between green infrastructure implementation and PCBs load reductions. This submittal shall include all data used and a full description of models and model inputs relied on to establish this relationship.
- (2) The Permittees shall submit in their ~~2019~~2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through green infrastructure implementation by ~~future years~~ 2020, 2030, and 2040. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.
- (3) The Permittees shall submit in their ~~2019~~2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively that PCBs reductions of at least 3 kg/yr will be realized by 2040 through implementation of green infrastructure projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.
- (4) The Permittees shall submit as part of reporting for C.12.b.iii(24), beginning with their 2019 Annual Report an estimate of the amount of PCBs load reductions resulting from green infrastructure implementation during the term of

the Permit. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.

**C.12.d. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations**

- i. Task Description** – Permittees shall prepare a plan and schedule for PCBs control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.
- ii. Implementation level** – Permittees shall prepare a PCBs control measures implementation plan and corresponding reasonable assurance analysis that demonstrates quantitatively that the plan will result in PCBs load reductions sufficient to attain the PCBs TMDL wasteload allocations by 2030. The plan must:
  - (2) Identify all technically and economically feasible PCBs control measures to be implemented (including green infrastructure projects); and
  - (3) Include a schedule according to which these technically and economically feasible control measures will be fully implemented; and
  - (4) Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

**iii. Reporting**

Permittees shall submit the plan and schedule in the ~~2019~~2020 Annual Report.

**C.12.e. Evaluate PCBs Presence in Caulks/Sealants Used in Storm Drain or Roadway Infrastructure in Public Rights-of-Way**

- i. Task Description** –Permittees shall collect samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement and investigate whether PCBs are present in such material and in what concentrations. PCBs are most likely present in material applied during the 1970s, so the focus of the investigations should be on structures installed during this era.

**ii. Implementation Level**

Permittees shall collect at least 20 composite samples (throughout the ~~Permit permit-~~area) of the caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way and analyze this material for PCBs in such a way as to be able to detect a minimum PCBs concentration of 200 parts per billion. This sampling and analysis will count toward partial fulfillment of the monitoring effort aimed at finding PCBs sources (see management information need in C.8.f).

**iii. Reporting**

Permittees shall report on the results (including all data gathered) of this investigation no later than the ~~2017-2018~~ Annual Reports.

**C.12.f. Manage PCB-Containing Materials and Wastes During Building Demolition Activities So That PCBs Do Not Enter Municipal Storm Drains**

- i. **Task Description** – Permittees shall develop and implement or cause to be developed and implemented an effective framework-protocol for managing PCB-containing materials with PCBs concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition so that PCBs do not enter MS4s. ~~Permittees shall implement or cause to be implemented the PCB management framework so that PCBs are not likely to be released off the site and PCBs from these structures can enter storm drains during and/or after demolition through vehicle track-out, airborne releases, soil erosion, or stormwater runoff.~~

Applicable ~~projects-structures shall~~ include, at a minimum, commercial, public, institutional and industrial structures constructed or remodeled between the years 1950 and 1980 with building materials with PCBs concentrations of 50 ppm or greater. Single-family residential and wood frame structures are exempt.

A Permittee is exempt from this requirement if it provides evidence acceptable to the Executive Officer that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.

**ii. Implementation Level**

- (1) ~~During years one, two, and three of the permit term, the~~ The Permittees shall develop a framework-protocol, to by June 30, 2019, that includes each of the following components, at a minimum:
- a. ~~The~~ establishing any necessary authority, to ensure that PCBs do not enter MS4s from for managing PCB-containing materials in applicable structures at the time such structures undergo demolition;
  - b. A method for identifying applicable structures prior to their demolition;  
and
  - c. Method(s) for ensuring PCBs are not discharged or available for discharge to the storm drain from demolition of applicable structures as a result of building demolition.
- (2) ~~By July 1, 2019, At the start of the fourth year of the permit term and thereafter,~~ the Permittees shall implement or cause to be implemented the PCBs management ~~framework-protocol for ensuring so that PCBs are not likely to be released off the site are not discharged to MS4s during or after from~~ demolition of applicable structures via vehicle track-out, airborne releases, soil erosion, or stormwater runoff.
- (3) ~~By July 1, 2019, Permittees shall develop an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of the protocol for controlling PCBs during building demolition of applicable structures.~~

**iii. Reporting**

- (1) In their 2016, 2017, and 2018 Annual Reports, the Permittees shall summarize the steps they have taken to begin implementing this requirement, which could include working with State and local agencies on inter-agency coordination regarding building demolitions, developing ordinances or policies, obtaining information materials, updating or supplementing permit application materials, developing a tracking tool for potential PCB-containing structures, and training relevant staff as needed to comply with this sub-provision.
- (2) Each Permittee seeking exemption from C.12.f requirements must submit in its 2017 Annual Report documentation, such as historic maps or other historic records, that clearly demonstrates that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.
- (3) Beginning with In their 2019/2020 Annual Report and thereafter, the Permittees shall list all applicable structures that have applied for a demolition permit, with the structure's address, project proponent contact information, and dates of permit application and issuance for each project provide documentation demonstrating implementation with each of the minimum requirements in C.12.f.ii(1)(a)-(c).
- (4) In their 2020 Annual Report and thereafter, the Permittees shall provide documentation of each of the following items:
  - a. The number of applicable structures that applied for a demolition permit during the reporting year; and
  - b. A running list of the applicable structures that applied for a demolition permit (since the date the PCBs control protocol was implemented) that had material(s) with PCBs at 50 ppm or greater, with the address, demolition date, and brief description of PCBs control method(s) used.
- (5) In their 2020 Annual Report, Permittees shall submit an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the protocol for controlling PCBs during building demolition. This should be reported at the regional level on behalf of all Permittees.

#### **C.12.g. Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins**

- i. Task Description** – The Permittees shall conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas.
- ii. Implementation Level** – The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the sediment and food web PCBs concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, especially in Bay margins,

and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.

- iii. **Reporting** – The Permittees shall submit in their 2017 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a preliminary schedule. The Permittees shall report on status of the studies in their 2018 Annual Report. The Permittees shall report in the March 15, ~~2019~~2020, Integrated Monitoring Report the findings and results of the studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted or implemented in future permit cycles.

#### C.12.h. Implement a Risk Reduction Program

- i. **Task Description** – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of PCBs in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence fishers and their families. The risk reduction framework developed in the Previous Permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach. Permittees should work with local health departments, the Bay Area Clean Water Agencies, and the Western States Petroleum Association to leverage resources for this program and to appropriately target at-risk populations.
- ii. **Implementation Level**
  - (1) At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3,000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement.
  - (2) In year four of the Permit term, Permittees shall evaluate the effectiveness of their risk reduction program.
- iii. **Reporting** – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their ~~2019-2020~~ Annual Report.

### C.13. Copper Controls

The Permittees shall implement the following control program for copper. The Permittees shall implement the control measures and accomplish the reporting on those control measures according to the provisions below. The purpose of these provisions is to implement the control measures identified in the Basin Plan amendment necessary to support the copper site-specific objectives in San Francisco Bay. The Permittees may comply with any requirement of C.13 Provisions through a collaborative effort.

#### C.13.a. Manage Waste Generated from Cleaning and Treating of Copper Architectural Features, Including Copper Roofs, during Construction and Post-Construction.

- i. **Task Description** – The Permittees shall prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of the surface of copper architectural features, including copper roofs.
- ii. **Implementation Level**
  - (1) The Permittees shall require, when issuing building permits, use of appropriate BMPs for managing waste during and post-construction.
  - (2) The Permittees shall educate installers and operators on appropriate BMPs for managing copper-containing wastes.
  - (3) The Permittees shall enforce against noncompliance.
- iii. **Reporting**
  - (1) In the 2016 Annual Report, the Permittees shall certify that legal authority currently exists to prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of copper architectural features, including copper roofs.
  - (2) In the 2016 Annual Report, the Permittees shall report how copper architectural features are addressed through the issuance of building permits.
  - (3) The Permittees shall report annually permitting and enforcement activities.

#### C.13.b. Manage Discharges from Pools, Spas, and Fountains that Contain Copper-Based Chemicals

- i. **Task Description** – Permittees shall prohibit discharges to storm drains from pools, spas, and fountains that contain copper-based chemicals.
- ii. **Implementation Level** – The Permittees shall either: 1) require installation of a sanitary sewer discharge connection for pools, spas, and fountains, including connection for filter backwash, with a proper permit from the POTWs; or 2) require diversion of discharge for use in landscaping or irrigation.

**iii. Reporting**

- (1) In the 2016 Annual Report, the Permittees shall certify that legal authority currently exists to prohibit the discharges to storm drains of water containing copper-based chemicals from pools, spas, and fountains.
- (2) In the 2016 Annual Report, the Permittees shall report how copper-containing discharges from pools, spas, and fountains are addressed to accomplish the prohibition of the discharge.
- (3) The Permittees shall report annually on any enforcement activities.

**C.13.c. Industrial Sources**

**i. Task Description** – The Permittees shall ensure industrial facilities do not discharge elevated levels of copper to storm drains by ensuring, through industrial facility inspections, that proper BMPs are in place.

**ii. Implementation Level**

- (1) As part of industrial site controls required by Provision C.4, the Permittees shall identify facilities likely to use copper or have sources of copper (e.g., plating facilities, metal finishers, auto dismantlers) and include them in their inspection program plans.
- (2) The Permittees shall educate industrial inspectors on industrial facilities likely to use copper or have sources of copper and proper BMPs for them.
- (3) As part of the industrial inspection, inspectors shall ensure that proper BMPs are in place at such facilities to minimize discharge of copper to storm drains, including consideration of roof runoff that might accumulate copper deposits from ventilation systems on site.

**iii. Reporting**

The Permittees shall highlight copper reduction results in the industrial inspection component in the C.13 portion of each Annual Report.

### C.14. City of Pacifica and San Mateo County Fecal Indicator Bacteria Controls

The City of Pacifica (City) and San Mateo County (County) Permittees shall implement ~~the this~~ Provision C.14 for fecal indicator bacteria. The City and County shall implement fecal indicator bacteria control measures in areas where benefits are most likely to accrue (focused implementation) and report on those control measures according to this provision. The goal of this provision is to implement the urban runoff (stormwater runoff and dry weather flows) requirements of the San Pedro Creek (Creek) and Pacifica State Beach (Beach) Indicator Bacteria TMDL (TMDL) and reduce exceedances of the bacterial water quality objectives for the water contact recreation beneficial use during the term of the Permit, thereby making substantial progress toward achieving the TMDL wasteload allocations. The wasteload allocations and the dates they must be attained by are listed in Table 14.1 below. The City and County may comply with any requirement of this ~~P~~provision through a collaborative effort.

	San Pedro Creek		Pacifica State Beach		
	Dry Weather	Wet Weather	Summer Dry Weather (Apr. 1 to Oct. 31)	Winter Dry Weather (Nov. 1 to Mar. 31)	Wet Weather <sup>4</sup>
Allowable Exceedances of Single-Sample Objectives (assuming daily sampling is conducted) <sup>1,2</sup> .	4	26	0	2	30
Allowable Exceedances of Single-Sample Objectives (assuming weekly sampling is conducted) <sup>3</sup>	1	4	0	1	5
Attainment Date	August 1, 2028	August 1, 2028	August 1, 2021	August 1, 2021	August 1, 2021

1. Allowable exceedances are calculated by multiplying exceedance rates observed in the Reference System(s) by the Number of Days during each respective period in the reference year (1994).
2. To end up with whole numbers, where the fractional remainder for the calculated allowable exceedance days exceeds 0.1, the number of days is rounded up.
3. To determine the allowable number of exceedance events given a weekly sampling regime, as practiced for monitoring San Pedro Creek and Pacifica State Beach, the number of exceedance days was adjusted by solving for “X” in the following equation:  $X = (\text{exceedance days} \times 52 \text{ weeks}) / 365 \text{ days}$ .
4. Wet weather is defined as any day with 0.1 inches of rain or more and the following three days.

#### C.14.a Implement Control Measures to Achieve Indicator Bacteria Wasteload Allocations.

- i. Task Description** – The City and County shall implement bacteria control measures and pollution prevention strategies to prevent or reduce discharges of

bacteria from their storm drain systems to meet the stormwater TMDL wasteload allocations in the San Pedro Creek watershed and Pacifica State Beach Indicator Bacteria TMDL (TMDL Project Area).

**ii. Implementation Level** – In order to comply with this provision element:

- (1) The County shall ~~effectively address-prohibit~~ potential illicit discharges into its storm sewer system from sanitary sewer overflows or the sanitary sewer lines within its jurisdiction, ~~as follows:~~
  - ~~(a) Implement a cleaning program for all sewer lines at a frequency of no greater than once every five years.~~
  - ~~(b) Implement an inspection program for all sewer lines at a frequency of no greater than once every 10 years.~~
  - ~~(c) Repair or replace any failing sewer line(s) within 6 (six) months of discovery.~~
- (2) The County shall address bacteria discharges from the existing and future commercial horse and dog kennel facilities (facilities) into its storm sewer system within its jurisdiction as follows:
  - (a) Conduct annual site inspections of each facility for code compliance by June 30 of each year, beginning in 2016.
  - (b) Conduct an annual compliance review of each facility's current manure, stormwater, and drainage management plans by June 30 of each year, beginning in 2016.
  - (c) Enforcement actions for noncompliant facilities will be in line with the County's Confined Animal Ordinance.
- (3) The City shall address bacteria discharges from the existing and future commercial horse facilities (facilities) within its jurisdiction as follows:
  - (a) Review each facility's compliance with the City's Administrative Policy on "Standards for Keeping Animals."
  - (b) Review each facility's compliance with the City's Municipal Code on "Animal Excreta."
  - (c) Conduct annual compliance review and inspection of each facility by June 30 of each year, beginning in 2016.
  - (d) Take progressive enforcement action(s), as needed, to bring noncompliant facilities into compliance with the City's Administrative Policy on "Standards for Keeping Animals" and Municipal Code on "Animal Excreta."
- (4) The City shall install new dog waste clean-up signs, waste bag dispensers, and trash cans at a minimum of 10 (ten) high priority locations within the TMDL Project Area (each site to receive all three elements: sign, bag dispenser, and trash can, unless some of the elements are already in place) by June 30, 2016. The high priority sites for these installations shall be determined via visual inspections of popular dog walking areas and their

potential to discharge improperly deposited dog waste to the Creek or Beach.

- (5) The City shall develop and implement a visual inspection and clean-up plan for high dog waste accumulation areas along San Pedro Creek and its tributaries by June 30, 2016. From April 1 through October 31, inspections and clean-ups shall, at a minimum, be conducted on a quarterly basis (e.g., once each in April, July, and October). From November 1 through March 31, inspections and clean-ups shall be conducted prior to forecast rain events with a forecast rainfall depth of 0.40.2 inches or more (as measured at Half Moon Bay Airport (KHAF) Meteorological Station), and at a frequency of no less than once a month.
- (6) The City shall develop and implement an enhanced pet waste public outreach and education campaign by ~~December 31, 2015~~ June 30, 2016, that, at a minimum, includes all the following:
  - (a) Explore the possibility of establishing a new public pet waste management stakeholder group (e.g., formal or informal dog owners club).
  - (b) Prepare and implement public service announcements regarding pet waste management and associated impacts to the Creek and Beach to play on the local television station and to include in print ads in the Pacifica Tribune.
  - (c) Distribute a mailer with an informational brochure to residents and businesses describing proper pet waste management, the linkage of the watershed to the Creek and Beach, and the adverse impact on those water bodies and those recreating in them from improper pet waste management.
  - (d) Add a new web page to the City website with information on the TMDL and the water quality monitoring and BMP implementation activities, as well as information about proper pet waste management and the impact of improperly deposited waste on water quality of the Creek and Beach, and public health.
  - (e) Create and implement a pre-rain pet waste cleanup email alert to residents, reminding them to clean-up accumulated pet waste in their yards that could otherwise get washed into the Creek and Beach.
  - (f) Participate in local events and festivals to distribute pet waste management materials (educational fliers, dog waste bags, etc.).
- (7) The City and County, based on the results of the source characterization and BMP effectiveness, and wasteload allocation attainment analyses described in sections C.14.b-c, shall modify or refocus control measure implementation efforts as appropriate, at a frequency of no less than every two years.

### iii. Reporting

- (1) No later than March 15 of each year, the City and County shall submit a comprehensive TMDL Status and Monitoring Report, reporting on the specific control measures (as listed in section C.14.a.ii above) that have been implemented in the TMDL Project Area during the forgoing October 1 through September 30 period. This report shall include:
  - (a) The number, type, and locations and/or frequency (if applicable) of control measures;
  - (b) The description, scope, and start date of pollution prevention measures; and
  - (c) Clear statements of the responsibilities of each participating Permittee for implementation of pollution prevention or control measures.
- (2) Beginning with the 2017 TMDL Status and Monitoring Report and continuing in all TMDL Status and Monitoring Reports, the City and County shall update all the information as necessary to account for new control measures implemented, but not described in the 2016 TMDL Status and Monitoring Report or revisions to control measures.

#### **C.14.b. Conduct Water Quality Monitoring to Assess Attainment of Wasteload Allocations**

- i.** **Task Description** - The purpose of the attainment monitoring is to determine whether or not the TMDL wasteload allocations are attained.
- ii.** **Implementation Level** - In order to comply with this provision element, the City and County shall conduct attainment water quality monitoring activities as follows:
  - (1) **Sample Locations** – Two stations shall be monitored to assess attainment of wasteload allocations for stormwater runoff and dry weather flows: the mouth of San Pedro Creek (Creek Mouth) and Pacifica State Beach (Linda Mar #5).
  - (2) **Sampling Frequency** – The two attainment stations shall be monitored weekly on an ongoing basis for fecal indicator bacteria. The weekly sampling shall occur year-round regardless of weather conditions, provided the conditions are safe for field staff to collect the samples.
  - (3) **Constituents** –Fecal indicator bacteria species measured in freshwater samples collected from the Creek Mouth shall include *E. coli* and total coliform. Fecal indicator bacteria species measured in ocean water samples collected from Linda Mar #5 station shall include enterococci, fecal coliform, and total coliform.
- iii.** **Reporting**
  - (1) In their Annual TMDL Status and Monitoring Reports submitted on March 15 each year, the City and County shall analyze, summarize, and report the results of the ongoing attainment monitoring, as follows:

- (a) The City and County shall complete a data evaluation, which shall focus on determining whether the TMDL wasteload allocations are being attained in San Pedro Creek and at Pacifica State Beach.
- (b) The indicator bacteria results from the attainment monitoring stations (Creek Mouth and Linda Mar #5 stations) shall be compared to applicable bacterial water quality objectives and the allowable exceedances of those objectives as specified in the TMDL (Table 14.1).
- (c) The data evaluation shall include tabulation and review of local rainfall data to determine whether the weekly attainment monitoring sampling events occurred during dry weather or wet weather.
- (d) An ongoing quantitative analysis of trends in bacteria densities and exceedances of applicable water quality objectives at the two attainment stations shall be conducted and reported annually.
- (e) A detailed and comprehensive assessment of wasteload allocation attainment by the end of year 4 of the Permit term shall be completed. If wasteload allocations are not achieved by the end of the Permit term, no later than 180 days prior to Permit expiration, the City and County shall submit a plan in their Report Of Waste Discharge, acceptable to the Executive Officer, that describes additional control measures or increased levels of existing control measures that will be implemented to prevent or reduce discharges of bacteria to storm drain systems to attain wasteload allocations. The plan shall include implementation methods, an implementation schedule, and proposed milestones.

#### **C.14.c. Conduct Water Quality Monitoring to Characterize Sources of Bacteria in The Project Area and to Assess BMP Effectiveness**

- i. Task Description** – The purpose of characterization monitoring is to better characterize indicator bacteria contributions from specific sources and to evaluate control measure effectiveness. The characterization monitoring shall provide data to:
  - (1) Characterize indicator bacteria densities in subwatersheds, storm drain outfalls, and pump stations that have not been sampled in the past. Results of the investigation may be used to drive future control measure actions.
  - (2) Establish baseline (or current) conditions against which future monitoring results can be compared following new or ongoing control measure implementation.

Characterization monitoring shall be conducted every other year on a water year basis (i.e., October 1 through September 30) beginning with Water Year 2016 (WY2016) (i.e., October 1, 2015 – September 30, 2016). WY2016 characterization monitoring shall assess *E. coli* densities throughout the San Pedro Creek watershed, with a focus on the culverted branches of the North Fork. The City and County may elect to focus on other areas with potential or

suspected bacteria sources during subsequent years. In WY2016, human-, horse-, and dog-specific genetic markers shall be analyzed for a subset of the samples to investigate whether these species contribute fecal contamination to the Creek. The characterization monitoring shall be iterative in nature and allow for flexibility of design and details in future years. Subsequent years of characterization monitoring, at a minimum, shall have the same level of effort as WY2016; however, in future years, based on the results of the WY2016 monitoring, alternative sampling stations may be targeted, sampling intensities may be modified, sampling frequencies may be adjusted, and/or the species-specific genetic marker sampling may be revised.

**ii. Implementation Level** – The City and County shall conduct characterization monitoring activities as follows:

- (1) Sample Locations – in WY2016, ~~and every other year,~~ a minimum of twelve sampling stations shall be monitored. The selected sampling stations for the WY2016 characterization monitoring are divided into three separate categories, as follows:
  - (a) Subwatersheds – Four subwatersheds shall be targeted in WY2016: the North Fork (three stations), Middle Fork (one station), Sanchez Fork (one station), and Main Stem (three stations);
  - (b) Pump stations – The Linda Mar and Anza pump stations shall be sampled during wet weather discharge events to the Beach (during dry weather, flows entering these stations are pumped to a wastewater treatment facility and do not discharge to the Creek or Beach);
  - (c) Stormwater outfalls – The Crespi Canal, which is an engineered and concrete-lined drainage ditch, shall be sampled if it has flowing water.

In addition to the above stations, the Creek mouth shall be also sampled during events when species-specific genetic marker samples are collected (see section C.14.c.ii.3).

In monitoring years subsequent to the WY2016 monitoring year, based on the results of the WY2016 monitoring, the sample locations and quantity may be modified. However, in each subsequent monitoring year, a minimum of one hundred ten (110) fecal indicator bacteria samples shall be collected.

- (2) Sampling Frequency – in WY2016, ~~the~~ characterization stations shall be sampled a minimum of ten times over the course of the water year, as follows:
  - (a) Characterization monitoring shall begin in WY2016 with the first sample collected in ~~November 2015~~ Winter 2016;
  - (b) Wet season – Five sampling events shall be conducted during each of the wet season months (November through March). To the extent possible, wet season sampling events shall occur during wet weather, which as defined in the TMDL is any day with 0.1 inch of rain or more and the following three days;

(c) Dry season – Five sampling events shall be conducted during the dry season on a monthly basis from May through September.

In subsequent monitoring years, based on the results of the WY2016 monitoring, the sampling frequency may be modified. However, in each subsequent monitoring year, a minimum of one hundred ten (110) fecal indicator bacteria samples shall be collected.

- (3) Constituents – All Samples shall be analyzed for *E. coli*. In addition, during each monitoring year (i.e., WY2016, and every other water year thereafter), at a minimum, samples collected at four stations during four sampling events (two wet season, two dry season) shall be analyzed for human-, horse-, and dog-specific genetic markers to assess whether the targeted host species contribute fecal contamination to the Creek and Beach.
- (4) Monitoring Protocols and Data Quality – Where applicable, monitoring data must be SWAMP comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Project Plan (QAP#P) for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent SWAMP Standard Operating Procedures.
- (5) Future Revisions – Any and all changes to the characterization monitoring plan in subsequent years (e.g., WY2018, WY2020, etc.) shall be submitted to the Executive Officer for review and acceptance no later than 90 days prior to implementation.

### iii. Reporting

- (1) In their Annual TMDL Status and Monitoring Reports beginning with the 2016 report submitted on March 15, 2017, and every other year's report thereafter, the City and County shall submit a comprehensive Characterization Monitoring Report reporting on all data collected during the preceding October 1 through September monitoring period.
- (2) Data evaluation shall focus on addressing the following questions:
  - (a) Which land uses and/or sources contribute most to bacteria impairments in San Pedro Creek watershed?
  - (b) Are controllable sources of fecal contamination (e.g., human, horses, and dogs) present in the San Pedro Creek watershed?
  - (c) What are the multi-year indicator bacteria density trends in the Creek and at the Beach (i.e., do control measures appear to be reducing bacteria)?
- (3) As appropriate, the Report shall include the following:
  - (a) Immediately following the Table of Contents, a Data Tables section that includes all the data collected pursuant to Provision C.14.d. and

contains the following information pertaining to the foregoing monitoring period:

- (i) A map showing all monitoring locations;
  - (ii) Immediately following the map, a single completed Locations and Parameters Table containing the following columns or rows for each location sampled: numeric site identifier, a short-hand site name such as "Creek Mouth," latitude, longitude, and parameters assessed;
  - (iii) Immediately following the Locations and Parameters Table, a single completed Results Table containing the following columns or rows for each location sampled: the short-hand site name and datum/result for each constituent analyzed. Constituents that exceed applicable water quality objectives shall be highlighted.
- (b) For all data, a statement of the data quality.
- (c) An analysis of the data, which includes the following:
- (i) Basic descriptive statistics using indicator bacteria data;
  - (ii) Identification and evaluation of any controllable sources of fecal contamination (e.g., human, horses, and dogs) present in the San Pedro Creek watershed;
  - (iii) Identification and analysis of any trends in stormwater or receiving water quality; and
  - (iv) Consideration of variability in the data sets.
- (d) A discussion of the data, which shall:
- (i) Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin or the Ocean Plans;
  - (ii) Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
  - (iii) Identify and prioritize water quality problems;
  - (iv) Identify potential sources of water quality problems;
  - (v) Describe follow-up actions;
  - (vi) Evaluate the effectiveness of existing control measures; and
  - (vii) Identify management actions needed to address water quality problems.

## C.15. Exempted and Conditionally Exempted Discharges

The objective of this provision is to exempt unpolluted non-stormwater discharges from Discharge Prohibition A.1 and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. In order for non-stormwater discharges to be conditionally exempted from Discharge Prohibition A.1, the Permittees must identify appropriate BMPs, monitor the non-stormwater discharges where necessary, and ensure implementation of effective control measures – as listed below – to eliminate adverse impacts to waters of the State consistent with the discharge prohibitions of the Order.

### C.15.a. Exempted Non-Stormwater Discharges (Exempted Discharges):

- i. **Discharge Type** – In carrying out Discharge Prohibition A.1, the following unpolluted discharges are exempted from prohibition of non-stormwater discharges:
  - (1) Flows from riparian habitats or wetlands;
  - (2) Diverted stream flows;
  - (3) Flows from natural springs;
  - (4) Rising ground waters;
  - (5) Uncontaminated and unpolluted groundwater infiltration;
  - (6) Single family homes' pumped groundwater, foundation drains, and water from crawl space pumps and footing drains;
  - (7) Pumped groundwater from drinking water aquifers (excludes well development); and
  - (8) NPDES permitted discharges (individual or general permits).
- ii. **Implementation Level** – The non-stormwater discharges listed in Provision C.15.a.i above are exempted unless they are identified by the Permittees or the Executive Officer as sources of pollutants to receiving waters. If any of the above categories of discharges, or sources of such discharges, are identified as sources of pollutants to receiving waters, such categories or sources shall be addressed as conditionally exempted discharges in accordance with Provision C.15.b below.

### C.15.b. Conditionally Exempted Non-Stormwater Discharges:

The following non-stormwater discharges are also exempt from Discharge Prohibition A.1 if they are either identified by the Permittees or the Executive Officer as not being sources of pollutants to receiving waters, or if appropriate control measures to eliminate adverse impacts of such sources are developed and implemented in accordance with the tasks and implementation levels of each category of Provision C.15.b.i-vii below.

**i. Discharge Type** – Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains

**(1) Pumped Groundwater from Non-Drinking Water Aquifers**

Groundwater pumped from a monitoring well, used for groundwater basin management, which is owned and/or operated by a Permittee is allowed if the following requirements are met:

**(a) Implementation Level** – Twice a year (once during the wet season and once during the dry season), representative samples shall be taken from each aquifer that potentially will discharge or has discharged into a storm drain. Samples collected and analyzed for compliance in accordance with self-monitoring requirements of other NPDES permits or sample data collected for drinking water regulatory compliance may be submitted to comply with this requirement as long as they meet the following criteria:

(i) The water samples shall meet water quality standards consistent with the existing effluent limitations or pollutant triggers in the Water Board's NPDES Groundwater General Permits, NPDES Nos. CAG912002 and CAG912004.

(ii) The water samples shall be analyzed using approved U.S. EPA methods: (a) U.S. EPA Method 8015 Modified for total petroleum hydrocarbons; (b) U.S. EPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds; and (c) approved U.S. EPA methods to meet the triggers for the metals listed in the general permits discussed in C.1415.(b)i.(1)(a)(i) above.

(iii) The water samples shall be analyzed for pH and turbidity.

If a Permittee is unable to comply with the above criteria, the Permittee shall notify the Water Board upon becoming aware of the compliance issue.

**(b) Required BMPs and Monitoring** – When greater than 2,500 gallons per day of uncontaminated (meeting the criteria in C.15.b.i.(1)(a)(i)) groundwater is discharged from these monitoring wells, the following shall be implemented:

(i) Test the receiving water, upstream and downstream of the discharge point, to determine ambient turbidity and pH prior to discharging. Receiving water monitoring is not required if the discharge infiltrates into a dry creek immediately downstream.

(ii) Test water samples for turbidity and pH on the first two consecutive days of dewatering.

(iii) Maintain proper control of the discharge at the discharge point to prevent erosion, scouring of banks, nuisance, contamination, and excess sedimentation in the receiving waters.

- (iv) Maintain proper control of the flowrate and total flow during discharge so that it will not have a negative impact on the receiving waters.
- (v) Appropriate BMPs shall be implemented to remove total suspended solids and silt to allowable discharge levels. Appropriate BMPs may include filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.
- (vi) Turbidity of the discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for flowing streams with turbidities less than or equal to 50 NTU.
- (vii) The pH of the discharged groundwater shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.
- (c) If the Permittee is unable to comply with the criteria in Provision C.15.b.i.(1)(b)(i)-(vii), discharge shall cease immediately and the Permittee shall employ treatment to meet the above criteria, use other means of disposal, or apply for coverage under ~~one of~~ the Water Board's NPDES Groundwater General Permits.
- (d) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.
- (2) **Pumped<sup>49</sup> Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains**
  - (a) Proposed new discharges of uncontaminated groundwater at flows of 10,000 gallons/day or more and all new discharges of potentially contaminated groundwater shall be reported to the Water Board so that they can be subject to NPDES permitting requirements. Proposed new discharges of uncontaminated groundwater at flows of less than 10,000 gallons/day shall be encouraged to discharge to a landscaped area or bioretention unit that is large enough to accommodate the volume.
  - (b) If the groundwater cannot be discharged to a landscaped area or bioretention unit and the discharge is greater than 2,500 gallons per day, it can only be considered for discharge once the following sampling is done to verify that the discharge is uncontaminated:
    - (i) The discharge shall meet ~~water quality standards~~ WQS consistent with the existing effluent limitations or pollutant triggers in ~~the~~ Water Board's NPDES Groundwater General Permits, NPDES Nos. CAG912002-~~CAG912004~~.

<sup>49</sup> Pumped groundwater not exempted in C.15.a or conditionally exempted in C.15.b.i.(1).

- (ii) The Permittees shall require that water samples from these discharge types be analyzed using the following approved U.S. EPA ~~M~~methods:
- U.S. EPA Method 8015 Modified for total petroleum hydrocarbons, and ~~(b)~~U.S. EPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds.
  - The approved U.S. EPA Methods for the metals listed below that meet the corresponding Reporting Limits:

<b>Metal</b>	<b>Reporting Limit</b>
Antimony	6 µg/l
Arsenic	10 µg/l
Beryllium	4 µg/l
Cadmium	1.1 µg/l
Chromium VI	11 µg/l
Copper <sup>50</sup>	5.9 µg/l
Copper <sup>51</sup>	3.4 µg/l
Copper <sup>52</sup>	4.7 µg/l
Lead	3.2 µg/l
Mercury	0.025 µg/l
Nickel	19 µg/l
Selenium	5 µg/l
Silver	2.2 µg/l
Thallium	1.7 µg/l
Zinc	86 µg/l
Cyanide	2.9 µg/l

- (c) **Monitoring and Required BMPs** – When the discharge has been verified as uncontaminated per sampling completed in C.15.b.i.(2)(~~eb~~) above, the Permittees shall require the following:
- Test the receiving water, upstream and downstream of the discharge point, to determine ambient turbidity and pH prior to discharging. Receiving water monitoring is not required if the discharge infiltrates into a dry creek immediately downstream or if accessing the sampling points poses safety to personnel.
  - Test water samples for turbidity and pH on the first two consecutive days of dewatering.
  - Maintain proper control of the discharge at the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation in the receiving waters.

<sup>50</sup> Applicable to Suisun Bay and San Pablo Bay segments of San Francisco Bay.

<sup>51</sup> Applicable to Central Bay and Lower Bay segments of San Francisco Bay.

<sup>52</sup> Applicable to South San Francisco Bay segments of San Francisco Bay.

- (iv) Maintain proper control of the flow rate and total flow during discharge so that it will not have a negative impact on the receiving waters.
- (v) Appropriate BMPs to render pumped groundwater free of pollutants and therefore exempted from prohibition may include the following: filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.
- (vi) Turbidity of discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for a flowing stream with turbidities less than or equal to 50 NTU.
- (vii) The pH of discharged water shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.
- (d) If a Permittee determines that a discharger or a project proponent is unable to comply with the criteria in C.15.b.i.(2)(bc)(i)-(vii), the Permittee shall require the discharge to cease immediately and require that the discharger employ treatment to meet the above criteria, use other means of disposal, or apply for coverage under ~~one of~~ the Water Board's NPDES Groundwater General Permits.
- (e) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

**ii. Discharge Type – Air Conditioning Condensate**

**Required BMPs** – Condensate from air conditioning units shall be reused or directed to landscaped areas or the ground. Discharge to a storm drain system may be allowed if discharge to landscaped areas or the ground is not feasible.

**iii. Discharge Type – Emergency Discharges of Potable Water**

- (1) **Emergency Discharges** – ~~Emergency d~~Discharges ~~are the~~resulting of from firefighting activities, ~~unauthorized hydrant openings, natural or man-made disasters (e.g., earthquakes, floods, wildfires, accidents, terrorist actions).~~
- (2) Required BMPs
  - (a) The Permittees shall implement or require firefighting personnel to implement BMPs for emergency discharges. However, the BMPs should not interfere with immediate emergency response operations or impact public health and safety. BMPs may include, but are not limited to, the plugging of the storm drain collection system for temporary storage, the proper disposal of water according to jurisdictional requirements, and the use of foam where there may be toxic substances on the property the fire is located.

- (b) During emergency situations, priority of efforts shall be directed toward life, property, and the environment (in descending order). The Permittees or firefighting personnel shall control the pollution threat from their activities to the extent that time and resources allow.
- (3) **Reporting Requirements** – Reporting requirements will be determined by Water Board staff on a case-by-case basis, such as for fire incidents at chemical plants.

**iv. Discharge Type – Individual Residential Car Washing**

**Required BMPs**

- (1) The Permittees shall discourage through outreach efforts individual residential car washing within their jurisdictional areas that discharge directly into their storm drain systems.
- (2) The Permittees shall encourage individuals to direct car wash waters to landscaped areas, use as little detergent as necessary, or wash cars at commercial car wash facilities.

**v. Discharge Type – Swimming Pool, Hot Tub, Spa, and Fountain Water Discharges**

**(1) Required BMPs**

- (a) The Permittees shall prohibit discharge of water that contains chlorine residual, copper algicide, filter backwash or other pollutants to storm drains or to waterbodies. Such polluted discharges from pools, hot tubs, spas, and fountains shall be directed to the sanitary sewer (with the local sanitary sewer agency's approval) or to landscaped areas that can accommodate the volume.
- (b) Discharges from swimming pools, hot tubs, spas and fountains shall be allowed into storm drain collection systems only if there are no other feasible disposal alternatives (e.g., disposal to sanitary sewer or landscaped areas) and if the discharge is properly dechlorinated to non-detectable levels of chlorine consistent with water quality standards.
- (c) The Permittees shall require that new or rebuilt swimming pools, hot tubs, spas and fountains within their jurisdictions have a connection<sup>53</sup> to the sanitary sewer to facilitate draining events. The Permittees shall coordinate with local sanitary sewer agencies to determine the standards and requirements necessary for the installation of a sanitary sewer discharge location to allow draining events for pools, hot tubs, spas, and fountains to occur with the proper permits from the local sanitary sewer agency.

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<sup>53</sup> This connection could be a drain in the pool to the sanitary sewer or a sanitary sewer clean out located close enough to the pool so that a hose can readily direct the pool discharge into the sanitary sewer clean out.

- (d) The Permittees shall improve their public outreach and educational efforts and ensure implementation of the required BMPs and compliance in commercial, municipal, and residential facilities.
  - (e) The Permittees shall implement the Illicit Discharge Enforcement Response Plan from C.5.b for polluted (contains chlorine, copper algaecide, filter backwash, or other pollutants) swimming pool, hot tub, spa, or fountain waters that get discharged into the storm drain.
- (2) **Reporting** – The Permittees shall keep records of the authorized major discharges of dechlorinated pool, hot tubs, spa, and fountain water to the storm drain, including BMPs employed; such records shall be available for inspection by the Water Board.

**vi. Discharge Type – Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering**

- (1) **Required BMPs** – The Permittees shall promote measures that minimize runoff and pollutant loading from excess irrigation via the following:
- (a) Promoting and/or working with potable water purveyors to promote conservation programs that minimize discharges from lawn watering and landscape irrigation practices;
  - (b) Promoting outreach messages regarding the use of less toxic options for pest control and landscape management;
  - (c) Promoting and/or working with potable water purveyors to promote the use of drought tolerant, native vegetation to minimize landscape irrigation demands;
  - (d) Promoting and/or working with potable water purveyors to promote outreach messages that encourage appropriate applications of water needed for irrigation and other watering practices; and
  - (e) Implementing the Illicit Discharge Enforcement Response Plan from C.5.b, as necessary, for ongoing, large-volume landscape irrigation runoff to their storm drain systems.
- (2) **Reporting** – The Permittees shall provide implementation summaries in their Annual Report.

## C.16. Discharges to Areas of Special Biological Significance

This Provision applies to stormwater discharges from the County of San Mateo into James V. Fitzgerald Marine Reserve Area of Special Biological Significance (ASBS). As set forth in the Fact Sheet, the State Water Board granted an exception to the ASBS discharge prohibition (ASBS Exception) in the Ocean Plan to applicants including the County of San Mateo for their existing stormwater discharges into ASBSs, provided they receive authorization to discharge by an NPDES permit; the discharges comply with all applicable terms, prohibitions, and special conditions of Attachment B - Special Protections (Special Protections) attached to and part of the ASBS Exception; and the discharges are essential for flood control or slope stability, designed to prevent soil erosion, occur only during wet weather, and are composed of only stormwater runoff. This Provision serves as the authorization for the County of San Mateo to discharge stormwater into the ASBS in accordance with the requirements below:

### C.16.a. Discharges to the James V. Fitzgerald Marine Reserve ASBS

- i. If the County of San Mateo meets all of the conditions set forth in Provision C.16.a.i. and C.16.a.ii., its stormwater discharges into the James V. Fitzgerald Marine Reserve ASBS from ~~municipal storm sewer system~~ [MS4](#) outfalls that were constructed or were under construction prior to January 1, 2005, are permitted for those discharges that:
  - (1) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;
  - (2) Are designed to prevent soil erosion;
  - (3) Occur only during wet weather; and
  - (4) Are composed only of stormwater runoff.
- ii. The County of San Mateo shall comply with all of the applicable terms, prohibitions, and special conditions of the Special Protections of the ASBS Exception set forth in State Water Board Resolution No. 2012-0012, as amended by State Water Board Resolution [No. 2012-0031](#), including monitoring requirements, as they apply to stormwater. The Special Protections are hereby incorporated by reference into this Order and attached hereto as Attachment F. Notwithstanding anything to the contrary in this Order, the County of San Mateo shall not alter the natural ocean quality of the ASBS; shall not discharge trash into the ASBS; and shall not discharge non-stormwater into the ASBS except as provided in the Special Protections. As required by the Special Protections, the County of San Mateo shall address the preceding requirements (other than trash) in an ASBS Compliance Plan to be approved by the State Water Board Executive Director or [the](#) Regional Water Board Executive Officer and comply with the compliance schedule set forth in the Special Protections.

**C.16.b. Reporting** – In addition to the monitoring requirements of the Special Restrictions, the County of San Mateo shall submit, upon approval by the State Water Board Executive Director, a copy of its approved ASBS Compliance Plan.

## C.17. Annual Reports

- C.17.a. The Permittees shall submit Annual Reports electronically in all cases ~~and in paper copy upon request~~ by September ~~30~~15 of each year. Each Annual Report shall report on the previous fiscal year beginning July 1 and ending June 30. The annual reporting requirements are set forth in Provisions C.1 – C.16. A paper copy of each Annual Report shall be submitted by October 15 of each year. The Permittees shall retain documentation as necessary to support their Annual Report. The Permittees shall make this supporting information available upon request within a timely manner, generally no more than ten business days unless otherwise agreed to by the Executive Officer.
- C.17.b. The Permittees shall collaboratively develop a common annual reporting format for acceptance by the Executive Officer by April 1, 2016. The resulting Annual Report Form, once approved, shall be used by all Permittees. The Annual Report Form may be changed by April 1 of each year for the following ~~Annual Report~~, to more accurately reflect the reporting requirements of Provisions C.1 – C.16, with the agreement of the Permittees and by the approval of the Executive Officer.
- C.17.c. The Permittees shall certify in each Annual Report that they are in compliance with all requirements of the Order. If a Permittee is unable to certify compliance with a requirement, it must submit, in the cover letter of the Annual Report, the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

## C.18. Modifications to this Order

This Order may be modified, or alternatively, revoked or reissued, before the expiration date as follows:

- C.18.a. To address significant changed conditions identified in the technical or Annual Reports required by the Water Board, or through other means or communication, that were unknown at the time of the issuance of this Order;
- C.18.b. To incorporate applicable requirements of statewide water quality control plans adopted by the State Water Board or amendments to the Basin Plan approved by the State Water Board; ~~or~~
- C.18.c. To comply with any applicable requirements, guidelines, or regulations issued or approved under section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order. The Order as modified or reissued under this paragraph shall also contain any other requirements of the CWA then applicable; or
- C.18.d. To approve and incorporate an alternative method or methods of distributing the county load reductions for mercury or PCBs on a Permittee-specific basis, as allowed by Provisions C.11 and C.12.

### C.19. Standard Provisions

Each Permittee shall comply with all parts of the Standard Provisions contained in Attachment G of this Order.

### C.20. Expiration Date

This Order expires on ~~November 30, 2020~~ December 31, 2024, five years from the effective date of this Order. The Permittees must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

### C.21. Rescission of Old Orders

Order No. R2-2009-0074 is hereby rescinded on the effective date of this Order, which shall be ~~December 1, 2015~~ January 1, 2016, provided that the Regional Administrator of U.S. EPA, Region IX, does not object.

### C.22. Effective Date

The Effective Date of this Order and Permit shall be ~~December 1, 2015~~ January 1, 2016, provided that the Regional Administrator of U.S. EPA, Region IX, does not object.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on ~~October 14~~ November 18, 2015.

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**Bruce H. Wolfe**  
**Executive Officer**

- Attachment A: Municipal Regional Stormwater Permit Fact Sheet
- Attachment B: Provision C.3.b. Sample Reporting Table
- Attachment C: Provision C.3.g. Hydromodification Applicability Maps
- Attachment D: Provision C.8. Standard Monitoring Provisions
- Attachment E: Provision C.10. Supporting Information
- Attachment F: Provision C.16. ASBS Special Protection Zone
- Attachment G: Standard NPDES Stormwater Permit Provisions

## ACRONYMS & ABBREVIATIONS

<b>ACCWP</b>	Alameda Countywide Clean Water Program
<b>BAHM</b>	<b>Bay Area Hydrology Model</b>
<b>Basin Plan</b>	Water Quality Control Plan for the San Francisco Bay Basin
<b>BASMAA</b>	Bay Area Stormwater Management Agencies Association
<b>BMPs</b>	Best Management Practices
<b>CASQA</b>	California Stormwater Quality Association
<b>CCC</b>	California Coastal Commission
<b>CCCWP</b>	Contra Costa Clean Water Program
<b>CDFGW</b>	California Department of Fish and <del>Game</del> <a href="#">Wildlife</a>
<b>CEDEN</b>	California Environmental Data Exchange Network
<b>CEQA</b>	California Environmental Quality Act
<b>CFR</b>	Code of Federal Regulations
<b>CSBP</b>	California Stream Bioassessment Procedures
<b>CSCI</b>	California Stream Condition Index
<b>CWA</b>	Federal Clean Water Act
<b>CWC <a href="#">or Water Code</a></b>	California Water Code
<b>DCIA</b>	Directly Connected Impervious Area
<b>DPR</b>	<a href="#">California</a> Department of Pesticide Regulation
<b>ERP</b>	Enforcement Response Plan
<b>FR</b>	Federal Register
<b>GIS</b>	Geographic information System
<b>HBANC</b>	Homebuilders Association of Northern California
<b>HM</b>	Hydromodification Management
<b>HMP</b>	Hydromodification Management Plan
<b>IC/ID</b>	Illicit Connections and Illicit Discharges
<b>IPM</b>	Integrated Pest Management
<b>LID</b>	Low Impact Development
<b>MEP</b>	Maximum Extent Practicable

<b>MRP</b>	Municipal Stormwater Regional Permit
<b>MS4</b>	Municipal Separate Storm Sewer System
<b>MTC</b>	Metropolitan Transportation Commission
<b>NAFSMA</b>	National Association of Flood & Stormwater Management Agencies
<b>NOI</b>	Notice of Intent
<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>NRDC</b>	Natural Resources Defense Council
<b>O&amp;M</b>	Operation and Maintenance
<b><u>PAHs</u></b>	<u>Polynuclear Aromatic Hydrocarbons</u>
<b>PBDE</b>	Polybrominated Diphenyl Ether
<b>PCA</b>	Pest Control Advisor
<b>PCBs</b>	Polychlorinated Biphenyls
<b>PHAB</b>	Physical Habitat (e.g., of streams)
<b>POTW</b>	Publicly Owned Treatment Works
<b>QAPP</b>	Quality Assurance Project Plan
<b>RAA</b>	Reasonable Assurance Analysis
<b>RCRA</b>	<u>Federal</u> Resource Conservation and Recovery Act
<b>RMC</b>	Regional Monitoring Coalition
<b>RMP</b>	Regional Monitoring Program
<b>ROWD</b>	Report of Waste Discharge
<b>RTA</b>	Rapid Trash Assessment
<b>SARA</b>	<u>Federal</u> Superfund Amendments and Reauthorization Act
<b>SCURTA</b>	Santa Clara Urban Rapid Trash Assessment
<b>SCVURPPP</b>	Santa Clara Valley Urban Runoff Pollution Prevention Program
<b><del>SFRWQCB</del></b>	<del><u>San Francisco Bay Regional Water Quality Control Board</u></del>
<b>SIC</b>	Standard Industrial Classification
<b>SMWPPP</b>	San Mateo Countywide Water Pollution Prevention Program
<b>SSID</b>	Stressor Source Identification
<b>SOP</b>	Standard Operating Procedure
<b>SWAMP</b>	Surface Water Ambient Monitoring Program

<b>SWPPP</b>	Stormwater Pollution Prevention Plan
<del>SWRCB</del> <a href="#"><u>State Water Board</u></a>	State Water Resources Control Board
<b>TIE</b>	Toxicity Identification Evaluation
<b>TMDLs</b>	Total Maximum Daily Loads
<b>TSCA</b>	<a href="#"><u>Federal</u></a> Toxic Substances Control Act
<b>TST</b>	Test of Significant Toxicity
<b>TU</b>	Toxicity Units
<b>UCMR</b>	Urban Creeks Monitoring Report
<b>U.S. EPA</b>	Unites States Environmental Protection Agency
<b>Water Board</b>	San Francisco Bay Regional Water Quality Control Board
<b>WLAs</b>	Wasteload Allocations
<a href="#"><u>WQS</u></a>	<a href="#"><u>Water Quality Standards</u></a>

## GLOSSARY

<b>Arterial Roads</b>	Freeways, multilane highways, and other important roadways that supplement the Interstate System. Arterial roads connect, as directly as practicable, principal urbanized areas, cities, and industrial centers.
<b>Beneficial Uses</b>	The uses of water of the <del>s</del> State protected against degradation, such as domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation and preservation of fish and wildlife, and other aquatic resources or preserves.
<b>Collector Roads</b>	Major and minor roads that connect local roads with arterial roads. Collector roads provide less mobility than arterial roads at lower speeds and for shorter distances.
<b>Commercial Development</b>	Development or redevelopment to be used for commercial purposes, such as office buildings, retail or wholesale facilities, restaurants, shopping centers, hotels, and warehouses.
<b>Construction Site</b>	Any project, including projects requiring coverage under the General Construction Permit, that involves soil disturbing activities including, but not limited to, clearing, grading, paving, disturbances to ground such as stockpiling, and excavation. Construction sites are all sites with disturbed or graded land area not protected by vegetation, or pavement, that are subject to a building or grading permit.
<b>Conditionally Exempted Non-Stormwater Discharge</b>	Non-stormwater discharges that are prohibited by A.1. of this <del>p</del> Permit, unless such discharges are authorized by a separate NPDES permit or are not in violation of <del>water quality standards</del> WQS because appropriate BMPs have been implemented to reduce pollutants to the maximum extent practicable, consistent with Provision C.15.
<b>Discharger</b>	<del>(1)</del> Any responsible party or site owner or operator within the Permittees' jurisdiction whose site discharges stormwater runoff <del>;</del> or a non-stormwater discharge <del>.</del>
<b>Detached Single-family Home Project</b>	The building of one single new house or the addition and/or replacement of impervious surface associated with one single existing house, which is not part of a larger plan of development.
<b>Development</b>	Construction, rehabilitation, redevelopment, or reconstruction of any public or private residential project (whether single-family, multi-unit, or planned unit development); or industrial, commercial, retail or other nonresidential project, including public agency projects.
<b>Estate Residential Development</b>	Development zoned for a minimum 1 acre lot size <del>.</del>
<b>Emerging Pollutants</b>	Pollutants in water that either: (1) May not have been thoroughly studied to date but are suspected by the scientific community to be a source of impairment of beneficial uses and/or present a health risk; or (2) Are not yet part of a monitoring program.

<b>Erosion</b>	The diminishing or wearing away of land due to wind, or water. Often the eroded debris (silt or sediment) becomes a pollutant via stormwater runoff. Erosion occurs naturally, but can be intensified by land disturbing and grading activities such as farming, development, road building, and timber harvesting.
<b>Floor Area Ratio</b>	The <del>R</del> ratio of the total floor area on all floors of all buildings at a project site (except structures or floors dedicated to parking) to the total project site area.
<b>Full Trash Capture Device</b>	Full trash capture systems are defined as “any device or series of devices that traps all particles retained by a 5mm mesh screen and has a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour, storm in the tributary drainage catchment area.” Trash collection booms and sea curtains do not meet this definition, but are effective for removal of floating trash if properly maintained. Because these devices do not meet the Full Trash Capture Device definition, only ¼ of the catchment area treated by these measures is credited toward meeting the trash management area requirement of C.10.a.
<b>General Permits</b>	Waste Discharge Requirements or NPDES Permits containing requirements that are applicable to a class or category of dischargers. The State <del>of California</del> has general stormwater permits for construction sites that disturb soil of 1 acre or more; industrial facilities; `Phase II smaller municipalities (including nontraditional Small MS4s, which are governmental facilities, such as military bases, public campuses, and prison and hospital complexes); and small linear underground/overhead projects disturbing at least 1 acre, but less than 5 acres (including trenching and staging areas).
<b>Grading</b>	The cutting and/or filling of the land surface to a slope or elevation.
<b>Green Infrastructure</b>	Infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.
<b>Gross Density</b>	<del>Gross Density</del> —The total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses.
<b>Hydrologic source control measures</b>	Site design techniques that minimize and/or slow the rate of stormwater runoff from the site.
<b>Hydromodification</b>	The modification of a stream’s hydrograph, caused in general by increases in flows and durations that result when land is developed (e.g., made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding.

<p><b>Illicit Discharge</b></p>	<p>Any discharge to a municipal separate storm sewer (storm drain) system (MS4) that is prohibited under local, <del>s</del>State, or federal statutes, ordinances, codes, or regulations. The term <i>illicit discharge</i> includes all non-stormwater discharges not composed entirely of stormwater and discharges that are identified under Section A. (Discharge Prohibitions) of this Permit. The term illicit discharge does not include discharges that are regulated by an NPDES permit (other than the NPDES permit for discharges from the MS4) or authorized by the <del>Regional Water Board</del> Executive Officer.</p>
<p><b>Impervious Surface</b></p>	<p>A surface covering or pavement of a developed parcel of land that prevents the land's natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to, roof tops; walkways; patios; driveways; parking lots; storage areas; impervious concrete and asphalt; and any other continuous watertight pavement or covering. Landscaped soil and pervious pavement, including pavers with pervious openings and seams, underlain with pervious soil or pervious storage material, such as a gravel layer sufficient to hold at least the C.3.d volume of rainfall runoff are not impervious surfaces. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether a project is a Regulated Project under Provisions C.3.b. and C.3.g. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling and meeting the Hydromodification Standard.</p>
<p><b>Industrial Development</b></p>	<p>Development or redevelopment of property to be used for industrial purposes, such as factories; manufacturing buildings; and research and development parks.</p>
<p><b>Infill Site</b></p>	<p>A site in an urbanized area where the immediately adjacent parcels are developed with one or more qualified urban uses or at least 75% of the perimeter of the site adjoins parcels that are developed with qualified urban uses and the remaining 25% of the site adjoins parcels that have previously been developed for qualified urban uses and no parcel within the site has been created within the past 10 years.</p>
<p><b>Infiltration Device</b></p>	<p>Any structure that is deeper than wide and designed to infiltrate stormwater into the subsurface, and, as designed, bypass the natural groundwater protection afforded by surface soil. These devices include dry wells, injection wells, and infiltration trenches (includes <del>F</del>french drains).</p>
<p><b>Joint Stormwater Treatment Facility</b></p>	<p>A stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects located adjacent to each other.</p>
<p><b>Local Roads</b></p>	<p>Roads that provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas. Local roads offer the lowest level of mobility and usually contain no bus routes. Service to through traffic movement usually is deliberately discouraged in local roads.</p>

<b>Maximum Extent Practicable (MEP)</b>	A standard for implementation of stormwater management actions to reduce pollutants in stormwater. <del>Clean Water Act (CWA)</del> 402(p)(3)(B)(iii) requires that municipal stormwater permits “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the <del>S</del> state determines appropriate for the control of such pollutants.” Also see State <u>Water</u> Board Order WQ 2000-11.
<b>Mixed-use Development or Redevelopment</b>	Development or redevelopment of property to be used for two or more different uses, all intended to be harmonious and complementary. An example is a high-rise building with retail shops on the first 2 floors, office space on floors 3 through 10, apartments on the next 10 floors, and a restaurant on the top floor.
<b>Municipal Separate Storm Sewer System (MS4)</b>	A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), as defined in 40 CFR 122.26(b)(8): <ol style="list-style-type: none"> <li>(1) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to <del>S</del>state law...including special districts under <del>S</del>state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization or a designated and approved management agency under section 208 of the CWA) that discharges into waters of the United States;</li> <li>(2) Designed or used for collecting or conveying stormwater;</li> <li>(3) Which is not a combined sewer; and</li> <li>(4) Which is not part of a Publicly Owned Treatment Works (POTW), as defined in 40 CFR 122.2.</li> </ol>
<b>Municipal Corporation Yards, Vehicle Maintenance/Material Storage Facilities/</b>	Any Permittee-owned or -operated facility, or portion thereof, that: <ol style="list-style-type: none"> <li>(1) Conducts industrial activity, operates or stores equipment, and materials;</li> <li>(2) Performs fleet vehicle service/maintenance including repair, maintenance, washing, or fueling; <u>and/or</u></li> <li>(3) Performs maintenance and/or repair of machinery/equipment;</li> </ol>
<b>National Pollutant Discharge Elimination System (NPDES)</b>	A national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the CWA.
<b>Notice of Intent (NOI)</b>	The application form by which dischargers seek coverage under General Permits, unless the General Permit requires otherwise.
<b>Parking Lot</b>	Land area or facility for the parking or storage of motor vehicles used for business, commerce, industry, or personal use.
<b>Permittee/Permittees</b>	Municipal agency/agencies that are named in and subject to the requirements of this Permit.

<b>Permit Effective Date</b>	The date at least 45 days after Permit adoption, provided the Regional Administrator of U.S. EPA Region 9 has no objection, whichever is later.
<b>Pervious Pavement</b>	Pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in C.3.d.
<b>Point Source</b>	Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.
<b>Pollutants of Concern</b>	Pollutants that impair waterbodies listed under CWA section 303(d), pollutants associated with the land use type of a development, including pollutants commonly associated with urban runoff. Pollutants commonly associated with stormwater runoff include, but are not limited to, total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and <del>polynuclear aromatic hydrocarbons</del> PAHs; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers); oxygen-demanding substances (e.g., decaying vegetation and animal waste); <del>litter</del> and trash.
<b>Potable Water</b>	Water that is safe for domestic use, drinking, and cooking.
<b>Pre-Project Runoff Conditions</b>	Stormwater runoff conditions that exist onsite immediately before development activities occur. This definition is not intended to be interpreted as that period before any human-induced land activities occurred. This definition pertains to redevelopment as well as initial development.
<b>Public Development</b>	Any construction, rehabilitation, redevelopment or reconstruction of any public agency project, including but not limited to, libraries, office buildings, roads, and highways.
<b>Redevelopment</b>	Land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred.
<b>Regional Monitoring Program (RMP)</b>	A monitoring program aimed at determining San Francisco Bay Region receiving water conditions. The program was established in 1993 through an agreement among the Water Board, wastewater discharger agencies, dredgers, Municipal Stormwater Permittees and the San Francisco Estuary Institute to provide regular sampling of Bay sediments, water, and organisms for pollutants. The program is funded by the dischargers and managed by <a href="#">the</a> San Francisco Estuary Institute.
<b>Regional Project</b>	A regional or municipal stormwater treatment facility that discharges into the same watershed that the Regulated Project does.
<b>Regulated Projects</b>	Development projects as defined in Provision C.3.b.ii.

<b>Residential Housing Subdivision</b>	Any property development of multiple single-family homes or of dwelling units intended for multiple families/households (e.g., apartments, condominiums, and town homes).
<b>Retrofitting</b>	Installing improved pollution control devices at existing facilities to attain water quality objectives.
<b>Sediments</b>	Soil, sand, and minerals washed from land into water, usually after rain.
<b>Solid Waste</b>	All putrescible and nonputrescible solid, semisolid, and liquid wastes as defined by California Government Code Section 68055.1 (h).
<b>Source Control BMPs</b>	Land use or site planning practices, or structural or nonstructural measures, that aim to prevent runoff pollution by reducing the potential for contact with rainfall runoff at the source of pollution. Source control BMPs minimize the contact between pollutants and urban runoff.
<b>Standard Industrial Classification (SIC)</b>	A federal system for classifying establishments by the type of activity in which they are engaged using a four-digit code.
<b>Stormwater Pumping Station</b>	Mechanical device (or pump) that is installed in MS4s or pipelines to discharge stormwater runoff and prevent flooding.
<b>Stormwater Treatment System</b>	Any engineered system designed to remove pollutants from stormwater runoff by settling, filtration, biological degradation, plant uptake, media absorption/adsorption or other physical, biological, or chemical process. This includes landscape-based systems such as grassy swales and bioretention units as well as proprietary systems.
<b>Surface Water Ambient Monitoring Program (SWAMP)</b>	The State Water Board's program to monitor surface water quality; coordinate consistent scientific methods; and design strategies for improving water quality monitoring, assessment, and reporting.
<b>Total Maximum Daily Loads (TMDLs)</b>	The maximum amount of a pollutant that can be discharged into a waterbody from all sources (point and nonpoint) and still maintain <del>water quality standards</del> <u>WQS</u> . Under CWA section 303(d), TMDLs must be developed for all waterbodies that do not meet <del>water quality standards</del> <u>WQS</u> even after application of technology-based controls, more stringent effluent limitations required by a state or local authority, and other pollution control requirements such as BMPs.
<b>Toxicity Identification Evaluation (TIE)</b>	TIE is a series of laboratory procedures used to identify the chemical(s) responsible for toxicity to aquatic life. These procedures are designed to decrease, increase, or transform the bioavailable fractions of contaminants to assess their contributions to sample toxicity. TIEs are conducted separately on water column and sediment samples.

<b>Trash and Litter</b>	Trash consists of litter and particles of litter. California Government Code Section 68055.1 (g) defines litter as all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the <del>s</del> State, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.
<b>Treatment</b>	Any method, technique, or process designed to remove pollutants and/or solids from polluted stormwater runoff, wastewater, or effluent.
<b>Waste Load Allocations (WLAs)</b>	A portion of a receiving water's TMDL that is allocated to one of its existing or future point sources of pollution.
<b>Water Quality Control Plan (Basin Plan)</b>	The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State within the Region, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives and discharge prohibitions. The Basin Plan was duly adopted and approved by the State Water <del>Resources Control</del> Board, U.S. EPA, and the Office of Administrative Law where required. <del>The latest version is effective as of December 22, 2006.</del>
<b>Water Quality Objectives</b>	The limits or levels of water quality elements or biological characteristics established to reasonably protect the beneficial uses of water or to prevent pollution problems within a specific area. Water quality objectives may be numeric or narrative.
<b>Water Quality Standards</b>	State-adopted and U.S. EPA-approved water quality standards for waterbodies. The standards prescribe the use of the waterbody and establish the <del>water quality criteria</del> <u>WQS</u> that must be met to protect designated uses. Water quality standards also include the federal and <del>s</del> State anti-degradation policy.
<b>Wet Season</b>	October 1 through April 30 of each year