



# B A S M A A

Alameda Countywide  
Clean Water Program

Contra Costa  
Clean Water Program

Fairfield-Suisun  
Urban Runoff  
Management Program

Marin County  
Stormwater Pollution  
Prevention Program

Napa County  
Stormwater Pollution  
Prevention Program

San Mateo Countywide  
Water Pollution  
Prevention Program

Santa Clara Valley  
Urban Runoff Pollution  
Prevention Program

Sonoma County  
Water Agency

Vallejo Sanitation  
and Flood  
Control District

July 10, 2015

Bruce Wolfe, Executive Officer  
California Regional Water Quality Control Board, San Francisco Bay Region  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

## Subject: Municipal Regional Stormwater Permit–Tentative Order

Dear Mr. Wolfe:

The purpose of this correspondence is to submit the Bay Area Stormwater Management Agencies Association’s (“BASMAA’s”)<sup>1</sup> written comments on the Regional Water Board staff’s Tentative Order for the San Francisco Bay Region for the Municipal Regional Stormwater Permit (“Draft MRP”), dated May 11, 2015. These written comments follow up our testimony at the June 10 and July 8 Board Meetings. BASMAA is limiting the scope of its comments to a few major issues at a conceptual level – leaving detailed comments to the Programs and Permittees.

On behalf of the 76 BASMAA member agencies covered by the current MRP (“Permittees”), thank you for this opportunity to comment on the Draft MRP. Thank you to your staff for the process used to reach this point in the development of the Draft MRP. With your staff, we created a Steering Committee comprising high-level managers (e.g., Public Works Directors) and stormwater staff from the local agencies and the Water Board to guide the permit development process, including setting priorities and focusing on issues of most importance to stormwater quality. That has allowed us to get to this point in the process in less than two years when it took much longer in the last permit reissuance process.

Thank you also to staff for their support of our efforts and others’ efforts to secure key grants either directly or through others to help implement permit provisions:

Grant Project	Funder	Issue	Amount
Bay Area-wide Trash Capture Demonstration Project	SWRCB-ABAG	Trash	\$5,000,000
Clean Watersheds for a Clean Bay	EPA	PCBs/Hg	\$5,000,000
IPM Advocates for Retail Stores	DPR	Pesticides	\$170,000
Tracking California’s Trash	SWRCB	Trash	\$870,000
Got Ants	DPR-ABAG	Pesticides	\$99,208
Greener Pesticides for Cleaner Waterways	EPA-ABAG	Pesticides	\$42,000
IPM Focus on Multi-Unit Housing	DPR	Pesticides	\$199,927
Urban Greening Bay Area	EPA-ABAG	Green Infr	\$200,000

Bay Area

Stormwater Management

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<sup>1</sup> BASMAA is a 501(c)(3) non-profit organization comprised of the municipal stormwater Programs in the San Francisco Bay Area representing 98 agencies, including 84 cities, 7 counties, and several special districts. BASMAA focuses on regional challenges and opportunities to improve the quality of stormwater flowing to our local creeks, the Delta, San Francisco Bay, and the Pacific Ocean. The Municipal Regional Permit covers 76 of BASMAA’s 98 member agencies.

## Comments

### **Need to Prioritize**

We have accomplished much with these grants and the information gained through grants has helped inform our next steps in improving stormwater quality. However, the availability, eligibility, and securing of grants is highly uncertain and not something a public agency can depend on. And looking forward, we are not seeing the same amount of grant funding being made available for controlling trash, PCBs, and mercury (Hg) that was available during the current MRP term.

Additionally, given the effects of Proposition 218 on the ability to fund stormwater programs and the ongoing erosion of purchasing power caused by inflation, municipal stormwater budgets are effectively shrinking or at best remaining level. To counter these effects, stormwater program managers need to be able to create and run efficient and sustainable stormwater programs. A stormwater program is a direct reflection of associated permit mandates. Therefore, if we are to have any hope of such programs, we need a smart and efficient stormwater permit. The ability to prioritize is a basic tenet of management and a critical tool for creating and running an efficient and sustainable stormwater program.

So far in the Draft MRP development process, while we appreciate the focus on issues of most importance for stormwater quality, there has not been a concomitant reduction in requirements that likely have little importance or effect on stormwater quality. For the high priority issues, like reduction in pollutant of concern loads, staff is proposing some major new requirements. The Permittees want to spend most of their effort on high priority issues but cannot afford to do so without some relief on medium and low priority items.

Additionally, at the July 8, 2015 Regional Water Board hearing, some Board members acknowledged that given the very high costs and difficulties to address PCBs, trash controls should be given priority during the permit term. This is also consistent with the message from the State Water Resources Control Board via the recently adopted trash amendments. Based on this feedback from Regional Water Board members, requirements currently included in the PCBs provision should be streamlined and the schedule for implementation of controls should be extended to allow Permittees to focus on trash controls during this permit term.

#### *Recommended Revisions:*

- *As agreed at the Steering Committee, the Draft MRP should be reviewed to identify for potential removal provisions that likely have little effect on stormwater quality.*
- *Streamline requirements for lower priority pollutants of concern and expand associated implementation schedules to allow Permittees to focus on trash, the highest priority water quality concern at this time.*

The Steering Committee has determined the high priority issues and their corresponding permit provisions are:

- C.3.j – Green Infrastructure Planning and Implementation
- C.10 – Trash Load Reduction
- C.12 – PCBs Controls (C.11 Mercury Controls)

For each of the high priority provisions, the major concerns and recommended revisions follow.

### **C.3.j – Green Infrastructure Planning and Implementation**

#### Ensure major, new Green Infrastructure Program is well planned

In general, this sub-provision continues to be the most challenging and most uncertain portion of Provision C.3 in terms of what will constitute compliance. Although we generally support a major move to green infrastructure (GI) over the next few decades, such a move would be a significant change to how urban and suburban landscapes and infrastructure have been designed, built, and managed in California for the last 160 years. And given such a change would be effected primarily by local governments (as opposed to state or federal), it is vital that local governments (i.e., Permittees) have sufficient opportunity to research, plan, set, and implement this new direction. If Permittees do not have sufficient time and opportunity in the early stages of research and development, it is entirely possible that a new direction would be set that is slightly off target. Such a small error at the formative stage would be magnified many times across the Bay Area and over time, likely result in wasteful and potentially even regretful actions. When it comes to designing and building a sustainable green infrastructure program for the Bay Area, let us measure twice and cut once.

#### *Recommended Revisions:*

- *Focus efforts during the next MRP term on planning and opportunistic implementation where feasible.*
- *Extend the timeframes for approval of the GI framework and submittal of the GI Plan.*
- *To avoid missing opportunities for early implementation, add language that would allow for consistent review of capital improvement program (CIP) projects for GI opportunities, based on specified criteria developed collectively by the Permittees, and allow sufficient time for development and implementation of the criteria.*

#### Facilitate efficient and sustainable stormwater programs

Source identification and characterization data indicate mercury and PCBs are generally distributed widely across the urban landscape at relatively low concentrations. This appears to be particularly true for mercury but also generally true for PCBs, except for the occasional concentrated source (e.g., industrial facility that used PCBs). Setting aside source control best management practices (BMPs) that could be used for concentrated sources, the BMP for a pollutant of concern (POC) that is distributed across the landscape is a distributed BMP – i.e., green infrastructure. This is even truer for a POC like PCBs that is associated with small particles of sediment. Treatment BMPs, like screens or filters, would be ineffective or infeasible for a POC associated with small particles, but an infiltration-based BMP, like green infrastructure, would be effective. And if that best management practice was being promoted and implemented anyway as part of a long-term strategy like the green infrastructure framework that will address myriad stormwater issues, including other pollutant problems and flow control, than the use of that BMP for PCBs becomes even more cost-effective and would make the stormwater program more efficient and sustainable. For these reasons, the language in section C.3.j needs to be more consistent with the expectations in Provisions C.11 and C.12.

*Recommended Revisions:*

- *Align the time intervals for green infrastructure planning with fiscal years, and make consistent with the time intervals for load reductions in the Basin Plan for mercury and PCBs (C.11/C.12).*
  - *Align the timeframes for targets for amount of impervious surface retrofitted with the C.11/C.12 load reduction timeframes.*
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## **C.10 – Trash Load Reduction**

### Against all odds, facilitate success

Littering is probably our species’ oldest polluting behavior. Whether it was the middens of our ancient ancestors or the trashed waterways highlighted just a generation ago by Pogo and Iron Eyes Cody (see attachments), litter or trash is the definition of an intractable problem – as was recognized by several Board Members in the July 8, 2015 Board hearing on the trash provision in the Draft MRP.

Since the beginning of time to-date, no super BMP or even regular BMP has been identified that will prevent or clean up the vast majority of litter or trash. There are just too many sources and pathways (see attachment). And every BMP has significant limitations, uncertainties, and/or long return-on-investment time scales. Treatment controls like full trash capture devices deal with only one of the four major pathways of trash to our waterways and are designed to miss trash smaller than 5 mm or flows above a certain size to avoid blowout or flooding. The performances of source controls like street sweeping or education are highly situation-specific and depend on a number of conditions being met (e.g., access to curb, slow sweeper speeds, actual behavior change) to achieve significant trash removal. Because of their economic and political impacts, source reduction BMPs (i.e., product substitutions/bans, litter fees) often take years to develop and implement before a return on that investment in the form of reduced trash generation can be detected.

On the issue of detection, of monitoring to identify a change, stormwater is not wastewater. Monitoring wastewater to detect changes is easy compared to stormwater for the simple but fundamental reason that wastewater is a relatively consistent flow and stormwater, including the pollutants it contains, highly inconsistent. That is because unlike wastewater, which comes from a closed system with highly predictable and consistent sources of flow, stormwater comes from an open or natural system, with highly unpredictable and inconsistent flows. That unpredictability and inconsistency translates to high variability. High variability in the quantity and quality of the flow means the data from measuring that flow is highly variable. High variability is the bane of statistics and makes detecting changes or trends very difficult because a real change is indiscernible from all the variability or noise in the data. The amount of variability in stormwater data is often as much as the average (e.g., average = 5 +/- 5). One way to reduce variability is to take more measurements – with more data the central tendency (e.g., average) starts to stick out from the less common noise. However, for highly variable data like stormwater, more data do not necessary mean cleaner data. More data are just as likely not to show a central tendency – making it no easier to detect a change.

Given the intractable nature of our trash problem, the lack of sure-thing solutions that will essentially eliminate the problem, the inherent challenges in detecting differences in stormwater data even if we achieve them, and the severely limited resources of municipal stormwater programs, it is incumbent on the Regional Water Board to facilitate success by providing as much flexibility, time, and when available, support for resources as possible.

*Recommended Revision:*

- *To address the phenomena that as the percentage of load reduction increases, reductions become increasingly challenging (e.g., law of diminishing returns) and more time is therefore needed to find and implement sustainable control measures, extend the percent load reduction time schedules.*

An ounce of prevention is worth a pound of cure

Source reduction or true source control is reducing or eliminating pollution, in this case litter or trash, at the source so it does not exist to come into contact with stormwater. In the stormwater quality profession, we have a few examples of source reduction and the results it can or is expected to achieve, including:

- Unleaded gasoline – The reduction of lead in gasoline by about 90% in the early 1980s cascaded through the environment and people over the next decade. By the early 1990s, there was about a 90% reduction of lead in the air, about a 90% reduction of lead-related lung disease, and about a 90% reduction in lead in stormwater.
- Diazinon (pesticide) phase-out – The phase-out of all residential uses of the pesticide diazinon, which was virtually ubiquitous in urban and suburban creeks resulted in diazinon being virtually undetectable in the creeks just 3-4 years later.
- Brake pad copper phase-out – The required reduction in use of copper in brake pads to 0.5% or less is expected to reduce copper in watersheds by 60% or more.
- Bifenthrin (pesticide) regulations – New regulations and labeling requirements are expected to reduce the amount of pyrethroid insecticides in urban stormwater runoff by 80-90%.

At the July 8, 2015 Regional Water Board hearing on the Draft MRP, Board Members heard documented success stories about source reduction of trash due to single-use plastic bags and expanded polystyrene (EPS) foam product bans. These source reduction efforts are best management practices in every sense of the term – at least as successful and proven as any other BMP, with numerically documented performance. Given this proven success and to reward the often significant investment that must be made and risks that must be taken before these source reduction BMPs come to fruition, the Regional Water Board should make an ounce of prevention worth a pound of cure.

*Recommended Revisions:*

- *Increase maximum percent reduction for source controls, with supporting evidence.*
- *Increase maximum percent for additional creek/shoreline cleanups.*
- *Omit maximum percent reduction value for direct discharge control program.*

## C.12 – PCBs Controls (C.11 Mercury Controls)

Bay Area municipalities have made a great deal of progress over the past 15 years towards understanding the types of control measures that are most cost-effective in reducing PCBs discharges in stormwater. Although this evaluation of controls is ongoing, no controls identified to-date are particularly cost-effective, apart from the 1979 ban by USEPA on PCBs manufacture, import, export, and distribution in commerce in the United States. The ban represented effective “true source control” but came much too late to prevent the widespread distribution of PCBs into the urban landscape and the Bay. With further true source control generally not an option, the current challenges in addressing PCBs are not surprising.

### Provide clear and feasible pathway to compliance

There is a lack of clear and feasible pathway for Permittees to attain compliance with the load reduction requirements. Most key factors in meeting the mandated load reduction are uncertain and many are not within Permittees’ control – making achievement of compliance uncertain.

These factors include:

- PCBs are legacy pollutants that are long-lived and ubiquitous but at generally very low concentrations, which makes traditional stormwater treatment (non-green infrastructure) expensive and likely ineffective.
- The Regional Water Board-recommended BMP (Manage PCB-containing Materials and Wastes During Building Demolition) is opportunistic and yet existence of opportunities is uncertain and dependent on factors not within Permittees’ control (e.g., extent of source properties found, building demolition rates, redevelopment rates).
- There is no agreed-to accounting method to assess performance.

Despite all of these uncertain and uncontrollable factors – intractable problem, no clear solution (BMP), and no agreed-to measure of success – staff is proposing to commit Permittees to a specific regulatory performance level (Kg/year reduced) or “load reduction performance criteria”. This is the antithesis of a clear and feasible pathway to compliance. Regional Water Board staff has acknowledged that load reduction performance criteria are not effluent limits. This should be made clear in the permit. PCBs load reduction performance criteria should be in the form of action levels, i.e., levels set at a typical performance level and which require action when the level is triggered or not met.

Regional Water Board members also noted at the July 8, 2015 hearing that the general approach in the permit is to require implementation of BMPs and pollutant controls, and that the requirements in the permit should be predictable and provide a clear/concise articulation of the path to compliance – all factors that are particularly relevant to crafting the PCBs-related requirements.

### *Recommended Revisions:*

- *Replace the load reduction performance criteria with a Numeric Action Level (NAL).*
- *Base compliance upon implementing PCBs control programs designed to achieve a NAL, using an interim accounting method included in its entirety in the permit and*

*applicable for at least the term of the permit, and taking specified actions if the NAL is triggered.*

Promote a strategy to manage PCB-containing materials and wastes during building demolition

Based on Bay Area sampling and similar sampling in other areas, there appears to be a large standing stock of PCBs in certain buildings in the Bay Area, sometimes at concentrations that would likely exceed California hazardous waste levels. There is also a potential health risk to workers (e.g., at a demolition site) or building occupants exposed to PCBs in building materials. These problems are common to urban areas throughout the country. We don't know whether or not PCBs in building materials is a significant water quality issue. However, addressing the various potential problems associated with PCBs in building materials appears to be a worthwhile and "no regrets" cause. However, the various facets of this issue (i.e., water quality, human exposure at the site, and disposal) should be addressed holistically on a statewide or federal basis rather than focusing on water quality BMPs in the Bay Area only. Meeting the Tentative Order's three-year timeframe to develop a program to manage PCBs in building materials and wastes during demolition would likely require administration at the local level. This approach would result in highly inefficient use of scarce public funds and likely be ineffective at comprehensively addressing the problems. It would also likely result in inconsistent programs across the Bay Area and unintended consequences. The current situation is analogous to pesticides and pesticide-related toxicity in the early 2000s. In response to that situation, the Regional Water Board allowed the Permittees to research and develop a strategy and action plan to address the myriad elements and parties involved in the issue in a coherent and comprehensive way. That strategy formed the basis of the Regional Water Board's water quality attainment strategy and TMDL as well as the pesticide-related provisions in the municipal stormwater permits / MRP.

*Recommended Revision:*

- *Allow at a minimum the entire permit term for Permittees to work with the State, USEPA, the building industry, and other stakeholders to develop a comprehensive strategy and action plan.*

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In addition to the comments above, we attach and incorporate by reference the comments we provided on the Administrative Draft MRP on March 9, 2015; March 16, 2015; and March 27, 2015.

Thank you again for the opportunity to provide comments on the Draft MRP.

If you have any questions regarding these comments, please contact me or our Executive Director, Geoff Brosseau.

Sincerely,



Matthew Fabry, BASMAA Chair

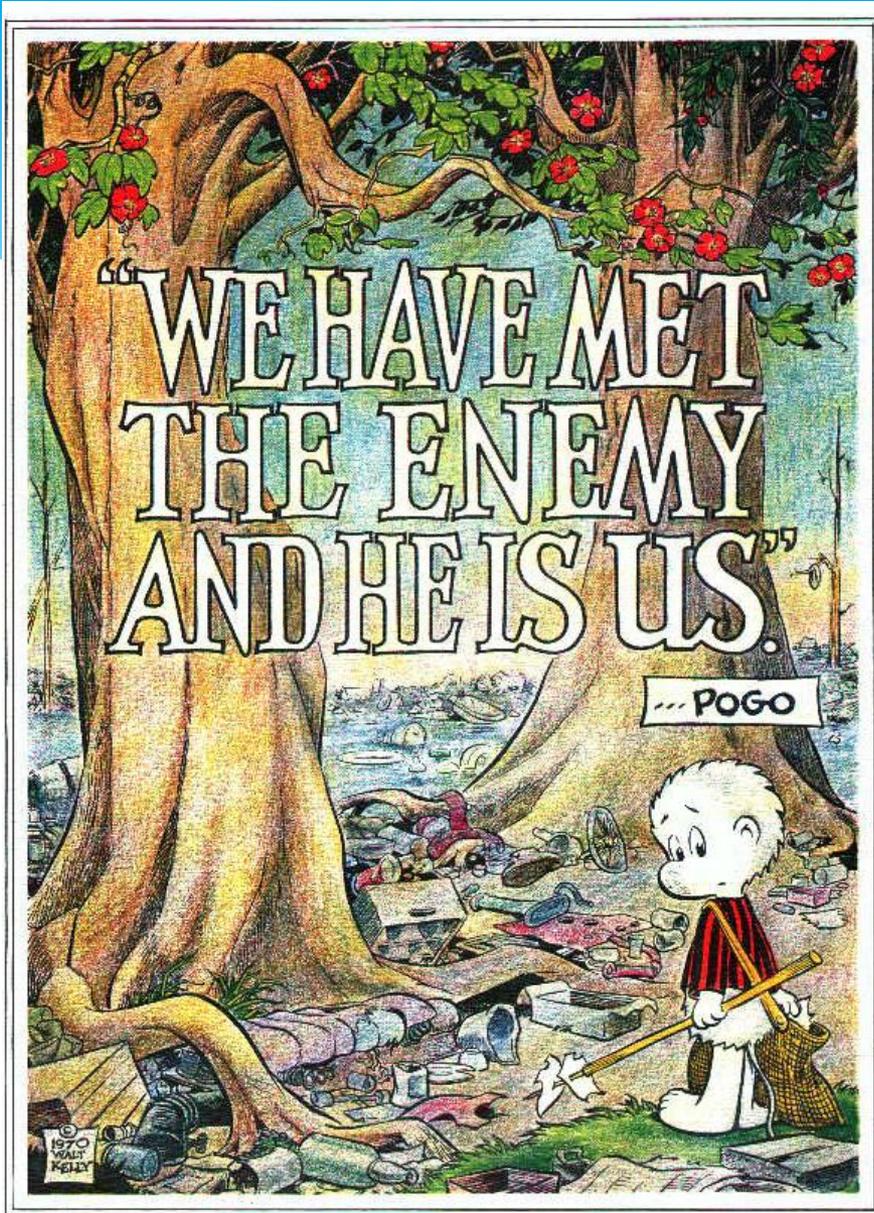
BASMAA comments on Municipal Regional Stormwater Permit–Tentative Order

cc: Terry Young, Chair, San Francisco Bay Regional Water Board  
Regional Water Board Members  
Tom Mumley, Assistant Executive Officer, Regional Water Board  
Keith Lichten, Chief – South Bay Watershed Management Division, Regional Water Board  
Dale Bowyer, Section Leader – Southeast Bay Section, Regional Water Board  
BASMAA Board of Directors

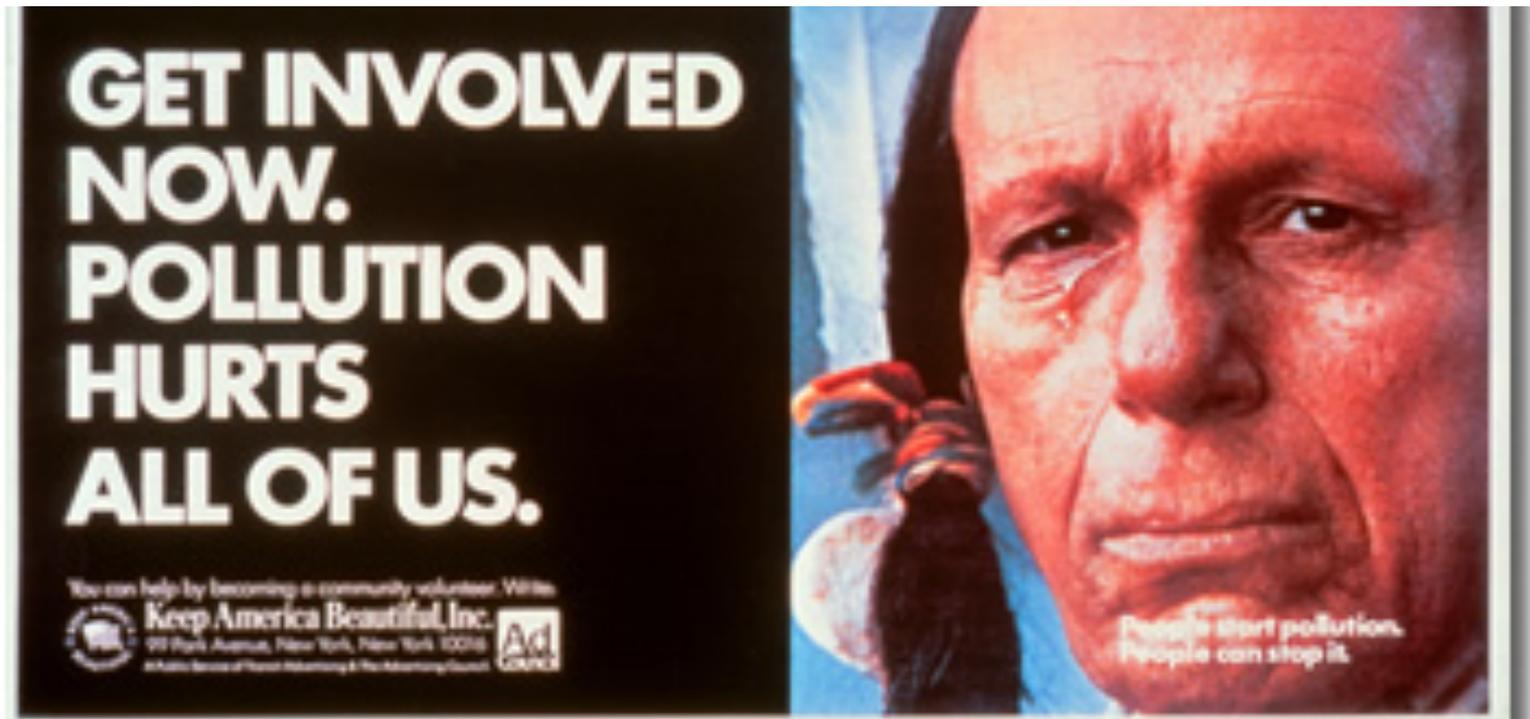
Attachments:

Pogo – First Earth Day Poster, Walt Kelly, 1970  
Iron Eyes Cody – TV commercial, Keep America Beautiful, 1971  
Trash Sources and Pathways to Urban Creeks, SCVURPPP  
Comments files on Administrative Draft MRP submitted on March 9, 2015; March 16, 2015;  
and March 27, 2015 (17 files attached separately to transmittal email)

1<sup>st</sup> Earth Day poster  
Walt Kelly, 1970



"People Start Litter, People Can Stop It"



Iron Eyes Cody Keep America Beautiful, 1971

# Trash Sources and Pathways to Urban Creeks



The following comments have not been vetted by MRP Permittees and are provided solely to assist the Water Board's consideration of and potential reaction to concepts or language it may, in its discretion, elect to advance relative to the reissuance of the Municipal Regional Permit for stormwater discharges (MRP). It is not intended and should not be misconstrued as an offer to take on, or volunteer for, any potential permit requirement that represents a new program or higher level

### 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 authority 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).

**iii. 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 evoked. For adjacent Regulated Projects that will discharge runoff to a joint stormwater treatment facility, the treatment facility must be completed by

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

the end of construction of the first Regulated Project that will be discharging runoff to the joint stormwater treatment facility.

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.

Any development project approved prior to any Provision C.3 stormwater treatment or hydromodification requirements (under previous MS4 stormwater permits issued by the Board) is exempt from the requirements of Provision C.3 in this Permit.

Comment [BWG1]: See comment under C.3.d.

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;
  - (ii) Routine maintenance or repair such as:
    - roof or exterior wall surface replacement,
    - 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.
  - Routine maintenance or repair such as:
    - roof or exterior wall surface replacement, 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).

Comment [BWG2]: Important to keep this qualifier, which is in the current MRP.

- (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. Reporting

#### (1) 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 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;

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

- (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.v.(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.v.(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 authority 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 permeable surfaces.
    - Construct driveways, bike lanes, and/or uncovered parking lots with ~~permeable surfaces~~perVIOUS pavements.

- (b) ~~Permeable surfaces must be designed and installed in accordance with (we intend to cite accepted design guidance for pervious pavement and pavers). Permittees shall individually or collectively adopt design specifications for pervious pavements.~~
- (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 re-use, infiltration, evapotranspiration, ~~or and~~ biotreatment.
- (ii) ~~A properly engineered and maintained biotreatment system may be considered only if it is infeasible to implement harvesting and re-use, infiltration, or evapotranspiration at a project site. For each Regulated Project approved to install biotreatment systems, a Permittee shall document the basis of infeasibility used to establish technical and/or economic infeasibility.~~
- (iii) ~~Infeasibility to implement harvesting and re-use, infiltration, or evapotranspiration at a project site may result from conditions including the following:~~
- ~~• Locations where seasonal high groundwater would be within 10 feet of the base of the LID treatment measure.~~
  - ~~• Locations within 100 feet of a groundwater well used for drinking water.~~
  - ~~• Development sites where pollutant mobilization in the soil or groundwater is a documented concern.~~
  - ~~• Locations with potential geotechnical hazards.~~
  - ~~• Smart growth and infill or redevelopment sites where the density and/or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.~~
  - ~~• Locations with tight clay soils that significantly limit the infiltration of stormwater.~~
- (iv)(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, ~~and~~ 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 facility. The soil media for biotreatment (or bioretention) systems shall be designed to sustain healthy, vigorous plant growth and maximize stormwater runoff retention and pollutant removal. Permittees shall ensure that Regulated Projects use biotreatment soil media that meet the

**Comment [BWG3]:** The work group believes this approach will be more flexible, as well as trackable and enforceable. We also support maintaining the current definition of pervious pavement in the MRP 1.0 Glossary, although the distinction should be made that this is an engineered system.

**Comment [BWG4]:** The BASMAA Work Group and White Paper support the position that biotreatment should be included as a "top tier" LID treatment measure, and the requirement to demonstrate infeasibility of infiltration and harvest/use facilities should be eliminated.

minimum specifications ~~set forth in Attachment L and any subsequent revisions~~ developed and formally adopted as guidance by the Permittees collectively<sup>3</sup>; ~~subject to Executive Officer 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)(b) above to meet the requirements established in Provision C.3.e for alternative compliance.

**Comment [BWG5]:** The BASMAA Work Group requested that the soil specifications not be included in the permit, so that they could be more easily revised to improve performance and reflect current practice.

### iii. Reporting

For specific tasks listed above that are reported using the reporting tables required for Provision C.3.b.v, 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

<sup>3</sup> [Biotreatment soil specifications are available on the BASMAA website, www.basmaa.org, and in the countywide program guidance manuals.](http://www.basmaa.org)

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 flowrate;
  - (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.

~~iv.~~ **Implementation Level** – The Permittees shall immediately require that stormwater treatment systems constructed for Regulated Projects meet at least one of the hydraulic sizing design criteria ~~the controls~~ in this task.

~~**Due Date for Full Implementation** – Immediate, including any development project approved prior to any Provision C.3. stormwater treatment requirements (under previous MS4 stormwater permits issued by the Board) that does not meet any of the numeric sizing criteria contained in Provision C.3.d.i, and that has not begun construction by the effective date of this Permit.~~

~~iv.~~ **Reporting** – Permittees shall use the reporting tables required in Provision C.3.b.v.

~~vi.~~ **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 ~~deeper than wide and~~ 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;

**Comment [BWG6]:** Permittees are very concerned that they will not be able to legally implement this requirement and want pre-C.3 projects to be exempt. Applicants for these projects could contend that the municipality is violating state law by imposing additional conditions on entitled projects.

**Comment [BWG7]:** Infiltration trenches, the most commonly used type of infiltration device, are not "deeper than wide".

- (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.

(3) **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.

- (4) 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. 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

<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 the Regulated Project does.

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

- (5) 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.

- (6) 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.
- (7) 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 ~~or mixed-use~~ Category B Special Project with a 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

<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 or floors dedicated to parking) to the total project site area (excluding any area dedicated to public plazas).

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 or mixed-use~~ 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 a 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 ~~or mixed-use~~ Category B Special Project with a 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 or mixed-use~~ 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 a 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
- For any commercial ~~or mixed-use~~ Category B Special Project with a 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 or mixed use~~ 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

**Comment [BWG8]:** Changes in the section are to clarify that a mixed use project does not have to meet both the FAR and DU/ac density criteria.

<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.

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 a 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.

(8) 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 ~~or mixed-use~~ development project, achieve at least an FAR of 2:1.

(iii) If a residential ~~or mixed-use~~ development project, achieve at least a gross density of 25 DU/Ac.

~~(iii)~~(iv) If a mixed-use development project, achieve at least a 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.(4)(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. A mixed use Category C Project 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.(4)(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.
- (9) 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. Effective Date

- (1) Immediate for Provision C.3.e.i.
- (10) Immediate for Provision C.3.e.ii. ~~until the Permit expiration date specified in Provision C.19. With development of Green Infrastructure Plans by each Permittee and identification of potential green street projects in each jurisdiction (as required under Provision C.3.j) the need for LID Treatment Reduction Credits for Special Projects should diminish and disappear by the end of the Permit term. Therefore, LID Treatment Reduction Credits for Special Projects will no longer be allowed beyond this Permit term.~~

**Comment [BWG9]:** The work group is opposed to eliminating the Special Projects provisions after this permit term. As discussed in the White Paper and Special Projects proposal, these projects have significant inherent environmental benefits and should be allowed to have more options. As documented in the White Paper, non-LID treatment in Special Projects accounts for less than 2% of the cumulative new and replaced impervious area of C.3 Regulated Projects. Elimination of the Special Projects provisions would require municipalities to adopt and administer an in-lieu program even if they have just one Special Project. The in-lieu program concept is untested and may not be implementable in some or all municipalities.

**iv. Implementation Level**

- (1) Provisions C.3.e.i-ii supersede any Alternative Compliance Policies previously approved by the Executive Officer
- (11) 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.

**v. Reporting** – Annual reporting shall be done in conjunction with reporting requirements under Provision C.3.b.v.

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.

**vi. 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. Information on potential Special Projects shall be kept by the Permittee and made available to the Water Board upon request.

- ~~(12) 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:~~

~~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.~~

- ~~(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 offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at a Regional Project.~~

- ~~(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 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.~~

**Comment [BWG10]:** Permittees will continue to track potential Special Projects, but would like to limit the reporting to only approved projects.

- (2) ~~Once a~~ Approved Special Projects ~~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:

- ~~(e)~~(a) Submittal Date: Date that a planning application for the Special Project was submitted.
- ~~(d)~~(b) Description: Type of project, number of floors, number of units (commercial, mixed-use, residential), type of parking, and other relevant information.
- ~~(e)~~(c) Site Acreage: Total site area in acres.
- ~~(f)~~(d) Gross Density in DU/Ac: Number of dwelling units per acre.
- ~~(g)~~(e) Density in FAR: Floor Area Ratio.
- ~~(h)~~(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.
- ~~(i)~~(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.
- ~~(j)~~(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.
- ~~(k)~~(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 when one or more of the following apply:

- (1) The post-project impervious area is less than, or the same as, the pre-project impervious area.
- (2) The project is located in a catchment that drains to hardened, engineered channels or enclosed pipes that extend continuously to the Bay, Delta, or flow-controlled reservoir, and/or drains to channels that are tidally influenced or low gradient (aggrading).
- (3) The project is located in a catchment or subwatershed that is in a highly developed portion of the watershed (i.e., that is 65% or more impervious).<sup>8</sup>

~~and are not specifically excluded within the requirements of Attachments B–F. A project that does not increase impervious surface area over the pre-project condition is not an HM Project. All HM Projects shall meet the Hydromodification Management Standard of Provision C.3.g.ii.~~

### ii. HM Standard

<sup>8</sup> HM Applicability Maps developed by Permittees in the Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Programs, and the City of Vallejo under the previous Permit (R2-2009-0074), remain in effect and are provided in Attachment X to this Permit. Permittees that do not have the location-based applicability criteria C.3.g.i.(2) or (3) shown on existing maps must develop, or require applicants to develop, new maps, overlays to existing maps, or other information that demonstrates whether a project is eligible for one of these criteria.

**Comment [BWG11]:** The purpose of these changes is to make HM requirements consistent across the MRP 2.0 region and eliminate the attachments with separate requirements contained in MRP 1.0 (as proposed in the White Paper).

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 increase erosion potential~~ may be by comparison of estimated pre-project to post-project runoff rates and durations ~~shall include the following: or by direct simulation of erosion potential,~~ using continuous simulation hydrologic/hydraulic modeling.

**Comment [BWG12]:** The purpose of changes in this section are to allow an additional method for implementing the current Erosion Potential standard. Direct simulation of Erosion Potential facilitates the use of LID (bioretention) to meet the HM standard. Details were discussed with Water Board staff on 3/20/15 and are described in the White Paper.

- (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~~ for the range of flows from 10% of the pre-project 2-year peak flow<sup>9</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 for the range of flows~~ from 20 percent of the 2-year peak flow up to the pre-project 10-year peak flow.
- (2) **Goodness of Fit Criteria for Flow Duration Control:** 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) **Criteria for Direct Simulation of Erosion Potential:** When using the erosion potential control approach, the ratio of the post-project to the pre-project “work” done on the stream channel (Ep) shall not exceed 1.0. Simulation of runoff effects on streams shall use cross-sections and slopes typical of Bay Area stream channels.<sup>10</sup>
- (4) **Standard HM Modeling:** The project proponent shall use a continuous simulation hydrologic computer model to simulate pre-project and post-project runoff, or sizing factors or charts developed using such a model, to design on-site or regional HM controls. The project proponent shall compare the pre-project and post-project model output for a long-term rainfall record, and shall show that applicable performance criteria in

<sup>9</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 USEPA’s Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers’ Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA’s Storm Water Management Model (SWMM).

<sup>10</sup> Typical stream cross-sections, slopes, and bed and bank material are identified in the Santa Clara Valley Urban Runoff Pollution Prevention Program’s Hydromodification Management Plan (2005); these typical conditions formed the basis for the regional flow duration control standards herein.

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. Permittees shall demonstrate to the satisfaction of the Executive Officer that any modifications of the BAHM made are consistent with Provision C.3.g.ii. Specific modeling requirements for the BAHM include:

**Comment [BWG13]:** Moved from attachments into the main provision, to recognize the BAHM as an acceptable tool for compliance.

- (a) **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.
- (b) **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.

- (5) **Methodology for Direct Simulation of Erosion Potential:** Prior to using direct simulation of erosion control to size HM facilities, Permittees will prepare and submit to the Water Board a report documenting the methodology used to develop sizing factors and evaluating the sensitivity of the sizing factors to site-specific characteristics and watershed conditions.

~~(13) Existing HM Control Requirements: The Water Board has adopted HM control requirements for all Permittees, and these adopted requirements are attached to this Order as listed below. The Permittees shall comply with all requirements in their own Permittee-specific Attachment, unless otherwise specified by this Order. In all cases, the HM Standard shall be achieved.~~

- ~~• Attachment B for Alameda Permittees~~
- ~~• Attachment C for Contra Costa Permittees~~
- ~~• Attachment D for Fairfield-Suisun Permittees~~
- ~~• Attachment E for San Mateo Permittees~~
- ~~• Attachment F for Santa Clara Permittees~~
- ~~• Attachment G for Vallejo Permittees~~

**iii. 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>

#### **iv. Implementation Level**

All HM Projects shall meet the HM Standard in Provision C.3.g.ii. immediately. For Contra Costa Permittees, projects that are approved on or before June 30, 2017 may be allowed to use design standards from the previous Permit (Order R2-2009-0074, as amended).

#### **iv.v. Reporting**

- (1) Reporting of HM projects shall be as described in Provision C.3.b.
- (2) Permittees shall collect and make available on request engineering design plans and information for all HM controls, including tributary areas, sizing calculations, and parameter values used in modeling.

For each HM Project approved during the reporting period, the following information shall be reported electronically in tabular form. This information

**Comment [BWG14]:** Added to allow Contra Costa Permittees, whose low flow threshold is changing, to develop and apply new sizing factors.

<sup>11</sup> In-stream control projects require a Stream Alteration Agreement from the California Department of Fish & Game, 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.

~~shall be added to the required reporting information specified in Provision C.3.b.v.~~

~~(1) 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;~~

~~(14) Method used by the project proponent to design and size the device or method used to meet the HM Standard; and~~

~~(15) Other information as required in the Permittee's existing HM requirements, as shown in Attachments B-G.~~

### 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)~~(j) The project proponent's signed statement accepting responsibility for the O&M of the installed 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)~~(k) 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 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;

~~(e)~~(l) 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 onsite, joint, and/or offsite stormwater treatment system(s) and HM control(s) (if any) until such responsibility is legally transferred to another entity;

~~(d)~~(m) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the O&M responsibility for the installed onsite, joint, and/or offsite treatment system(s) and HM control(s) (if any) to the project owner(s) or the Permittee.

~~(16)~~(12) 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.

~~(17)~~(13) 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 stormwater treatment system(s) and HM control(s) (if any).

~~(18)~~(14) A database or equivalent tabular format of the following:

~~(a) All pervious pavement or paver installations of 5000 square feet or more installed at smaller projects that do not trigger the Regulated Project impervious surface area thresholds.~~

~~(b)~~(a) All pervious pavement ~~or pavers~~systems installed at Regulated Projects, offsite, or at a joint or Regional Project, approved on or after [effective date of this Permit]. Pervious pavement systems are defined as 1,000 square feet or more of contiguous pervious asphalt, pervious concrete, pervious interlocking pavers, concrete grid pavers, or plastic reinforced grid pavers installed on private or public roadways (and associated bike paths and sidewalks), parking lots, and driveways. Pervious pavement systems to be inspected do not include installations on pedestrian pathways, patios, etc. that are not in the public right of way.

~~(c)~~(b) All stormwater treatment systems installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.

~~(d)~~(c) All HM controls installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.

~~(19)~~(15) The database or equivalent tabular format required in Provision C.3.h.ii.(4) shall include the following information for each project:

- (a) Name and address of the project;
- (b) Address and specific location(s) of the installed pervious pavement ~~or paver installations~~systems, stormwater treatment systems, and/or HM controls, including those installed at ~~smaller non-Regulated Projects (applicable to pervious pavement or paver installations only)~~, Regulated Projects, offsite locations and at joint or Regional Projects built and/or funded (in-part or wholly) by the Regulated Project.
- (c) Names of the owner(s) and operator(s) of the installed pervious pavement ~~or paver installations~~systems, stormwater treatment systems, and/or HM controls;
- (d) Specific description of the location (or a map showing the location) of the installed pervious pavement ~~or pavers~~systems, stormwater treatment system(s), and HM control(s) (if any);
- (e) Date(s) that the pervious pavement ~~or pavers~~systems, stormwater treatment system(s), and HM controls (if any) is/are installed;

**Comment [BWG15]:** The work group is opposed to this new requirement, which will create an administrative burden for Permittees to identify and track non-Regulated Projects. In addition, these projects represent only a small amount of the pervious pavement being installed.

**Comment [BWG16]:** The intent of this definition is to avoid having to inspect a large number of minor installations, especially on private property, and to require only inspection of new installations completed under this Permit.

- (f) Description of the type and size of the pervious pavement ~~or pavers~~systems, stormwater treatment system(s), and HM control(s) (if any) installed;
- (g) Responsible operator(s) of each pervious pavement ~~or pavers~~system installation, stormwater treatment system, and HM control (if any);
- (h) Dates and findings of inspections (routine and follow-up) of the pervious pavement ~~or paver installations~~system(s), stormwater treatment system(s), and HM control(s) (if any) by the Permittee; and
- (i) Any problems and corrective or enforcement actions taken.

(16) The database or equivalent tabular format required in Provision C.3.h.ii.(4) shall be kept by the Permittee and made available to the Water Board upon request.

~~(20)~~(17) A prioritized O&M Inspection Plan for inspecting ~~all pervious pavement or pavers of 5000 square feet or more installed at smaller non-Regulated Projects and~~ all pervious pavement ~~or paver installations~~systems of 1,000 square feet or more (installed on projects approved on or after [effective date of this Permit]), stormwater treatment systems and HM controls installed at Regulated Projects, offsite locations, and/or at joint or Regional Projects.

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

- (a) Inspection by the Permittee of ~~all newly installed pervious pavement or pavers of 5000 square feet or more (at smaller non-Regulated Projects) and~~ all newly installed pervious pavement ~~or paver installations~~systems, stormwater treatment systems, and HM controls (at Regulated Projects, offsite locations, and/or at joint or Regional Projects) at the time completion of installation to ensure approved plans have been followed;
- (b) Inspection by the Permittee of each Regulated Project site containing installed pervious pavement systems, stormwater treatment systems, and HM controls subject to Provision C.3, at least once every five fiscal years; and
- ~~(b)~~(c) A goal for inspection by the Permittee of ~~at least~~approximately 20 percent of the total number (at the end of the preceding fiscal year) of Regulated Project sites containing installed pervious pavement ~~or pavers~~systems, stormwater treatment systems, and HM controls; each fiscal year.
- ~~(c)~~ Inspection by the Permittee of ~~at least 20 percent of the total number (at the end of the preceding fiscal year) of installed vault-based stormwater treatment systems; and~~
- ~~(d)~~ Inspection by the Permittee of ~~all installed pervious pavement or pavers, stormwater treatment systems, and HM controls subject to Provision C.3, at least once every five years.~~

**Comment [BWG17]:** The purposed of these edits are to allow more flexibility and predictability in inspection programs, as the number of BMPs to be inspected continues to grow each year. The requirements change from tracking inspection of individual BMPs to tracking the number of sites inspected.

~~(18)~~ Permittees may allow property owners to self-report by submitting inspection reports prepared by maintenance service providers for vault-based systems in lieu of on-site inspections by Permittee staff, if the inspection reports contain a description of the maintenance activities performed and time/date-stamped photographs of the inside of the vault-based system before and after maintenance was performed.

~~(21)~~(19) Permittees shall prepare and maintain a 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. Permittees shall report on completion of the ERP in the 2017 Annual Report. 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 ~~or paver installations~~systems, stormwater treatment systems, and/or HM controls, remedies for the problems, and appropriate enforcement actions, follow-up 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 ~~or paver installations~~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 ~~or paver installations~~systems, stormwater treatment systems, and/or HM controls.

~~A c~~Corrective actions plan shall be ~~implemented~~established for the property owner within no longer than 30 days after a problem is identified by an inspector. ~~Some c~~Corrective actions can be temporary, and more time can be allowed for permanent corrective actions. If more than ~~30-90~~ days are required for compliance (or a time period consistent with an O&M maintenance agreement), a rationale shall be recorded in the electronic database or equivalent tabular system.

iii. **Maintenance Approvals:** The Permittees shall ensure that all pervious pavement ~~or pavers of 5,000 square feet or moresystems~~, stormwater treatment systems, and HM controls installed onsite, offsite, or at a joint or Regional

**Comment [BWG18]:** The purpose of this addition is to ease the Permittees’ inspection burden by utilizing reports already being prepared by third parties contracted by property owners to maintain vault systems.

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 ~~or paver installations 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.

#### iv. Reporting

(1) For each Regulated Project inspected during the reporting period (fiscal year) the following summary information shall be reported to the Water Board ~~electronically in tabular form as part of the Annual Report (as set forth in the Provision C.3.h. Sample Reporting Table attached):~~

- Total number of Regulated Project sites containing pervious pavement systems, stormwater treatment systems, and/or HM controls in the Permittee's database or equivalent tabular format (as of the end of the fiscal year);
- Name of facility Total number of/ Regulated Project sites inspected during the fiscal year and percentage of the total number of sites.
- Location (street address) of facility/site inspected.
- Name of responsible operator for installed pervious pavement or pavers, stormwater treatment systems and HM controls.
- For each inspection:
  - Date of inspection.
  - Type of inspection (e.g., initial, annual, follow-up, spot).
  - Type(s) of pervious pavement or pavers inspected.
  - 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.
  - Type of HM controls inspected.
  - 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, maintenance required immediately, etc.).
  - Total number of eEnforcement action(s) taken during the fiscal year, if any (e.g., verbal warning, notice of violation, administrative citation, administrative order consistent with the Permittee's ERP).

**Comment [BWG19]:** The purpose of these changes is to reduce the amount of reporting required by Permittees to only summary statistics, similar to the reporting requirements in C.6.

- (2) On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting period) pervious pavement ~~or pavers systems~~, 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 pervious pavement ~~or pavers installation systems~~, stormwater treatment measures and HM controls installed.
- (3) Each Permittee shall also report the following information in the Annual Report each year:
  - (a) 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.
  - (b) 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).

**Comment [BWG20]:** Recommend combining with the reporting requirements in (1) above.

### 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  $\geq 2500 \text{ ft}^2$  to  $< 10,000 \text{ ft}^2$  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.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.
- 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's planning, building, or other comparable authority.

**ii. Reporting** – On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions,

<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.

development of standard specifications and/or guidance materials, and staff training.

### C.3.j. 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 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. The plan ~~also precludes~~ is in place of 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 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 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:

**Comment [BWG21]:** Recommend that this introduction be shortened and the details placed in the Fact Sheet. Also, note that the costs and level of effort to implement Green Infrastructure, and the potential benefits of Green Infrastructure, are very different in scale when compared to Special Projects and previously proposed changes to the Regulated Projects threshold.

- (1) Prepare a framework for development of its Green Infrastructure Plan and have the framework approved by the Permittee's governing body, mayor, city manager, or county manager by ~~June 30~~ September 15, 2016~~2017~~.
- (2) Prepare a Green Infrastructure Plan, which contains the following elements:
  - (a) A mechanism (e.g., SFEI's GreenPlanIT or other planning and mapping tools) to prioritize and map areas for potential projects and planned projects, on a drainage-area-specific basis, for implementation over the following time schedules: from the date of plan ~~preparation approval~~ or July ~~2018~~2019, whichever is earlier, through: ~~2023-2024~~ and ~~2028-2029~~ (i.e., 5 and 10-year time horizons). 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 Permittees' 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 this mechanism are not required to be submitted with the plan, but shall be made available upon request.
  - (c) ~~Targets-Projections~~ for the amount of impervious surface within the Permittees' jurisdiction ~~to that may~~ be retrofitted over the following time schedules: from the date of plan ~~preparation approval~~ or July ~~2018~~2019, whichever is earlier, ~~through: 2023, 2028, 2043, and 2068 (i.e., over 5-, 10-, 25-, and 50-year time horizons)~~ or other meaningful intervals. Projections may be approximated based on different future scenarios for development activity, availability of funding, etc.
  - (d) A process for tracking and mapping completed projects, 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 project. For example, for streets, these functions include street use for stormwater management, including treatment, safe pedestrian travel, use as public space, and for bicycle, transit, and vehicle movement. 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

**Comment [BWG22]:** Given that the effective date of the permit will now be closer to Dec. 2015 or Jan. 2016, and a significant lead time is required for governing body approval, Permittees would like at least 18 months to develop and get approval for the framework. Other dates in this section are shifted accordingly.

**Comment [BWG23]:** Need to provide flexibility for small Permittees that may not have the data or GIS layers needed for GreenPlanIT.

**Comment [BWG24]:** Permittees may desire to link time schedules to other plans/scenarios, such as General or Specific Plans, estimated timeframe for buildout of certain areas, etc.

**Comment [BWG25]:** This language recognizes the increase in uncertainty with longer time frames and addresses concerns about making commitments for retrofits when funding is not assured.

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 Provision C.3.d where feasible. 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. Such an approach shall identify the specific constraints that would preclude meeting the sizing requirements and the design approach(es) to take in that situation, 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, 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 to the extent feasible based on the scheduled updates for these planning documents.
- (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 planning documents (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, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.

~~(22)~~(20) 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.

~~(23)~~(21) Conduct outreach and education in accordance with the following:

**Comment [BWG26]:** This comment clarifies that Permittees may work with the timelines for scheduled updates of various planning documents and that if GI revisions do not occur within the permit term, Permittees may provide a schedule for when they will occur.

- (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, County Supervisors, District Board Members, etc.) on the requirements of this provision and methods of implementation.

~~(24)~~(22) Report on Green Infrastructure Planning as follows:

- (a) Each Permittee shall submit documentation that the its framework for development of its Green Infrastructure Plan was approved by its governing body, mayor, city manager, or county manager by ~~June 30~~September 15, 2016~~2017~~, with in the ~~2016-2017~~ Annual Report.
- (b) Each Permittee shall submit its completed Green Infrastructure Plan with the ~~2019-2020~~ Annual Report.
- (c) Each Permittee shall submit documentation of its policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of its Green Infrastructure Plan with the ~~2019-2020~~ Annual Report.
- (d) Each Permittee shall submit a summary of its outreach and education efforts in each Annual Report.

**Comment [BWG27]:** Date adjusted to reflect the current permit adoption schedule (will allow 4 ½ years for preparation).

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

Each Permittee shall:

- (1) Review and analyze appropriate projects within the Permittee's capital improvement program, and for each project, assess the opportunities and associated costs of incorporating LID into the project. The analysis shall consider factors such as grading and drainage, pollutant loading associated with adjacent land uses, uses of available space with the project area, condition of existing infrastructure, opportunities to achieve multiple benefits such as providing aesthetic and recreational resources, and potential availability of incremental funding to support LID elements along with other relevant factors. The analysis shall be documented and made available, on request, to Water Board staff and the public.
- ~~(1)~~(2) Prepare and maintain a list of green infrastructure projects that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have

**Comment [BWG28]:** Language taken from the draft GI provision language submitted to Water Board staff on November 12, 2014.

potential for green infrastructure measures, based on the analysis conducted under C.3.g.ii.(1).

- (3) Submit the list with each Annual Report, beginning with the 2017 Annual Report, and a summary of planning or implementation status for each green infrastructure project; and ~~a summary of~~ how each infrastructure project with green infrastructure potential ~~will be implemented~~ will include green infrastructure measures to the maximum extent practicable during the permit term. 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. Permittees will collectively evaluate and develop guidance on the criteria for determining practicability of incorporating green infrastructure measures into planned projects.

### 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, state, 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 2019-2020 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~~-2020 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.

Draft

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

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

**Comment [BWG29]:** Redundant to description of information required in the annual report in C.3.e.vi.(2). The format in the current MRP Annual Report is appropriate.

**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/Ae:** 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, with inspections, effective follow-up, and enforcement to abate potential and actual discharges consistent with each Permittee's respective Enforcement Response Plan (ERP), in order to prevent discharge of pollutants and impacts on 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 enforcement authority to obtain effective stormwater pollutant control on industrial and commercial sites. Permittees shall have the ability 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 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 functional aspects and types described below, and other facilities identified by the Permittees as having the reasonable potential 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 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 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, waste transfer facilities;
    - Vehicle mechanical repair, maintenance, fueling, or cleaning;
    - 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 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, 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).

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

- i. **Task Description** – Permittees 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 the problems through the **confirmation of** implementation of corrective actions. This shall include guidance for appropriate enforcement actions, follow-up inspections, referrals to

**Comment [BWG1]:** In the Fact Sheet please include text to clarify the flexibility that confirmation of corrective actions may occur during the initial inspection or include a follow-up inspection, photo submittal by facility or documentation from the facility.

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 (~~i.e.e.g.~~, housekeeping issues, evidence of actual discharges, lack of Best Management Practices (BMPs), inadequate BMPs, inappropriate BMPs, ~~no Storm Water Pollution Prevention Plan (SWPPP), an inadequate SWPPP, and not implementing a site specific SWPPP~~), 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. ~~Corrective actions shall be implemented with the goal of implementing corrective actions~~ 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 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 discharges. 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.

**Comment [BWG2]:** Change to “for example” to indicate it is not a complete list.

**Comment [BWG3]:** It is not appropriate for municipal inspectors to determine compliance with the State Industrial Stormwater General Permit requirements (e.g., SWPPP). Municipal inspectors use a site’s SWPPP as an inspection tool and do not issue enforcement actions related directly to industrial SWPPPs.

**Comment [BWG4]:** Keep previous permit wording. This is consistent with the allowance for a longer time period if the rationale is recorded.

#### 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 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 comments

The electronic database or equivalent tabular system shall be made readily available to Water Board staff or its representative during inspections and audits.

iii. **Reporting** – Permittees shall include the following information in each Annual Report:

- (1) Number of inspections conducted;
- (2) Number of each type of enforcement action, as listed in each Permittee’s ERP, issued;
- (3) Number of enforcement actions (excluding verbal warnings) fully resolved within 10 working days or otherwise deemed resolved in a longer, but still timely manner;
- (4) Frequency and types Number of potential and actual discharges for enforcement actions taken (excluding verbal warnings) noted by business category; and
- (5) A list of facilities that are required to have coverage under the Industrial General Permit, but have not filed for coverage.

**Comment [BWG5]:** All of this data is available to the Regional Board staff in the required data tracking electronic tables. The goal is to streamline reporting requirements.

**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 Program-wide, Region-wide, or Permittee-specific.
- ii. **Implementation Level** – At a minimum, train inspections, within the 5-year 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, 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 illicit discharge and non-stormwater sources. 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 stricter enforcement to achieve expedient compliance.
- ii. **Implementation Level**
  - (1) Permittees shall have adequate legal authority to address stormwater and non-stormwater pollution associated with, but not limited to the following:
    - (a) Sewage;
    - (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;
    - (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 storm drains.
  - (3) Permittees shall have adequate legal authority to control the discharge of spills, dumping, or disposal of materials other than storm water to storm drains.

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

- i. **Task Description** – Permittees 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 (i.e.g., housekeeping issues, evidence of actual discharges, lack of Best Management Practices (BMPs), inadequate BMPs, inappropriate BMPs, ~~no Storm Water Pollution Prevention Plan (SWPPP), an inadequate SWPPP, and not implementing a site specific SWPPP~~), 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. ~~Corrective actions shall be required to be implemented with the goal of implementing corrective actions~~ 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.

**Comment [A1]:** In the Fact Sheet please include text to clarify the flexibility that confirmation of corrective actions may occur during the initial inspection or include a follow-up inspection, photo submittal by facility or documentation from the facility.

**Comment [A2]:** Change to “for example” to indicate it is not a complete list.

**Comment [A3]:** It is not appropriate for municipal inspectors to determine compliance with the State Industrial or Construction Stormwater General Permit requirements (e.g., SWPPP). Municipal inspectors use a site’s SWPPP as an inspection tool and do not issue enforcement actions related directly to industrial or construction SWPPPs.

**Comment [A4]:** Keep previous permit wording. This is consistent with the allowance for a longer time period if the rationale is recorded.

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

**i. Task Description** – Permittee shall implement a spill and dumping complaint response program.

**ii. Implementation Level**

- (1) Permittee shall have a central contact point for the public and Permittee’s staff to report spills and dumping. 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) 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. 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) Permittee shall maintain and update, as needed, a spill and dumping response flow chart and/or phone tree for 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.
- (4) Permittee shall maintain and update, as needed, a spill and dumping 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.
- (5) Permittee shall conduct reactive inspections in response to spill and dumping 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 2019 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 central contact point that might 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. If data is tracked and reported under another permit (e.g., SSOs reported according to State Board Order No. 2006-0003-DWQ) it is not necessary to track and report the incident according to this Provision.

**Comment [A5]:** Same language in previous permit. Deleting this phrase from the description of incidents that should be tracked could expand the list of incidents (e.g., couches, mattresses, etc.)

- ii. Implementation Level** – Maintain a water quality spill and dumping complaint 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

**Comment [A6]:** Provides clarification that sewage spills (listed in C.5.a.ii.(1).(a)) already reported as a SSO in CIWQS as required by State Board Order No. 2006-0003-DWQ do not need to be tracked and reported in the MRP required illicit discharge electronic data tracking system. This would be duplicative recordkeeping and reporting.

- (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
- (3) Response time (hours or days) from call to abatement.

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;
- (3) Number discharges resolved in a timely manner; and
- (4) Summary of the major types of discharges.

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

**i. Task Description** – Permittees shall have oversight and control of pollutants associated with mobile business 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 enforcement strategy, which specifically addresses the unique characteristics of mobile businesses.
  - (c) Updating, at least annually/periodically, 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 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**

**Comment [A7]:** How agencies have the ability to identify and track mobile businesses based in their jurisdictions varies widely. Compiling a useful mobile business inventory will take significant agency resources beyond what is typically necessary to compile the Facility Inspection Lists in C.4. Given this list is more appropriately used for outreach rather than facility inspections we recommend the inventory be updated only as needed (e.g., before an outreach campaign). As suggested in a meeting with Regional Board staff outreach may not even be targeted directly to mobile cleaners (e.g. outreach to restaurants who use mobile cleaners for cleaning fume hoods, etc.).

- (1) In the 2016 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) list and summary of specific outreach events and education conducted since ~~December 1, 2009~~ July 1, 2015 to the different types of mobile businesses operating within the Permittee's jurisdiction; (d) the number of inspections, if any, conducted at mobile cleaners' businesses and/or job sites in ~~2015-2016~~ reporting year; (e) the number and types of enforcement actions taken against each type of mobile businesses in ~~2015-2016~~ reporting year; ~~(f) a list of mobile cleaners operating within the Permittee's jurisdiction~~; and (g) county-wide or regional activities conducted, including sharing of mobile business inventories, BMP requirements, enforcement action information, and education. Permittees may refer to county-wide Annual Reports for any of the above activities conducted regionally (e.g., standard BMPs, outreach activities, inventory of mobile cleaners).
- (2) In the 2019 Annual Report, each Permittee shall discuss at least the following: (a) changes to minimum standards and BMPs for each of the various types of mobile businesses since the 2016 Annual Report; (b) changes to the enforcement strategy; (c) minimum standards and BMPs developed for additional types of mobile businesses; (d) list and summary of specific outreach events and education conducted to each type of mobile businesses operating within the Permittee's jurisdiction since the 2016 Annual Report ~~in 2016-2017, 2017-2018, and 2018-2019~~; (e) the number of inspections conducted, if any, at mobile cleaners' businesses and/or job sites in reporting years 2016-2017, 2017-2018, and 2018-2019; (f) a list of mobile businesses operating within the Permittee's jurisdiction; and (g) the number and types of enforcement actions taken against each type of mobile businesses in reporting years 2016-2017, 2017-2018, and 2018-2019. Permittees may refer to county-wide Annual Reports for any of the above activities conducted regionally (e.g., standard BMPs, outreach activities, inventory of mobile cleaners).

**Comment [A8]:** This requires reporting information collected during the current permit term that was not specifically required in the current permit. Any information available would have been previously provided in the individual or Countywide Program Annual Reports under C.5 or C.7.

**Comment [A9]:** Clarifies that facility inspections are not required.

**Comment [A10]:** List of mobile businesses removed from 2016 AR but kept in 2019 AR. See discussion above for why the inventories should be updated periodically and not annually.

**Comment [A11]:** The BMPs and outreach activities will likely be coordinated countywide. This allows for one report instead of multiple agencies submitting the same information.

**Comment [A12]:** The BMPs and outreach activities will likely be coordinated countywide. This allows for one report instead of multiple agencies submitting the same information.

#### 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.

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## 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 and 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; and reporting shall demonstrate the effectiveness of this inspection and problem solution activity by the Permittees.

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

- i. **Task Description** – Permittees shall have the ability to require effective stormwater pollutant controls, and implement progressively stricter enforcement to achieve expedient compliance and clean up 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 clean up at all construction sites year round.

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

- i. **Task Description** – Permittees 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 public and private construction site owners/operators.
- 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.i.e., housekeeping issues, evidence of actual discharges, lack of Best Management Practices (BMPs),

**Comment [A1]:** In the Fact Sheet please include text to clarify the flexibility that confirmation of corrective actions may occur during the initial inspection or include a follow-up inspection, photo submittal by facility or documentation from the facility.

**Comment [A2]:** Change to "for example" to indicate it is not a complete list.

inadequate BMPs, inappropriate BMPs, no Storm Water Pollution Prevention Plan (SWPPP) ~~if required in Plan Approval Process, an inadequate SWPPP, and not implementing a SWPPP~~, 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 ~~with the goal of implementing corrective actions. – Corrective actions shall be implemented~~ before the next rain event, and 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.

**Comment [A3]:** It is not appropriate for municipal inspectors to determine compliance with the State Construction Stormwater General Permit requirements (e.g., SWPPP). Municipal inspectors use a site’s SWPPP as an inspection tool and do not issue enforcement actions related directly to construction SWPPPs. However, the site SWPPP may have been the erosion control plan submitted as part of the Plan Approval Process. In that instance enforcement would be related to a municipal requirement.

**Comment [A4]:** Keep previous permit wording. This is consistent with the allowance for a longer time period if the rationale is recorded.

### 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.

These BMP categories are listed in the Statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activities (hereinafter the Construction General Permit).

- ii. **Implementation Level**

The BMPs targeting specific 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. can 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 Handbooks.

### 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 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 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.; and Permittees shall require timely corrections of all actual and threatened violations of local ordinances observed.

- ii. **Implementation Level**

- (1) **Wet Season Notification**

By September 1st of each year, each Permittee shall remind all site developers and/or owners ~~with grading permits and all site developers and/or owners~~ disturbing one acre or more of soil to prepare for the upcoming wet season.

- (2) **Frequency of Inspections**

Inspections shall be conducted monthly during the wet season<sup>1</sup> at the following sites:

- (a) All construction sites disturbing one or more acre of land; and
    - (b) All hillside projects (based on Permittee’s map of hillside development areas or criteria<sup>2</sup>, ~~or defined as ≥5% slope~~) meeting a minimum size threshold for disturbed land as defined by the Permittee; and
    - (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:

<sup>1</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>2</sup> If Permittee does not develop agency specific criteria consider defining hillside projects as ≥ 15% slope.

**Comment [A5]:** Water Board staff agreed to strike this new text in the February 24<sup>th</sup> meeting. Sending a pre wet season notification letter to every site with a grading permit could be a substantial increase in resources and may include a number of sites where the notification does not make sense.

**Comment [A6]:** Moved the reference to the minimum slope to a footnote to emphasize the Permittee may define their hillside development areas and those defined areas may have a higher minimum slope than the example provided. In addition permittees felt the 5% slope was too low and an alternative is proposed.

**Comment [A7]:** Instead of including ALL projects, a minimum square footage of disturbed land should be included in the hillside projects definition. Allowing the individual permittees to define the minimum threshold provides the flexibility needed.

**Comment [A8]:** The permittees will provide their criteria for identifying high priority hillside projects in the 2016 Annual Report. The Water Board staff can collect this information and inform the next permit revision.

- (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 stormdrains and/or waterbodies.
  - evidence of sediment and/or construction related materials discharges into stormdrains and/or waterbodies.
  - illicit connections.
  - 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) Specific Problem(s) (List the specific problem(s) within the BMP categories);
- (g) Resolution of Problems noted using the following three standardized categories: Problems Fixed, Need More Time, and Escalate Enforcement; and
- (h) 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 each 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 requiring inspections identified as High Priority sites per C.6.e.ii.(2).(c);
  - (d) Total number of inspections conducted;
  - ~~(e) Number of violations in each of the six categories listed in C.6.e.i.;~~
  - ~~(f) Number of each type of enforcement action taken as listed in each Permittee's ERP;~~
  - ~~(g) Number of discharges, actual and those inferred through evidence, of sediment or other construction related materials;~~
  - ~~(h) Number of sites with discharges, actual and those inferred through evidence, of sediment or other construction related materials;~~
  - ~~(i) Number of violations enforcement actions (excluding verbal warnings) fully corrected prior to the next rain event but no longer than 10 business days after the violations are discovered or otherwise considered corrected in a timely, though longer period; and~~
- (3) 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.

**Comment [A9]:** Clarifies the intention is to capture the sites that require monthly inspections during the wet season. Some permittees may inspect smaller sites, not identified as high priority, routinely but less frequently than required for high priority sites.

**Comment [A10]:** As discussed at the February 24<sup>th</sup> meeting BASMAA would like to make suggestions for reducing reporting. All of the data is available to the Regional Board in the required electronic data tracking tables. The basic information of the number of sites, inspections and enforcement actions provides a picture of the permittee's program. It is not clear the benefit of the added information or how this is being used by Water Board staff.

- (4) 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 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 percentage of Permittees' inspectors attending each training. If there was no training in that year, so state.

MRP Provision	Current MRP Requirement	MRP 2.0 Update(s) recommended by Phase I Managers
C.7. Public Information and Outreach	Each Permittee shall increase the knowledge of the target audiences regarding the impacts of stormwater pollution on receiving water and potential solutions to mitigate the problems caused; change 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.	<p>Each Permittee shall increase the awareness of the target audiences regarding the impacts of stormwater pollution on receiving water and potential solutions <u>(including outreach &amp; education as part securing resources)</u> to mitigate the problems caused; positively influence the waste disposal and runoff pollution generation behavior of target audiences by encouraging implementation of appropriate solutions; and involve residents in mitigating the impacts of stormwater pollution.</p> <p><u>Permittees may comply with the requirements of Provision C.7 through development of a comparable education and outreach plan that addresses the overall objectives of the Provision.</u></p>

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Draft MRP 2.0 C.7. Table – Phase I Managers Early Input – 3/27/15

MRP Provision	Current MRP Requirement	MRP 2.0 Update(s) recommended by Phase I Managers
C.7.a. Storm Drain Inlet Marking	i. Task Description – Permittees shall mark and maintain at least 80 percent of municipally-maintained storm drain inlets with an appropriate stormwater pollution prevention message, such as “No dumping, drains to Bay” or equivalent. At least 80% of municipally-maintained storm drain inlet markings shall be inspected and maintained at least once per 5-year permit term. For newly approved, privately maintained streets, Permittees shall require inlet marking by the project developer upon construction and maintenance of markings through the development maintenance entity. Markings shall be verified prior to acceptance of the project.	<p><u>Move C.7.a.i text noted to C.2:</u>                      Permittees shall mark and maintain at least 80 percent of municipally-maintained storm drain inlets with an appropriate stormwater pollution prevention message, such as “No dumping, drains to Bay” or equivalent. At least 80% of municipally-maintained storm drain inlet markings shall be inspected and maintained at least once per 5-year permit term.</p> <p><u>Move C.7.a.i text noted to C.3:</u> For newly approved, privately maintained streets, Permittees shall require inlet marking by the project developer upon construction and maintenance of markings through the development maintenance entity. Markings shall be verified prior to acceptance of the project.</p>
	ii. Implementation level	Delete
	iii. Reporting	C.2: Report on implementation of the program once per permit term. C.3: Confirm that SD marking is verified prior to acceptance.

MRP Provision	Current MRP Requirement	MRP 2.0 Update(s) recommended by Phase I Managers
C.7.b. Advertising Campaigns	i. Task Description – Permittees shall participate in or contribute to advertising campaigns on trash/litter in waterways and pesticides with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in target audience.	“i. Task Description – Permittees <del>shall</del> <u>may</u> participate in or contribute to outreach campaigns with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in target audience.”
	ii. Implementation Level (1) Target a broad audience with two separate advertising campaigns, one focused on reducing trash/litter in waterways and one focused on reducing the impact of urban pesticides. The advertising campaigns may be coordinated regionally or county-wide. Permittees shall conduct a pre-campaign survey and a post-campaign survey 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.	Permittees shall develop and implement an Outreach Plan (may be developed at the countywide or regional level) designed to meet the goals of C.7.b.i. The Plan shall include advertising, social media, media relations, community involvement/watershed stewardship, and participation in outreach events. The Plan will be implemented at the local, countywide and/or regional level.
	iii. Reporting.	Delete existing reporting requirements. Insert: <u>Permittees shall report on the local, countywide, and regional implementation of the Outreach Plan in each annual report. At least once during the Permit term, Permittees will assess effectiveness of Outreach Plan implementation.</u>

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Draft MRP 2.0 C.7. Table – Phase I Managers Early Input – 3/27/15

MRP Provision	Current MRP Requirement	MRP 2.0 Update(s) recommended by Phase I Managers
C.7.c. Media Relations	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.	Delete: covered under C.7.b.
C.7.d. Stormwater Point of Contact	i. Task Description – Permittees shall individually or collectively create and maintain a point of contact, e.g., phone number or website, to provide the public with information on watershed characteristics and stormwater pollution prevention alternatives.	Delete. Spill and complaint response covered under C.5.
C.7.e. Public Outreach/Citizen involvement Events	i. Task Description – Participate in and/or host events such as fairs, shows, workshops, (e.g., community events, street fairs, and farmers’ markets), to reach a broad spectrum of the community with both general and specific stormwater runoff pollution prevention messages. Pollution prevention messages shall include encouraging residents to (1) wash cars at commercial car washing facilities, (2) use minimal detergent when washing cars, and (3) divert the car washing runoff to landscaped area.	<p><u>Participate in and/or host events such as fairs, shows, workshops (e.g., community events, street fairs, and farmers’ markets), or creek cleanup, to reach a broad spectrum of the community with both general and specific stormwater runoff pollution prevention messages.</u></p> <p>Require planned effort to be included in the C.7.b. Outreach Plan.</p> <p><u>Minimum Events:</u>  <u>Less than 100,000 = 3</u>  <u>100,000 to 250,000 = 5</u>  <u>Greater than 250,000 = 7</u></p>

Draft MRP 2.0 C.7. Table – Phase I Managers Early Input – 3/27/15

MRP Provision	Current MRP Requirement	MRP 2.0 Update(s) recommended by Phase I Managers
C.7.f. Watershed Stewardship collaborative efforts.	. 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.	Leave as is.
C.7.g. Citizen involvement	i. Task Description – Permittees shall individually or collectively, support citizen involvement events, which provide the opportunity for citizens to directly participate in water quality and aquatic habitat improvement, such as creek/shore clean-ups, adopt-an-inlet/creek/beach programs, volunteer monitoring, service learning activities such as storm drain inlet marking, community riparian restoration activities, community grants, other participation and/or host volunteer activities.	Delete: Combined with C.7.e.

Draft MRP 2.0 C.7. Table – Phase I Managers Early Input – 3/27/15

MRP Provision	Current MRP Requirement	MRP 2.0 Update(s) recommended by Phase I Managers
C.7.h. 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). 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.	Leave as is.
C.7.i. 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.	Delete.

The Phase I program managers comments are provided above on Provision C.7 of the MRP 2.0 Administrative Draft. Please note that these comments have not been vetted by MRP Permittees and are provided solely to assist the Regional Water Board’s consideration of and potential reaction to concepts or language it may, in its discretion, elect to advance relative to the reissuance of the Municipal Regional Permit for stormwater discharges (MRP). It is not intended and should not be misconstrued as an offer to take on, or volunteer for, any potential permit requirement that represents a new program or higher level of service relative to the MRP or its predecessor permits.

The Phase I program managers comments are provided below. The following is provided solely to assist the Water Board's consideration of and potential reaction to concepts or language it may, in its discretion, elect to advance relative to the reissuance of the Municipal Regional Permit for stormwater discharges (MRP). It is not intended and should not be misconstrued as an offer to take on, or volunteer for, any potential permit requirement that represents a new program or higher level of service relative to the MRP or its predecessor permits.

## 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 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.

The BASMAA Regional Monitoring Coalition (RMC) Creek Status Monitoring Program Quality Assurance Project Plan (January 2014) and Standard Operating Procedures (January 2014) have been deemed by Water Board staff as SWAMP comparable. These documents may be updated to reflect the changing state-of-the-science with Executive Officer's approval.

### 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>1</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?
- 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 (RMP), 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:

- (1) Are water quality objectives, both numeric and narrative, being met in local receiving waters, including creeks, rivers and tributaries?
- (2) 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 Surface Water Ambient Monitoring Program (SWAMP) Standard Operating Procedures<sup>2,3,4</sup> and shall include collection and reporting of in-

<sup>1</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.

<sup>2</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>3</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

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. Bioassessment sampling method shall be multihabitat reach-wide. ~~Macroinvertebrates shall be identified according to the Standard Taxonomic Effort Level I of the Southwestern Association of Freshwater Invertebrate Taxonomists (except Chironomids should be identified to subfamily), using the most current SWAMP-approved method.~~ 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.

Comment [c1]: Redundant with (3) below.

- (2) The sampling crew shall be trained by a SWAMP-approved trainer and possess a Scientific Collection Permit from the California Department of Fish and Wildlife, and participate in a SWAMP-approved inter-calibration exercise at least once in the permit term. The Discharger may (but is not required to) modify its sampling procedures if these referenced procedures change during the Order term. In such case, the Discharger 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>5</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>6</sup> All quality assurance and quality control steps specified in the *SWAMP Quality Assurance Program Plan*<sup>1</sup> shall be performed.
- (4) Bioassessment sampling requires the collection of general water quality parameters and nutrients at the site when biological samples are collected. General water quality parameters include measuring temperature,

Comment [c2]: Need to add reference to algae laboratory protocol and associated STE.

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*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>4</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).

<sup>5</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>6</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).

dissolved oxygen, pH, and specific conductance using a sonde. Nutrients include 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.
- (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.

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) Follow Up – The Permittees shall consider sites scoring less than 0.795 according to the California Stream Condition Index<sup>7</sup> (CSCI) as potentially 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. A SSID project shall also be considered when there is a substantial difference in CSCI score observed at a location relative to upstream or downstream sites. 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.

<sup>7</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).

- (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.

Sampling Agency	Minimum Number of Locations Sampled
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) Follow Up – The Permittees shall immediately resample if the chlorine concentration is greater than 0.13 mg/L. If the resample is still greater than 0.13 mg/L, then resample 1-7 days later to document persistence of the threshold exceedance. If the third sample remains > 0.13 mg/L then report to local stormwater program or water purveyor to find source of chlorine local Permittee(s) for follow up according in accordance with procedures described in Provision C.5 (Illicit Discharge Detection and Elimination).

**Comment [BdB3]:** Recommend trigger of 0.13 mg/L which is equal to the minimum quantification level (ML) of the most common and most practical EPA-approved measurement methods. This ML is derived from studies conducted by the State of Missouri using the EPA-approved DPD Colorimetric Method #4500-CL G (i.e., Hach colorimeter).

**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.

Sampling Agency	Minimum Number of Stream Reaches Sampled
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) Follow Up – The Permittees shall consider conducting a SSID project when results at one in one water body (stream reach/sampling station) exceed the applicable temperature trigger or demonstrate a spike in temperature with no obvious natural explanation. The temperature trigger is defined as when as two or more weekly average temperatures exceed the defined Maximum Weekly Average Temperature or when 20% of results at one sampling station exceed the instantaneous measurement above maximum of 24°C.<sup>8</sup> a. The defined MM Maximum Weekly Average Temperature is of 14.8/18.0°C for a Coho stream and 197.0°C for a Steelhead stream, or any single 20% of results in one waterbody exceeding the instantaneous measurement above 24°C.<sup>9</sup> Permittees shall calculate the weekly average temperature by breaking the measurements into non-overlapping, 7-day periods. If two or more weekly average temperatures are above the appropriate Maximum Weekly Average Temperature trigger, the stream reach is suitable for a SSID.

**Comment [c4]:** Recommended revision may change. Working with WB/EPA/NOAA on exploring appropriate threshold.

**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 and/or where either past data or best professional judgment indicates that general water quality parameters may negatively affect that beneficial uses.
- (3) Frequency, Timeframe and Number of Sites – Sondes shall be installed so that parameters are recorded at 15-minute intervals over 1-2 weeks in the

<sup>8</sup> This maximum weekly average temperature triggers are identified in Brungs, W.A., and Jones, B.R. 1977. *Temperature Criteria for Freshwater Fish: Protocol and Procedures*. Ecological Research Series, EPA-600/3-77-061. Studies by Smith, J.J., and Li, H.W. 1983 (*Energetic Factors Influencing Foraging Tactics of Juvenile Steelhead Trough, *Salmo gairdneri**) suggest that juvenile steelhead may tolerate even warmer temperatures when food is abundant. The 24°C acute threshold is based on studies investigating the effects of water temperature on salmonids of the Pacific Northwest and is cited on page xx 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). THIS WILL GO INTO THE FACT SHEET

<sup>9</sup> This weekly average triggers are identified in Brungs, W.A., and Jones, B.R. 1977. *Temperature Criteria for Freshwater Fish: Protocol and Procedures*. Ecological Research Series, EPA-600/3-77-061. Studies by Smith, J.J., and Li, H.W. 1983 (*Energetic Factors Influencing Foraging Tactics of Juvenile Steelhead Trough, *Salmo gairdneri**) suggest that juvenile steelhead may tolerate even warmer temperatures when food is abundant correspond 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 threshold is based on studies investigating the effects of water temperature on salmonids of the Pacific Northwest and is cited on page xx 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). THIS WILL GO INTO THE FACT SHEET

spring concurrent with bioassessment sampling and 1-2 weeks in summer at the same sites. The required number of samples is specified below.

Sampling Agency	Minimum Number of Sample Sites in Spring	Minimum Number of Sample Sites in Summer
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) Follow Up – The Permittees shall consider conducting a SSID project when results ~~at~~ in one ~~water body (stream reach)~~ 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 calculate the weekly average temperature and dissolved oxygen by separating the measurements into non-overlapping, 7-day periods.~~ The temperature trigger is defined as the Maximum Weekly Average Temperature of ~~44.8~~ 18.0°C for a Coho stream and ~~197.0~~ 19.0°C for a Steelhead stream, ~~or and the instantaneous maximum of any single instantaneous measurement above 24°C.~~ <sup>9, 8</sup> The Permittees shall calculate the weekly average temperature by separating the measurements into non-overlapping, 7-day periods. The Permittees shall consider conducting a SSID project if ~~If~~ the average weekly temperature is above the appropriate Maximum Weekly Average Temperature trigger or if 20% of measurements at one station exceed the instantaneous maximum. ~~, the trigger is exceeded.~~ A trigger is also exceeded if 20% of instantaneous measurements for pH are < 6.5 or > 8.5. A trigger is exceeded if 20% of the instantaneous specific conductance readings are > 2000µS, or there is a spike in readings with no obvious natural explanation. A trigger is exceeded if 20% of instantaneous dissolved oxygen readings are ~~≤~~ > 7 mg/L in a cold water fishery stream or are <= 5 mg/L in a warm 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 or by validated and SWAMP-approved alternative methods. ~~pollutants listed and by the methods described on Table 8.1.~~

Toxicity test biological endpoint data must be analyzed using the Test of Significant Toxicity (TST) t test approach.<sup>10</sup> Each sample shall be subject to determination of “Pass” or “Fail” and “Percent Effect” from a single-effluent concentration chronic toxicity test at the in-stream waste concentration (IWC) (100% receiving water or 100% storm drain outfall effluent, as applicable) using the TST. The null hypothesis ( $H_0$ ) for the TST approach is: Mean IWC response  $\leq 0.75 \times$  Mean control response. A test result that rejects this null hypothesis is reported as “Pass.” A test result that does not reject this null hypothesis is reported as “Fail.” The relative “Percent Effect” at the IWC is defined and reported as:  $((\text{Mean control response} - \text{Mean IWC response}) : \text{Mean control response}) \times 100$ . When Should the State Water Resources Control Board Board’s adopt the proposed Policy for Toxicity Assessment and Control is fully approved and in effect, the Regional Water Board Executive Officer may direct the Permittee(s) to replace current toxicity program elements with standardized procedures in the Policy.

**Comment [BdB5]:** Recommend removing TST approach because it is not adopted yet. However, see text below which requires the TST approach in the event that it becomes fully approved within the permit term.

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

Organism	Test	USEPA Protocol
<i>Pimephales promelas</i> (Fathead Minnow)	Larval Survival and Growth	EPA-821-R-02-013 <sup>11</sup> <del>EPA 833 R 10 003</del> <sup>12</sup>
<i>Ceriodaphnia dubia</i> (Freshwater Amphipod/Crustacean)	Survival and Reproduction	EPA-821-R-02-013 <del>EPA 833 R 10 003</del>
<i>Hyalella Azteca</i> (Freshwater Amphipod)	Survival	EPA-821-R-02-012 <sup>13</sup> <del>600-R-99-064</del> <del>EPA 833 R 10 003</del>
<i>Chironomus dilutus</i> (midge)	Survival	<del>EPA-600-R-99-064</del> <del>EPA 821 R 02 012</del> <sup>14</sup> <del>EPA 833 R 10 003</del>
<i>Selenastrum capricornutum</i> (Green Algae)	Growth	EPA-821-R-02-013 <del>EPA 833 R 10 003</del>

**Comment [BdB6]:** This is the first table with a table number. For consistency, recommend adding table numbers to preceding tables.

**Comment [BdB7]:** EPA-821-R-02-012 method manual does not include *H. azteca* and *C. dilutus* (except in an appendix) and does not specify the test protocol design (e.g., anything other than the temperature and to use larvae), such as the number of replicates, number of organisms, etc. Recommend replacing with EPA-600-R-99-064 which does provide specific protocols for *H. azteca* and *C. dilutus*. A reference toxicant test method is prescribed for *H. azteca* and *C. dilutus* in water in the EPA-600-R-99-064 manual.

- (2) Sample Design/Locations – Sample locations may be selected by the Permittees to monitor locations where toxicity could be likely; to coincide

<sup>10</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>11</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>12</sup> National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833 R 10 003) 2010.

<sup>13</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).

<sup>14</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).

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. The required number of samples is specified below.

Sampling Agency	Minimum Number of Sample Sites <sup>a</sup>
Alameda Permittees	3-2 per year
Santa Clara Permittees	3-2 per year
Contra Costa Permittees	2-1 per year
San Mateo Permittees	2-1 per year
Fairfield-Suisun & Vallejo Permittees Collectively	1 per 5-year period

<sup>a</sup>In the case that a statewide coordinated pesticides and pesticides-related toxicity monitoring program begins collecting data on an ongoing basis during the permit term, the Permittees may request the Executive Officer reduce or eliminate this monitoring requirement accordingly.

- (4) Follow Up – The Permittees shall consider conducting a SSID project when a sample result indicates growth, reproduction, or survival sample result for toxicity of any test organism is significantly different than relative to the Lab Control treatment as determined consistent with laboratory methods listed in Table 8.1. –50% or greater effects relative to the control for a chronic toxicity test, or 40% or greater effect relative to the control for an acute toxicity test.

vi. Toxicity and Pollutants in Sediment

- 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 (or organisms) listed and by the methods described on Table 8.2. Analytical methods shall be RMC QAPrP methods or by validated and SWAMP-approved alternative methods.

Should the State Water Resources Control Board adopt the proposed Policy for Toxicity Assessment and Control, the Regional Water Board Executive Officer may direct the Permittee(s) to replace current toxicity program elements with standardized procedures in the Policy.

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Table 8.2 Sediment Toxicity & Pollutants Elements Analytical Procedures

Organism or Pollutant
<u>Hyaella aAzteca<sup>a</sup> survival</u> (Freshwater amphipod)
<u>PCBs</u>
<u>Total Mercury</u>
Pyrethroids <sup>b</sup> : bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin
<u>Carbaryl<sup>c</sup> Carbaryl<sup>b</sup></u>
<u>Fipronil<sup>d</sup> Fipronil<sup>b</sup></u>

Comment [BdB8]: Recommend keeping table as a list and referencing methods (RMC QAPrP or SWAMP-approved) in text.

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<b>Organism or Pollutant</b>
Organochlorine <del>pesticides</del> <sup>2</sup> pesticides <sup>b</sup> : 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
<del>Grain size</del>

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<sup>a</sup> Methods shown are from the SWAMP SPoT QAPP. When no protocol is listed, use RMC QAPrP methods.

<sup>a</sup> EPA-600-R-99-064 or SWAMP comparable methodology.

<sup>b</sup> In the case that a statewide coordinated pesticides and pesticides-related toxicity monitoring program begins collecting data on an ongoing basis during the permit term, the Permittees may request the Executive Officer reduce or eliminate this monitoring requirement accordingly.

- (1) Sample Design/Locations – Samples shall be collected at fine-grained depositional, ~~bottom of watershed~~ 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. The required number of samples is specified below.

Sampling Agency	Minimum Number of Sample Sites
Alameda Permittees	<del>3-2</del> per year
Santa Clara Permittees	<del>3-2</del> per year
Contra Costa Permittees	<del>2-1</del> per year
San Mateo Permittees	<del>2-1</del> per year
Fairfield-Suisun & Vallejo Permittees Collectively	1 per 5-year period

- (3) Follow Up – The Permittees shall consider conducting a SSID project when a sample result ~~indicates is significantly different than the Lab Control treatment as determined consistent with laboratory methods. 50% or greater effects relative to the control for a chronic toxicity test, or 40% or greater effect relative to the control for an acute toxicity test.~~ The Permittees shall consider conducting a SSID project when sample results indicate a pollutant is present at a concentration exceeding its water quality objective in the Basin Plan. For pollutants without WQOs, Permittees shall consider conducting a SSID project when sample results exceed ~~Probable Effects Concentrations or TECs~~ from MacDonald 2000.<sup>15</sup>

**vii. Pathogen Indicators**

<sup>15</sup> ~~TEC and~~ PECs 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.

- (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>16</sup>
- (2) Sample Design/Locations – The Permittees shall collect one or more samples in a creek and at an area where full-body 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. The required number of samples is specified below.

Sampling Agency	Minimum Number of Sample Sites
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) Follow Up – If U.S. EPA’s statistical threshold value<sup>17</sup> for 36 per 1000 primary contact recreators is exceeded, the water body reach shall be considered for a Stressor/Source Identification SSID project per C.8.e.

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

When any Creek Status Monitoring result triggers follow up or potential follow up action as indicated within the provisions of C.8.d, the Permittees shall take the following actions:

- i. Review Creek Status Monitoring results annually and develop a list of all results exceeding thresholds described in C.8.d. Pollutant of Concern Monitoring (C.8.f) results may be included on the list as appropriate and determined by the Permittee.
- ii. Select follow up SSID projects from the list developed in C.8.e.i based on Permittee-defined priorities.

Permittees who conduct SSID projects through a regional collaborative shall collectively initiate a minimum of eight new SSID projects 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 reports when submitted to the Water Board. The regional report shall include a running list of the status of all RMC SSID projects, including the start date, problem definition, summary of monitoring results, and schedule for each

Comment [BdB9]: Recommend deleting Appendix and bringing requirements into main body of permit.

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<sup>16</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>17</sup> USEPA. 2012. *Recreational Water Quality Criteria*. Office of Water 820-F-12-058. Table 4. STVs are based on studies of people recreating at bathing beaches that received bacteriological contamination via treated human wastewater.

project. The regional SSID report shall be submitted annually to the Water Board with each Urban Creeks Monitoring Report.

If conducted through a stormwater countywide program, the Santa Clara and Alameda Permittees each shall be required to initiate no more than five ~~(two 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.

iii. Permittees shall conduct site specific SSID project(s) (or non-site specific if the problem is wide-spread) in the stepwise process listed below.

(1) **Step 1:** Permittees shall develop a work plan for each SSID project. The work plan shall be submitted to the Water Board as part of the UCMR. The work plan should:

- define the problem (e.g., magnitude, temporal and geographic extent) to the extent known;
- describe the SSID project objectives, including the management context within which the results of the investigation will be used;
- 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);
- list candidate causes of the problem (e.g., biological stressors, pollutant sources, physical stressors);
- establish a schedule for further studies to investigate the cause(s) of the trigger stressor/source. Further studies may include evaluation of existing data, desktop analyses of land uses and management actions, and/or collection of new data.
- For toxicity studies where there is no chemical pollutant associated with the creek status monitoring sample exhibiting toxicity, a Toxicity Identification Evaluations (TIE)<sup>18</sup> should be conducted. Where chemical data indicate a pollutant, such as fipronil or a pyrethroid, are present at adverse effects levels in the sample location.

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<sup>18</sup> Select TIE methods from the following references: For sediment: (1) Ho KT, Burgess R., Mount D, Norberg-King T, Hockett, RS. 2007. *Sediment toxicity identification evaluation: interstitial and whole methods for freshwater and marine sediments*. USEPA, Atlantic Ecology Division/Mid-Continental Ecology Division, Office of Research and Development, Narragansett, RI, or (2) Anderson, BS, Hunt, JW, Phillips, BM, Tjeerdema, RS. 2007. *Navigating the TMDL Process: Sediment Toxicity*. Final Report- 02-WSM-2. Water Environment Research Federation. 181 pp. For water column: (1) USEPA. 1991. *Methods for aquatic toxicity identification evaluations. Phase I Toxicity Characterization Procedures*. EPA 600/6-91/003. Office of Research and Development, Washington, DC., (2) USEPA. 1993. *Methods for aquatic toxicity identification evaluations. Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity*. EPA 600/R-92/080. Office of Research and Development, Washington, DC., or (3) USEPA. 1996. *Marine Toxicity Identification Evaluation (TIE), Phase I Guidance Document*. EPA/600/R-95/054. Office of Research and Development, Washington, DC.

it is not necessary to conduct a TIDE, and the SSID project would be considered complete.

- For physical habitat, physiochemical~~leat~~ pollutants (dissolved oxygen, pH, conductivity, temperature), nutrients, metals, pH, and other stressors, the study shall generally follow Step 5 (Identify Probably Causes) of the Causal Analysis/Diagnosis Decision Information System (CADDIS).<sup>19</sup>
- 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>20</sup>

(2) **Step 2:** The work plan shall be implemented and the study shall be conducted according to the schedule included in the SSID project work plan or subsequent revisions documented in Permittee UCMRs.

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(3) **Step 3:** In their UCMRs, Permittees shall annually report on the status of SSID project work plan(s) implementation. In the UCMR following the completion of the SSID project, Permittees shall submit an SSID report describing the findings of desktop analyses (if appropriate) and monitoring results, and communicate next steps, including planned control measures to address the stressor as applicable.

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- If a Permittee(s) determines that their discharges are contributing to an exceedance of a water quality standard, the Permittee(s) shall comply with the procedures described in Provision C.1.

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- If a Permittee(s) determines that their discharges are not contributing to an exceedance of a water quality standard, the Permittee(s) may end the SSID project.

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- If the Permittee finds that the trigger threshold exceedance is episodic, then future monitoring and/or desktop analyses shall be outlined in the SSID report. To the extent possible, future monitoring will be conducted under Provision C.8.d (Creek Status Monitoring).

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ii. 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 shall follow guidance for Toxicity Reduction Evaluations (TRE)<sup>21</sup> or Toxicity Identification Evaluations (TIE).<sup>22</sup> A TRE, as

<sup>19</sup> [http://www.epa.gov/caddis/si\\_step5\\_overview.html](http://www.epa.gov/caddis/si_step5_overview.html)

<sup>20</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)

<sup>21</sup> USEPA. August 1999. *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*. EPA/833B-99/002. Office of Wastewater Management, Washington, D.C.

<sup>22</sup> Select TIE methods from the following references: For sediment: (1) Ho KT, Burgess R., Mount D, Norberg-King T, Hockett, RS. 2007. *Sediment toxicity identification evaluation: interstitial and whole methods for freshwater and marine sediments*. USEPA, Atlantic Ecology Division/Mid-Continental Ecology Division, Office of Research and Development, Narragansett, RI, or (2) Anderson, BS, Hunt, JW, Phillips, BM, Tjeerdema, RS.

~~adapted for urban stormwater data, 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.~~

~~iii. Identify and evaluate the effectiveness of options for controlling the cause(s) of the trigger stressor/source.~~

~~iv. Implement one or more controls.~~

~~v. Confirm the reduction of the cause(s) of trigger stressor/source.~~

iv. 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 Pollutants of Concern 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 (WLAs) 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.

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*2007. Navigating the TMDL Process: Sediment Toxicity. Final Report -02 WSM 2. Water Environment Research Federation. 181 pp. For water column: (1) USEPA. 1991. Methods for aquatic toxicity identification evaluations. Phase I Toxicity Characterization Procedures. EPA 600/6-91/003. Office of Research and Development, Washington, DC., (2) USEPA. 1993. Methods for aquatic toxicity identification evaluations. Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity. EPA 600/R-92/080. Office of Research and Development, Washington, DC., or (3) USEPA. 1996. Marine Toxicity Identification Evaluation (TIE), Phase I Guidance Document. EPA/600/R-95/054. Office of Research and Development, Washington, DC.*

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

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

**Table 8.3 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 <u>(including use of emerging technologies such as semipermeable membrane devices and passive sediment samplers)</u>; 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: <p>Methods described for Monitoring Type #1 or #2.</p>

- ii. **Parameters and Monitoring Frequency** – The Permittees shall conduct POC monitoring consistent with the monitoring intensity and frequency specified in

Table 8.4. 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 ~~fourth~~ fifth Water Year (i.e., September 30, 2019) to address each monitoring type are also specified.

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

Pollutant of Concern	Total Samples <sup>1</sup> Collected/Analyzed (yearly minimum) for each Countywide Program: <del>Alameda &amp; Contra Costa, Santa Clara, and San Mateo &amp; Contra Costa</del>	Minimum Number of Samples for each Monitoring Type <sup>2</sup> <del>Alameda &amp; Santa Clara/ San Mateo &amp; Contra Costa</del>
Polychlorinated Biphenyls (PCBs)	80 (8)	8 samples minimum for monitoring types 1-5
Total Mercury	80 (8)	8 samples minimum for monitoring types 1-5
Copper	<del>10 / 5</del> <u>20 (2)</u>	<del>4 / 2</del> samples minimum for monitoring types 4-5
<b>Pesticides<sup>5</sup>:</b> Pyrethroids (water and sediment): bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin Indoxacarb Fipronil Carbaryl (in sediments)	<del>10 (1) / 5 (1) for each</del> <u>20 (2) for each</u>	<del>4 / 2</del> samples minimum for monitoring types 4-5
<b>Toxicity:</b> Water Column (during storms) Sediment (wet season, not necessarily during storms)	<del>10 (1) / 5 (1)</del> <u>20 (2)</u> for each	<del>10 / 5</del> <u>20</u> samples for monitoring type 4
<b>Emerging Contaminants:</b> Perfluorooctane Sulfonates (PFOS, in sediment) Perfluoroalkyl sulfonates (PFAS, in sediment) Alternative flame retardants	See footnote 3	See footnote 3
<b>Ancillary Parameters<sup>4</sup>:</b> Total organic carbon Suspended sediments (SSC) Hardness	as necessary to address management questions for other POCs – see footnote 4	
<b>Nutrients:</b> Ammonium, Nitrate, Nitrite, Total Kjeldahl Nitrogen, Orthophosphate, Total Phosphorus (all nutrients collected together for each sample)	<del>10 / 5</del> <u>20 (2)</u> for each nutrient species	<del>120 / 5</del> samples for monitoring type 4 for each nutrient species.

**Comment [BdB10]:** Changed to fifth year for consistency with Table footnote #1 and prior work group discussions.

**Comment [BdB11]:** Recommend tiering the requirements for some pollutants.

**Comment [BdB12]:** Total samples reduced for consistency with pesticide effort.  
  
Recommend eliminating annual requirement to allow for an intensive watersheds study conducted over 1 or 2 years.

**Comment [BdB14]:** Total samples reduced for consistency with pesticide effort.

**Comment [BdB15]:** 20 samples appears to be a typo based on RWB edits to previous column.

**Comment [BdB13]:** Please provide a technical justification for why the sediment samples cannot be collected in the dry season. Recommend removing seasonal requirement for the sediment samples

**Comment [BdB16]:** Total samples reduced for consistency with pesticide effort.  
  
Recommend eliminating annual requirement to allow for an intensive watersheds study conducted over 1 or 2 years.

<sup>1</sup>This column indicates the total number of samples, across all applicable monitoring types (i.e., monitoring types 1-5 from Table 8.3), 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. There must be a minimum of 8 PCBs samples collected during every year of the permit, including the final year.

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<sup>2</sup>This column indicates the monitoring types from Table 8.3 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) to address the applicable monitoring types by the end of year four of the permit. For example, each set of Permittees (i.e., Santa Clara County, San Mateo County, Alameda County, and Contra Costa County) must collect and analyze at least 8 samples to address monitoring types 1-5 in Table 8.3 for both total PCBs and total mercury. Some collected samples may address multiple management questions.

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<sup>3</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 would address at least PFOS, PFAS, and alternative flame retardants being used to replace PBDEs. The study would identify the relevant alternative flame retardants to assess and the appropriate media in which to monitor.

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<sup>4</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.

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<sup>5</sup>In the case that a statewide coordinated pesticides and pesticides-related toxicity monitoring program begins collecting data on an ongoing basis during the permit term, the Permittees may request the Executive Officer reduce or eliminate this monitoring requirement accordingly.

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iii. **POC Parameters and Analytical Methods** – Samples collected consistent with Table 8.4 and shall be analyzed for parameters listed in Table 8.5. Analytical methods shall be RMC QAPrP methods or by validated and SWAMP-approved alternative methods. Permittees may use.

Table 8.5 POC Analytes and Analytical Methods

Pollutant of Concern	Matrix	Analyte(s)
Polychlorinated Biphenyls (PCBs)	Water	Total PCBs
		Total Organic Carbon
		Suspended sediments (SSC)
	Bedded Sediment	Total PCBs
		Total organic carbon
Mercury	Water	Total Mercury
	Bedded Sediment	Total Mercury
Copper	Water	Total Copper
		Dissolved Copper
		Hardness
Pesticides <sup>2</sup>	Water	Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin Imidacloprid

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Pollutant of Concern	Matrix	Analyte(s)
		Fipronil and Carbaryl (bedded sediment only)
	Bedded Sediment	Total Organic Carbon
Toxicity <sup>2</sup>	Water	<i>Pimephales promelas</i> (Fathead Minnow)
		<i>Ceriodaphnia dubia</i> ( <i>water flea</i> ) & <i>Hyaella Azteca</i> (Freshwater Amphipod)
		<i>Chironomus dilutus</i> (midge)
		<i>Selenastrum capricornutum</i> (Green Algae)
	Bedded Sediment	<i>Hyaella azteca</i>
Nutrients	Water	Ammonium
		Nitrate
		Nitrite
		Total Kjeldahl Nitrogen
		Orthophosphate
		Total Phosphorus

<sup>1</sup>Where no method is listed, use RMC QAPrP methods alternative methods. Other analytical laboratory methods may be used provided that similar data quality is employed to answer the management information needs.

<sup>2</sup>In the case that a statewide coordinated pesticides and pesticides-related toxicity monitoring program begins collecting data on an ongoing basis during the permit term, the Permittees may request the Executive Officer reduce or eliminate this monitoring requirement accordingly.

**C.8.g. Reporting**

- i. Water Quality Standard Exceedence** – When data collected pursuant to C.8.a.-C.8.f. indicate that discharges are causing or contributing to an exceedence 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 follow up report in accordance with Provision C.1 requirements. This reporting requirement shall not apply to continuing or recurring exceedences of water quality standards previously reported to the Water Board or to exceedences of pollutants that are to be addressed pursuant to Provisions C.8 through C.14 of this Order 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. 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 foregoing previous October 1–September 30 period shall be submitted by March 15 of each year.
- iii. Urban Creeks Monitoring Report** – The Permittees shall submit a comprehensive Creek Status Monitoring Report no later than March 15 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 combines 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 loggers; and general water quality (sonde data). For each site, check the parameters sampled. This will provide a summary of all Creek Status Monitoring conducted that water year.
- (2) A SSID Update Table listing all the SSID Projects to be initiated, being conducted, or completed through the Regional Monitoring Collaborative. This table shall state the date the project was started; hyperlink to the project work plan; summary of work completed during the reporting year; follow-up actions taken or planned, with dates, to reduce the source or stressor; and responsible agency.
- (3) For all data, a statement of the data quality;
- (4) An analysis of the data, which shall include the following:
  - (1) Identification and analysis of any trends in stormwater or receiving water quality;
    - Calculations of CSCI scores and physical habitat endpoints;
    - Comparison of CSCI scores to:
      - Each other;
      - Any applicable, available reference site(s);
      - Physical habitat endpoints.
  - (5) 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 follow-up actions;
    - Evaluate the effectiveness of existing control measures;
    - Identify management actions needed to address water quality problems.

**iv. Stressor/Source Identification Reports** – The Permittees shall submit a report on each completed SSID Project in a stand-alone format suitable for posting and

distribution. Completed SSID Project reports shall be submitted no later than March 15 of the year following project completion.

v. **Integrated Monitoring Report** – No later than March 15 of the fifth year of the permit term, Permittees shall submit an Integrated Monitoring Report in lieu of the annual Creek Status 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 during the permit term and shall contain the following:

- (1) The Water Year Data Table, as described in Provision C.8.g.iii above, containing information pertaining to the fourth year monitoring data;
- (2) The Integrated Monitoring Report shall include a comprehensive analysis of all data collected pursuant to Provision C.8. across years 1 through 4 of the permit, and may include other pertinent studies;
- (3) For Pollutants of Concern, the report shall include methods, data, calculations, load estimates, and source estimates for each Pollutant of Concern Monitoring parameter, *as appropriate*;
- (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)~~ *Pollutant load and concentration at each mass emissions station;*
- ~~(9)~~(8) A listing of volunteer and other non-Permittee entities whose data are included in the report;
- ~~(10)~~(9) Assessment of compliance with applicable water quality standards;
- ~~(11)~~(10) A signed certification statement.

**C.8.h. Pacifica TMDL Implementation Monitoring – placeholder if needed**

## 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. However, urban runoff management agencies (i.e., the Permittees) are not solely responsible for attaining the allocations because their authority to regulate pesticide use is constrained by federal and state law. 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, cyantraniliprole); fipronil and its degradates; indoxacarb, organophosphorous insecticides (chlorpyrifos, diazinon, and malathion); pyrethroids (metofluthrin, bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, and permethrin); carbamates (e.g., carbaryl, ~~aldicarb~~).

Comment [BWG1]: No longer allowed for use in California.

### 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>1</sup> and have adopted an IPM policy or ordinance and standard operating procedures to implement the policy or ordinance.

- 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.

<sup>1</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).

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 ~~pesticides of concern~~ 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.
- (2) In their Annual Reports, the Permittees shall provide a brief description of a minimum of three IPM ~~actions, tactics or strategies implemented in~~ ~~employed during~~ the reporting year, ~~focusing to the extent possible on new or enhanced actions taken.~~
- (3) IPM policies or ordinances and IPM standard operating procedures shall be submitted to the Water Board upon request.

**Comment [BWG2]:** Clarification that only the pesticides of concern should be reported.

**Comment [BWG3]:** Clarify not necessarily looking for new or enhanced actions in mature programs, just example of how permittee is implementing the program.

**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 and EcoWise Certified.

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~~ include contract specifications requiring contractors to implement IPM ~~consistent with the Permittee’s IPM policies,~~ 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. ~~Contractor certification as a pest control advisor (PCA) alone is not evidence of IPM implementation, because PCA training is not necessarily based on IPM strategies.~~ Similarly, IPM certifications that are awarded to a pest control company may not guarantee an individual employee

**Comment [BWG4]:** Limitations to certification programs because they apply to individuals and not a company.

**Comment [BWG5]:** Added for clarification

**Comment [BWG6]:** Added for clarification

**Comment [BWG7]:** Water Board staff suggested removing this in February 24<sup>th</sup> meeting.

will always use IPM strategies. Thus, periodic Permittee observation of contractor performance is necessary.

- ii. **Implementation** – Permittees shall ~~observe~~ monitor contractor 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.

**Comment [BWG8]:** Provides more flexibility for how the permittee will verify compliance. Agency staff may not be qualified to visually observe activities and confirm IPM techniques.

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

- i. **Task Description** – The Permittees shall maintain regular 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 violations of pesticide regulations (e.g., illegal handling and applications of pesticides) associated with stormwater management, particularly the California Department of Pesticide Regulation 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 each of the three types of communications with county agricultural commissioners and report follow-up 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 or landscape professionals by (a) explaining the links between pesticide usage and water quality; (b) providing information about EcoWise

**Comment [BWG9]:** Several pesticides of concern are used by landscapers also

~~Certified-IPM certification~~ in structural pest management, ~~or functionally equivalent~~ certification programs ~~or landscape professional trainings~~; and (c) disseminating tips for hiring structural pest control operators, such as the tips prepared by the University of California Extension IPM Program (UC-IPM), ~~or landscape professionals~~.

Comment [BWG10]: Included to encourage Bay Friendly or Green Gardener trainings

- (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 functionally equivalent~~ certification program. Permittees are encouraged to work with the Pesticide Applicators Professional Association; the California Association of Pest Control Advisors; California Department of Pesticide Regulation; county agricultural commissioners; UC-IPM; BASMAA; ~~EcoWise Certified Program (or functionally equivalent certification program)~~; Bio-integral Resource Center and others to promote IPM to PCOs.

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 California Department of Pesticide Regulation (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; 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-f 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.

**Comment [BWG11]:** Include evaluation of regulatory participation activities

The Phase I program managers comments are provided below. The following is provided solely to assist the Water Board's consideration of and potential reaction to concepts or language it may, in its discretion, elect to advance relative to the reissuance of the Municipal Regional Permit for stormwater discharges (MRP). It is not intended and should not be misconstrued as an offer to take on, or volunteer for, any potential permit requirement that represents a new program or higher level of service relative to the MRP or its predecessor permits.

## C. 10. Trash Load Reduction

The Permittees shall demonstrate compliance with 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 municipal separate storm sewer systems (MS4s) in accordance with the requirements of this provision. These requirements reflect a continuation of progress achieved by Permittees towards reducing trash-related receiving water impacts during previous permit terms and through the implementation of Permittee Long-Term Trash Load Reduction Plans. The overall goal of the plans is to reduce trash discharges to a level of 100%, or no adverse impact to receiving waters from trash discharged from MS4s, by July 1, 2025.

Flood management agencies, which are non-population-based Permittees, are not subject to these trash reduction requirements except for continued implementation of requirements for trash full capture systems and Hot Spot cleanups, as specified in subsections C.10.b.i and C.10.c, respectively.

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

By July 1, 2017 Permittees shall implement trash load reduction control measures and other actions to reduce trash discharges to receiving waters by 70% from 2009 levels in accordance with the following trash generation area management requirements, including mandatory minimum full capture systems.

~~in accordance with the following schedule and trash generation area management requirements, including mandatory minimum full trash full capture systems.~~

~~**Schedule** – Permittees shall reduce trash discharges from 2009 levels to receiving waters in accordance with the following schedule:~~

~~60% by July 1, 2016;~~

~~70% by July 1, 2017;~~

~~80% by July 1, 2019; and~~

~~a. 100%, or no adverse impact to receiving waters from trash, by July 1, 2022.~~

- ~~i. **Trash Generation Area Management** - Permittees shall demonstrate progress towards and attainment of the C.10.a.i trash discharges percentage-reduction requirements by the 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, or if revised, included in their 2015-2016 Annual Reports, and through the accounting of reductions through other methods described in C.10.b. These maps, which provide the basis of 2009 trash discharge levels from jurisdictional~~

**Comment [A1]:** Helps the reader understand at the beginning of the section that this is not a new requirement that began with MRP 2.0, rather a continuation of load reductions that occurred during MRP 1.0.

**Comment [A2]:** Consistent with timeline included in SWRCB proposed amendments.

**Comment [A3]:** Consistent with MRP 1.0 and provides clarity as to which provisions affect non-population based Permittees

**Comment [A4]:** Consistent with issue discussed at February 24<sup>th</sup> workgroup meeting and March 5 Steering Committee meeting.

**Comment [A5]:** This is the first annual report submitted under MRP 2.0.

areas, delineate trash generation areas within Permittees' jurisdictions into the following trash generation rate categories: Low, Moderate, High and Very High.<sup>1</sup>

- ii. ~~Low = less than 2.5 gal/acre/yr;~~  
~~Medium = 7.5 gal/acre/yr;~~  
~~High = 30 gal/acre/yr; and~~  
~~Very High = greater than 100 gal/acre/yr.~~

- iii. Permittees also designated trash management areas on their maps, encompassing one or more trash generation areas, within which they will implement trash control actions.

i.

Permittees shall implement trash prevention and control actions, including full capture systems or other actions, ~~or combinations of actions~~, with trash discharge control equivalent to or better than full capture systems, to reduce trash generation to a Low trash generation rate ~~or better. The C.10.a.i percent reductions shall be demonstrated by percent of 2009 Very High, High, and Medium trash generation areas reduced to Low trash generation by the C.10.a.i schedule dates.~~

Permittees shall implement programs consistent with other provisions (e.g., C.3, C.4, C.5, C.6) designed to ensure address that trash from private lands connections draining directly to their storm drain systems in Very High, High, and Medium/Moderate trash generation areas. Implementation of these programs shall be deemed are equipped with equivalent to full capture systems or are managed with trash discharge control actions equivalent to or better than full trash full capture systems to a Low trash generation rate. The latter shall be assessed with visual assessment consistent with C.10.b.ii.

- iv. ii. **Mandatory Minimum Full Capture Systems** - Permittees shall install and maintain a mandatory minimum number of full capture devices, to treat runoff from an area equivalent to 30% of Retail/Wholesale Land that drains to the storm drain system within their jurisdictions. A population-based Permittee with a population less than 12,000 and retail/wholesale land less than 40 acres, or a population less than 2000, is exempt from this trash capture requirement. **Table XX** contains the minimum amount of drainage area that must be treated with full capture devices by each population-based Permittee, and the minimum number of trash capture devices required to be installed and maintained by non-population-based 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 that is either: a) of not less than the peak flow rate,  $Q^2$ , resulting from a one-year, one-hour, storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain. Types of systems listed in Appendix I

**Comment [A6]:** Consistent with agreement reached about explaining rates (as ranges) in fact sheet and removing from provision.

**Comment [A7]:** Moved concept to "Demonstration of Trash Outcomes" section

**Comment [A8]:** Moderate is the term we've been using, as opposed to medium.

**Comment [A9]:** Inconsistent with current assessment strategies. Focused on streets and sidewalks in public ROW.

<sup>1</sup> See fact sheet for trash generation rates associated with each category.

<sup>2</sup> Rational equation is used to compute the peak flow rate:  $Q = C \times I \times A$ , where Q = design flow rate (cubic feet per second, cfs); C = runoff coefficient (dimensionless); I = design rainfall intensity (inches per hour, as determined per the rainfall isohyetal map specific to each region, and A = subdrainage area (acres).

~~of the Bay Area-wide Trash Capture Demonstration Project Final Project Report<sup>3</sup> or certified by the State Water Resources Control Board or San Francisco Bay Regional Water Quality Control Board are deemed full capture systems. Stormwater treatment facilities implemented and maintained in accordance with provision C.3 are also deemed full capture systems unless determined otherwise by the Executive Officer. of not less than the peak flow rate resulting from a one year, one hour, storm in the sub drainage area. 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.~~

~~f~~

**Comment [A10]:** Changed for consistency with State Board amendments.

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

~~– Full eCapture Systems – By July 1, 2017~~

~~– Permittees shall develop and implement measures to an operation and e, inspect, and maintenance program maintain to ensure that these devicestrash full capturefull capture deviceessystems within their jurisdiction perform at a level at a level consistent with the definition of a full capture system;~~

~~i.~~

~~ii. The maintenance and operation program of each full capture device shall be adequate designed to prevent plugging, flooding, or a full condition of the device's trash reservoir.~~

~~– Each Permittee that elects to utilize full capture systems to reduce trash discharged from their MS4 shall:~~

~~– Delineate the associated land area treated by the full capture system;~~

~~– Develop and annually update a list of all full trashtrash full capture devices installed within their jurisdiction, including the type and location of the devices; and~~

~~– Conduct or cause to be conducted on-going training to appropriate maintenance staff on inspecting and cleaning full trashtrash full capture systems.~~

~~iii.~~

~~iv. Storm drain inlet type full trashtrash full capture devices in Low or Medium trash generation areas shall be maintained a minimum of once per year.~~

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

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

~~vii. If any such device isIf a Permittee observes that a system is not performing at a level consistent with this definition, Permittees shall adjust their operation and maintenance program accordingly in a timely manner.~~

~~i.~~

Permittees shall maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of their full capture systems, including the mapped location and drainage area served by each system or group of

**Comment [A11]:** Revisions are consistent with discussions at February 24<sup>th</sup> workgroup meeting and March 5 Steering Committee meeting.

<sup>3</sup> San Francisco Estuary Partnership. 2014. Bay Area-wide Trash Capture Demonstration Project. Final Project Report. May 8, 2014.

~~systems; and found plugged or full of trash when maintained, the maintenance frequency shall be doubled at a minimum, and subsequently adjusted so that it is maintained frequently enough that it neither plugs nor is full before being maintained. Permittees shall map and document the catchment area controlled by full trash full capture devices.~~

~~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 adversely affecting the performance of the system. Other information obtainable from the trash captured, such as brand name litter pointing to a particular source, leading to source control efforts, should be noted.~~

~~Permittees shall annually certify document report annually that each of their full trash full capture systems is are operated and maintained to at a level consistent with the definition of meet full trash full capture system requirements, and report on any modifications to their operation and maintenance program. Drainage areas served by a full trash full capture system or group of systems will be considered equivalent to or better than a Low trash generation area. DA-Trash generation from a drainage areas served by a trash full capture full capture system or group of systems will be considered equivalent to or better than a Low trash generation area.~~

~~viii.i. **Non-Full Trash Full Other Trash Capture System Management Actions -**~~

~~Permittees shall maintain, and provide for inspection and review upon request, documentation of trash control management actions other than full capture systems that verifies the implementation of, each action and demonstrates the effectiveness of each action or combination of actions consistent with the provisions below. Permittees shall also conduct assessments of the action that verifies the 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 other trash control management 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 including mapped location(s), trash generation and drainage management area(s) affected, tracking and enforcement procedures if applicable, and other information relevant to the effective implementation of the action or combination of actions.~~

~~a.~~

~~b. **Assessment** - To verify the effectiveness of a trash control action or combination of actions, Permittees shall either: 1) conduct visual on-land assessments,~~

including photo documentation, in very high, high and moderate trash generation areas within which ~~it is~~they are implementing or causing to be implemented other trash management a non-full capture system trash control actions not included in C.10.b.i; or 2) apply the results of a control measure-specific performance evaluations that provides reasonable assurance that the applicable control action or combination of actions achieve a specified level of trash reduction.

**Comment [A12]:** Option is consistent with discussions at February 24<sup>th</sup> workgroup meeting and March 5 Steering Committee meeting.

~~to determine or verify the effectiveness of the action or combination of actions. Permittees may assess and account for one or more trash generation management areas in a single trash management area within which a control action or combination of control actions is or will be implemented.~~ The visual on-land assessment method used shall meet or exceed the following criteria:

1. Conduct observations ~~within a trash management area~~ of the sidewalk, and street curb, and gutter within a trash management area, and comparing the results of the observations ~~with to~~ a visual reference of trash and litter condition, as in the calibration example in **Attachment XX** (On-land Assessment Calibration Photos). Low trash generation corresponds to the A photos, Moderate trash generation to the B photos, High trash generation to the C photos, and Very High trash generation to the D photos.

- ~~2.~~ Conduct observations as described above at randomly selected locations covering at least ~~105%~~ of the curb miles in a trash management area ~~s street miles;~~ or conduct observations described above at strategic locations ~~with justification they that~~ are representative of trash generation ~~in the a management area and they will that represent~~ the effectiveness of the control action(s) implemented or planned ~~in the management area.~~

**Comment [A13]:** Permittees are very concerned with regard to the resources that would be needed to comply with this provision. Frequent and/or large scale assessments are very costly and divert resources away from management actions. Prioritization of this requirement among the implementation of actions in this and other provisions is needed.

- ~~2.~~
- ~~3.~~ 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.

- ~~4.~~
- ~~3.~~
- ~~4.~~ Conduct observations ~~for effectiveness approximately at the halfway point of the an~~ interval between instances of recurring trash control actions such as street sweeping and on-land cleanup that adequately characterize the effectiveness of these control actions (e.g., half-way between actions).

**Comment [A14]:** Changed to curb miles (1/2 of street miles) and reduced the % accordingly.

Permittees choosing to apply the results of a control measure-specific performance evaluation to demonstrate with reasonable assurance that a control action or combination of actions achieve a specified level of trash reduction, shall submit information with their annual report describing the results and conclusions

of the evaluation, including an analysis of the data collected or evaluated and a clear description of the applicable control action or combination of actions.

**iii. Trash Reduction Calculation Formula** - Permittees shall demonstrate the C.10.a.i percent reductions by the reduction of trash discharged from Very High, High, and Moderate trash generation areas illustrated on trash generation maps using the following formula:

$$\% \text{ Reduction} = 100 * \left( 1 - \frac{12 \cdot A_{VH,c} + 4 \cdot A_{H,c} + A_{M,c}}{12 \cdot A_{VH,i(2009)} + 4 \cdot A_{H,i(2009)} + A_{M,i(2009)}} \right)$$

where:

- i = as illustrated on trash generation maps submitted with long-term plans or updated and resubmitted with 2016 annual reports
- c = as determined/observed in the year(s) of interest
- A = jurisdictional area within a specific trash generation category
- VH = very high trash generation category
- H = high trash generation category
- M = moderate trash generation category
- L = low trash generation category

Permittees that have implemented curb inlet screen partial capture devices, street sweeping programs that remove trash to the street curb at a frequency of at least 1x per week, conducted on-land cleanups on a weekly frequency, or equivalent measures within a very high, high or moderate generation area but have not observed a reduction to the next lower trash and litter generation category via on-land assessments, may account for a partial percent reduction towards the C.10.a.i milestone. A total reduction equal to one-half of the percent reduction associated with observing changes to the next lower generation category in the area applicable to the trash reduction action shall be granted to the Permittee and the percent reduction associated with this calculation shall be incorporated into the trash reduction calculation formula above.

In addition to the percent reductions demonstrated by using the formula above, Permittees that implement source control actions designed to eliminate the generation of litter prone items in the environment that can cause adverse impacts to receiving waters may account for up to 20% of their trash reductions described in C.10.a.i given that Permittees demonstrate through the collection of information applicable to these actions that a trash reduction has occurred as a result of this action(s).

**Comment [A15]:** Created new section specific to the formula that follows the full capture and non-full capture system sections.

**Comment [A16]:** Need to add description of the trash weighting factors and relationship to generation rates in the fact sheet.

**Comment [A17]:** Revised formula to be consistent with accounting for progress towards low trash generation, agreed upon with Water Board staff.

**Comment [A18]:** This section was added to address the issue of not observing changes in generation categories via assessments, but implementing significant actions. Save the Bay suggested that a similar section be added.

**Comment [A19]:** This section was added in an attempt to allow for reductions associated with source control actions (e.g., bag bans). Consistent with comments/issues discussed at February 24<sup>th</sup> workgroup meeting and March 5 Steering Committee meeting.

Offset for Trash Impacts from MS4s - Permittees may account for the cleanup of trash in receiving waters towards compliance with C.10.a.i trash discharge percentage-reduction requirements given that the Permittee can demonstrate that it has implemented a robust program designed to effectively prevent the discharge of trash directly to receiving waters. Percentage reductions associated with these activities shall be based upon the volume of trash removed from receiving waters during a given year. Permittees shall receive a 1% reduction, with a maximum of 10%, in comparison to 2009 trash generation and at a 3:1 offset for trash removed from receiving waters. Trash reduction offsets for receiving waters cleanups shall be equal to:

iv.

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

where:

$i$  = as illustrated on trash generation maps submitted with long-term plans or updated and resubmitted with 2016 annual reports

$A$  = jurisdictional area within a specific trash generation category

$VH$  = very high trash generation category

$H$  = high trash generation category

$M$  = moderate trash generation category

$OF$  = offset factor equal to  $(7.5 \times 0.01 \times 3)$ , where: 7.5 equals the conversion from acres to gallons based on trash generation rates; 0.01 equals 1%; and 3 equals the 3:1 offset.

If a Permittee chooses to account for a higher percentage reduction than 10%, the Permittee, as part of updates to their Long-Term Trash Reduction Plan and described in their annual report, shall provide a detailed description of ongoing control actions that the Permittee will implement to control trash discharges directly to receiving waters, time schedules to implement these actions, and enhanced monitoring/assessments that will be conducted. The Permittee shall account for the trash percentage reduction associated with these control actions towards compliance with C.10.a.i percentage reduction milestones.

Annually, Permittees shall document and report the date of each event, the volume of trash removed from each event, and that make available photo documentation that the site was cleaned to a level of no adverse impacts is available for inspection and review upon request.

**Comment [A20]:** Consistent with comments/issues discussed at February 24<sup>th</sup> workgroup meeting and March 5 Steering Committee meeting, this section was added to address the need for some communities to focus more heavily on important trash sources other than the MS4 and obtain credit towards reduction milestones. We created a formula that allows a 3:1 reduction for trash removed from receiving waters in comparison to the baseline 2009 levels. Additionally, there is a maximum % reduction that can be claimed without submitting a plan specific to cleanup and prevention of direct discharges from non-MS4 sources. We envision that only a handful of Permittees (e.g., SJ and Oakland) will submit a plan. The remainder will need to submit documentation on an annual basis that they have removed trash at specific levels equivalent to % reductions using the formula. The only use of volume/gallons is to document the extent and magnitude of trash removed from the creek/shoreline. A table illustrating the volumes that Permittees would need to remove annually to achieve each 1% reduction can be provided upon request to better understand level of implementation that would be required to achieve a specific % reduction for these actions.

**Comment [A21]:** Moved to reporting section

~~iii. **Receiving Water Observations** –Permittees shall conduct receiving water observations at strategic locations on a Permittee or watershed scale to evaluate the level of trash present in receiving waters overtime, and to the extent possible determine 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). Receiving water observation locations should be downstream of jurisdictional areas that have been converted from Very High, High, or Moderate. Observations to Low trash generation. 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, orThe observations shall be conducted a minimum of twice per year until the C.10.b.ii.c.(1) determination has been observed and then confirmed with a subsequent observation, after which the frequency may be reduced to once per year.during the term of the permit. A-C.10.c Trash Hot Spot cleanup sites downstream of a trash management area may serve as a receiving water observation site.~~

**Comment [A22]:** Language was edited consistent with comments/issues discussed at February 24<sup>th</sup> workgroup meeting and March 5 Steering Committee meeting. Receiving water observations are intended to identify ongoing issues.

Draft

### 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 as mitigation and to learn more about the sources and transport routes of trash loading.

- i. **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 at least 100 yards of creek length or 200 yards of shoreline length.
- ii. **Hot Spot Selection** – Permittees shall maintain the number of trash hot spots identified in the previous permit term, which are included in Attachment XX. Permittees may select new trash hot spot locations if past locations are no longer trash hotspots or if other locations may better align with trash management areas.
- iii. **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 hotspot.

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

Each Permittee shall maintain, and provide for inspection and review upon request, their Long-Term 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 Reports. 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

~~(2) The Plans should also 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). Permittee's that 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.~~

Comment [A23]: Remove d consistent with discussions with Water Board staff.

### ~~C.10.e.~~ C.10.e. Reporting

Each Permittee shall provide the following ~~in eaviah~~ Annual Reports:

- i. Annually provide 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. ~~Provide~~ updated Trash Generation Area map or maps and associated trash management areas ~~in 2016, 2017 and 2019 Annual Reports. In 2017 and 2019, including include the~~ locations and associated drainage areas of ~~full capture~~ systems and ~~other trash control management~~ actions, and the location of Trash Hot Spots, with highlight or other indication of any revisions or changes from the previous ~~year~~ map(s).

Comment [A24]: Remove annual requirement. 2017 only.

ii.

iii. ~~Certification Documentation~~ Annually document ~~if that~~ each of its ~~full trash~~ ~~trash full capture~~ ~~full capture~~ systems is operated and maintained to meet ~~full trash~~ ~~trash full capture~~ ~~full capture~~ system requirements, ~~and describe any systems that did not meet full trash~~ ~~trash full capture~~ ~~full capture~~ system requirements, for example due to plugging or overflowing, and corrective actions taken. ~~In annual reports, Permittees shall~~ Additionally, ~~provide~~ a summary of ~~their~~ its operation and maintenance program, including reference to any publically-owned full capture systems that exhibited a plugged or overflowing condition upon maintenance, and reference ~~to their operation and maintenance verification program per C.3.h for privately-owned~~ systems.

Comment [A25]: Review for clarity

iii.

iv. Annually ~~provide~~ a summary description of ~~the number and frequency of visual on-land assessments conducted in very high, high and moderate trash generation areas for each trash management areas within which they are implementing or causing to be implemented other trash reduction actions. Provide the results of any control measure-specific performance evaluations that provide reasonable assurance that the applicable control action or combination or actions achieve a specified level of trash reduction.~~

v. Annually document actions designed to eliminate the generation of litter prone items in the environment that can cause adverse impacts to receiving waters, including descriptions of all information and metrics used to demonstrate that these actions have effectively ~~reduced~~ trash discharges from the MS4.

Comment [A26]: Added reporting requirement consistent with new language in C.10.b.iii

vi. Annually document receiving water cleanup activities, including the date of each cleanup event and the volume of trash removed from each event, and descriptions of programs designed to effectively manage the discharge of trash directly to receiving ~~waters~~. As applicable, provide a summary of the ~~trash reduction offset program~~, including actions implemented during the fiscal year. Document and report the date of each cleanup event, the volume of trash removed from each event, and make available for review and inspection upon request photo documentation that the site was cleaned to a level of no adverse impacts.

Comment [A27]: Added reporting requirement consistent with new language in C.10.b.iv

iv-vii. In 2017 Annual Report, provide an accounting of progress toward or attainment of the C.10.a.i trash discharge reduction milestone using the C.10.ba.iii trash generation area mapping methodology, and ~~reduction calculation methods described in C.10.b~~. If a Permittee cannot demonstrate attainment of a required milestone, it shall submit a detailed plan with the Annual Report, or in advance of the Annual Report, that describes actions to comply with the required milestone in a timely manner. The plan shall consider additional ~~full capture~~ systems to attain the ~~milestone~~.

Comment [A28]: Only 2017 and 2019.

- | ~~v.~~viii. Annually report on C.10.b.iii-y receiving water observations, including the locations and times of observations and associated determinations.
- | ~~vi.~~ix. 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.

Draft

**March 26, 2015**

**BASMAA PHASE I MANAGER COMMENTS ON PROVISIONS C.11 AND C.12 OF THE  
MRP 2.0 ADMINISTRATIVE DRAFT**

BASMAA Phase I manager comments are provided below on Provisions C.11 and C.12 of the MRP 2.0 Administrative Draft. Appendix A contains a memorandum that proposes an “interim accounting scheme” for MRP 2.0. Appendix B contains a second memorandum concerning provision C.12.f of the MRP 2.0 Administrative Draft, which requires development of a program to manage PCBs in building materials during demolition/renovation.

Please note that these comments and appendices have not been vetted by MRP Permittees and are provided solely to assist the Regional Water Board’s consideration of and potential reaction to concepts or language it may, in its discretion, elect to advance relative to the reissuance of the Municipal Regional Permit for stormwater discharges (MRP). It is not intended and should not be misconstrued as an offer to take on, or volunteer for, any potential permit requirement that represents a new program or higher level of service relative to the MRP or its predecessor permits.

**Provision C.11 – Mercury Controls**

- Provisions C.11.a – d in the Administrative Draft are “piggybacked” on C.12.a – d, so comments on those provisions for C.12 (PCBs Controls) also generally apply to C.11 (Mercury Controls).
- The introductory section should include the following language that was included in MRP 1.0: "If the interim loading milestone is not achieved, the Permittees shall demonstrate reasonable and demonstrable progress toward achieving the milestone."

**Provision C.12 – PCBs Controls**

**Fact Sheet**

- Given the uncertainty and variability in the inputs and outputs of the simple modeling used in the current TMDL framework, there is currently little certainty that feasible human interventions to reduce urban runoff PCB inputs could accelerate the Bay’s recovery with respect to PCBs. The TMDL needs to be updated to better reflect 1) the questionable feasibility of meeting the urban runoff allocation and 2) the uncertainties in the allocation related to a number of factors (e.g., food web and pollutant fate modeling, fish consumption rate and target species, dose-response). The MRP 2.0 Fact Sheet should state that the RMP PCBs Synthesis establishes a foundation for a more realistic framework for conceptual and quantitative modeling of PCB fate in the Bay that includes greater focus on the Bay margins. As such, the Fact Sheet should state that the regulated community, Regional Water Board (RWB) staff and the scientific community (e.g., RMP) should continue to work together to develop as soon as possible: 1) appropriate tools and monitoring strategies in support of this modeling approach to inform future planning of how and where to focus efforts to reduce PCB loads in urban runoff, and 2) a clear plan and timeframe for updating the Bay PCBs TMDL.
- Discuss differences compared to the southern California TMDL approaches.
- Discuss how certain Bay margin on-land sites outside of Phase I MS4 jurisdiction will be addressed via the TMDL (e.g., airports, ports) including recognizing that addressing these sites

**March 26, 2015**

should result in load reductions that count towards meeting the urban runoff wasteload allocation.

- Include context and tie-in to the PCBs TMDL in relation to Provision C.12.d (Permittees shall prepare a plan and schedule for PCBs control measure implementation and provide reasonable assurance that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations).
- The fact sheet would be the most suitable location for the type of information in the “interim accounting scheme” described below and in Appendix A.

### **General**

- It appears that the level of effort and resources required to implement Provisions C.11/12 of the administrative draft could be dramatically higher than implementing MRP 1.0 Provisions C.11/12. Much of the cost of implementing MRP 1.0 Provisions C.11/12 was offset by a grant from USEPA that will end in 2016. The availability of grant or other funding for implementing MRP 2.0 Provisions C.11/12 is uncertain.
- The introductory language should be revised to reference the PCBs TMDL in a similar fashion to how the mercury TMDL is referenced in the introductory language of Provision C.11 of the administrative draft.
- In general, the compliance timelines presented in the various sections of C.12 are too short (in particular C.12.f) and not fully coordinated internally and externally with Provision C.3 and the PCBs TMDL. BASMAA will work with RWB staff to develop realistic compliance timelines once the overall framework and requirements are established with greater certainty.
- Three PCBs load reduction programs are discussed below: Source Property Identification and Abatement, Green Infrastructure/Treatment Controls, and Management of PCBs-Containing Building Materials during Demolition. However, there remains a number of very challenging issues related to the third program: Management of PCBs-Containing Building Materials during Demolition. The best approach would be to work with the State, USEPA, the building industry, and other stakeholders to develop a comprehensive statewide program analogous to current programs for asbestos and lead paint. Implementing a program at the local level would likely be highly inefficient. In addition, defining EPA’s role in any such program is particularly important.

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

- We understand that the intent of the administrative draft is to require Permittees to demonstrate a total cumulative Bay Area-wide PCBs load reduction of 3 kg/year over the permit term. Based on a BASMAA analysis previously submitted to RWB staff, it is unlikely that meeting a 3 kg/year load reduction performance metric would be feasible. The 3 kg/year load reduction performance metric should be omitted or at a minimum replaced by a new number informed by and consistent with an agreed upon accounting scheme.
- The PCBs load reduction performance metric, if included in the permit, should be in the form of an action level. RWB staff has acknowledged that load reduction performance metrics are not effluent limits. Further clarity is needed regarding their legal definition and implications with regard to enforcement and potential third party lawsuits.

**March 26, 2015**

- Either omit load reduction performance metrics or include contingency language that would allow for achieving compliance with the permit while not meeting the load reduction performance metrics despite solid efforts and actions by Permittees.
- Any interim PCBs load reduction compliance milestones should be omitted. Although Permittees will continue existing efforts to develop and implement additional controls, it will take time for new control programs to ramp up. Furthermore, interim milestones would divert resources away from PCBs control measure implementation towards compliance reporting.
- BASMAA and RWB staff are currently working together to attempt to develop an “interim accounting scheme” applicable to MRP 2.0 that would provide *a priori* load reduction benefits for various PCBs control programs that could plausibly be implemented during the permit term. The associated permit language should provide details (e.g., schedules and milestones) of plausible PCBs control programs and state that the control programs are designed to achieve the load reductions in the permit based on the interim accounting scheme. The scheme would be detailed in the fact sheet of the reissued permit and thus agreed upon before the permit is adopted. This framework would provide Permittees with a clear and feasible pathway to attaining compliance.
- The accounting scheme should account for three PCB load reduction programs to be implemented by the Permittees during the permit term: Source Property Identification and Abatement, Green Infrastructure/Treatment Controls, and Management of PCBs-Containing Building Materials during Demolition. The Green Infrastructure/Treatment Controls program should include accounting for redeveloped private and public parcels, with credit for reduced PCBs loadings due to land use changes, abatement, and C.3-required treatment.

**C.12.b – Assess PCB Load Reductions from Stormwater**

- Given that we anticipate including in MRP 2.0 an “interim accounting scheme” (see Appendix A), C.12.b is no longer needed and should be omitted.

**C.12.c – Plan and Implement Green Infrastructure to reduce PCB Loads**

- The provision should not include performance metrics for PCBs load reductions through implementation of Green Infrastructure (GI) over the MRP 2.0 permit term. PCBs load reductions will not be the driver for GI implementation during MRP 2.0. RWB staff has noted that based on extrapolation of MRP 1.0 data, the proposed metrics should be met via redevelopment in old industrial areas. Thus the proposed metrics would not influence GI implementation during MRP 2.0 and meeting them would instead be dependent upon an activity that is not under Permittee’s control. While we expect to learn valuable lessons via opportunistic early implementation of GI retrofit projects through Provision C.3.j.ii, the pollutant load reductions associated with these retrofits implemented over MRP 2.0 is anticipated to be relatively small.

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

- The due date for this plan should be coordinated with any update of the PCBs TMDL, so that a TMDL update would not render the plan obsolete.
- As mentioned above, the fact sheet should include context and tie-in to the PCBs TMDL in relation to Provision C.12.d.

**March 26, 2015**

- Preparation of the Implementation Plan would likely include revising the “interim accounting scheme” (see Appendix A) based on lessons learned over the permit term and other available information.

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

- No comments

**C.12.f – Manage PCB-Containing Materials and Wastes during Building Demolition and Renovation Activities**

- Provision C.12.f requires development of a program to manage PCBs in building materials during demolition/renovation. Given the large standing stock of PCBs known to be present in certain buildings in the Bay Area, there may potentially be significant benefits to implementing the proposed control program. However, data are sparse regarding the amount of PCBs-containing materials that are released to the ground during demolition/renovation and then mobilized by urban runoff, making it challenging to project with any certainty the actual benefit of the proposed control program. Cost-effectiveness relative to other PCBs controls is also highly uncertain at this time. However, based on available information, Regional Water Board (RWB) staff believes that implementing this program would be beneficial.
- The best approach would be to work with the State, USEPA, the building industry, and other stakeholders to develop a comprehensive statewide program analogous to current programs for asbestos and lead paint. Implementing a program at the local level would likely be highly inefficient.
- There remains a number of very challenging issues in relation to this provision. Please see the separate memorandum in Appendix B for more information regarding this topic.

**C.12.g – Fate and Transport Study of PCBs: Urban Runoff Impact on SF Bay Margins**

- No comments

**C.12.i – Implement a Risk Reduction Program**

- No comments

# APPENDIX A

## Memorandum

Date: 26 March 2015  
To: BASMAA Representatives Concerned with MRP PCBs Requirements  
From: BASMAA PCB Workgroup  
Subject: PCBs Load Reduction Interim Accounting Scheme for MRP 2.0

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### 1. BACKGROUND

The MRP 2.0 Administrative Draft includes a provision (C.12.a) that requires Permittees to demonstrate cumulative Bay Area-wide PCBs load reductions over the permit term. Provision C.12.b of the Administrative Draft requires the Permittees to develop and implement an assessment methodology and data collection program to quantify PCB loads reduced.

As part of refining these draft requirements, BASMAA and Regional Water Board (RWB) staff have been discussing the development of an “interim accounting scheme” that would provide *a priori* load reduction benefits for the PCBs control programs that could plausibly be implemented during the MRP 2.0 permit term. The associated permit language would provide details (e.g., milestones and schedules) of plausible PCBs control programs and state that the control programs are designed to achieve the load reductions in the permit based on the interim accounting scheme. The scheme would be detailed in the reissued permit and thus agreed upon before the permit is adopted, providing Permittees with a clear and feasible pathway to attaining compliance.

The objective of this memorandum is to propose an interim accounting scheme for MRP 2.0. The permit’s fact sheet would be the most suitable location for this type of information.

Please note that these materials are submitted by BASMAA Phase I managers. They have not been vetted by MRP Permittees and are provided solely to assist the Regional Water Board’s consideration of and potential reaction to concepts or language it may, in its discretion, elect to advance relative to the reissuance of the Municipal Regional Permit for stormwater discharges (MRP). It is not intended and should not be misconstrued as an offer to take on, or volunteer for, any potential permit requirement that represents a new program or higher level of service relative to the MRP or its predecessor permits.

## **2. FRAMEWORK**

The bullet points below provide the framework for the proposed interim accounting scheme:

- The goal of the interim accounting scheme is to allow for a clear path to compliance during the MRP 2.0 permit term.
- The accounting scheme should be simple to implement (e.g., clear load reductions for specific activities that are determined before the permit is adopted).
- The accounting scheme should be based on our current knowledge of relative PCB yields from different land uses outlined in the Integrated Monitoring Report (IMR) Parts B and C in combination with assumed load reduction effectiveness for specified control measures.
- The land use-based yields calculated for the IMR must be multiplied by two to normalize to the assumed TMDL baseline load of 20 kg/yr. Therefore, the assumed average land use-based yields are:
  - Old Industrial (Potential High Opportunity) = 100 mg/ac/yr
  - Old Urban (Moderate Opportunity) = 35 mg/ac/yr
  - New Urban/Other (Low/No Opportunity) = 4 mg/ac/yr
- Source areas/properties identified through source property screening have a higher yield than the average Old Industrial yield. Based on an analysis for the ESPS Watershed, the source properties that were identified through preliminary screening would yield approximately 4,000 mg/ac/yr.
- Three major programs will be implemented by the Permittees: Source Property Identification and Abatement, Green Infrastructure/Treatment Controls, and Management of PCB-Containing Building Materials during Demolition.
- A refined accounting method will be developed as part of the Implementation Plan and Schedule (C.12.d).

### Source Property Identification and Abatement Interim Accounting Scheme

- Assume that source area properties that are referred to the Regional Water Board will reduce the PCB contributions from the source property by a level equivalent to the difference between the Source Property land use yield and the Old Urban land use yield (i.e., 4,000 mg/ac/yr → 35 mg/ac/yr or a reduction of 3,965 mg/yr of acres referred).
- For purposes of the load reduction estimate, assume streets and/or storm drain

## PCBs Load Reduction Interim Accounting Scheme

26 March 2015

Page 3

infrastructure adjacent to source properties will be assessed for and would receive, where appropriate, one or a combination of interim enhanced O&M measures (e.g., sediment erosion control, street sweeping, drain inlet cleaning, pump station cleaning, street flushing, and/or storm drain cleanout) during the ongoing abatement process.

### Green Infrastructure (GI)/ Treatment Measures Interim Accounting Scheme

- Reduce the land use-based yield from the treated area by an efficiency factor (e.g., 70% reduction in PCB yield per acre treated).

### PCBs in Building Materials/Demolition Interim Accounting Scheme

- (Mass of PCBs in each regulated building) x (# of regulated buildings demolished in Bay Area per year) x (portion of mass in buildings that enters MS4 during demolition without controls) x (effectiveness of control BMPs during demolition).

## 3. PCB CONTROL PROGRAMS

Three PCB load reduction programs will be implemented by the Permittees during the permit term: Source Property Identification and Abatement, Green Infrastructure/Treatment Controls, and Management of PCB-Containing Building Materials during Demolition. The following sections describe each of these programs; provide a summary of the IMR analyses and conclusions; and recommend the load reduction accounting method, Permittee tracking activities, and steps to improve certainty for each program.

### 3.1 Control Measure: Source Property Identification and Abatement

**Description of reduction action.** Source property identification and abatement involves investigations of properties located in historically industrial land use areas where PCBs were used, released, and/or disposed of, and/or where sediment concentrations are elevated above urban background levels in order to identify potential source properties for referral to the Regional Water Board, or other authority, for clean-up and abatement in collaboration with the Permittee. In addition, special categories of source properties will need to be addressed, including Phase 2 permittees, Caltrans, railroads, military, PGE, individual NPDES permittees (e.g., refineries).

**Summary of IMR analysis and conclusions.** Pilot-scale source property investigations were conducted in five high priority watersheds under MRP 1.0. Key outcomes of these pilot studies are presented below:

- More than 100 property inspections were conducted in the five pilot watersheds as part of these investigations.

## PCBs Load Reduction Interim Accounting Scheme

26 March 2015

Page 4

- The ranges of soil/sediment concentrations of PCBs in public right-of-way areas adjacent to potential source properties within each watershed were:
  - Leo Avenue Watershed (San Jose, CA): 0.012-7.1 mg/Kg
  - Pulgas Creek Pump Station Watershed (San Carlos, CA): 0.017-2.5 mg/Kg
  - Ettie Street Pump Station Watershed (Oakland, CA): 0.027-5.7 mg/Kg
  - Lauritzen/Parr Channel Watersheds (Richmond, CA): 0.043-1.5 mg/kg
- Soil/sediment PCB concentrations >0.2 mg/Kg were considered above urban background.
- A number of potential source properties have been identified to date, and more are expected.
- Property referrals to Regional Water Board will be made, pending final pilot study data analysis and reporting.

**Recommended reduction metric for MRP 2.0.** Use the land use-based yields and area referred to populate the following equation:

$$\text{Annual Mass of PCB Reduced} = SP_A \cdot (SP_Y - OU_Y)$$

Where:  $SP_A$  = Source Property area referred for abatement (acres)  
 $SP_Y$  = Source Property PCB yield (mg/acre-year) (Default 4,000 mg/acre/yr)  
 $OU_Y$  = Old Urban Land Use PCB yield (i.e., 35 mg/acre-year)

### **Recommended activity tracking during MRP 2.0.**

- Location of Source Property.
- Source property other critical information.
- Total area of source property.
- Referral form.
- Date of referral and agency to which the property was referred.
- Interim abatement/source controls pending final abatement (i.e., enhanced O&M).

**Recommended steps to improve certainty.** Use monitoring data, as available, to improve yield assumptions and/or refined reduction metrics.

### **References**

- IMR Part B, pp. 52-108.

### 3.2 Control Measure: Green Infrastructure (GI)/ Treatment Measures

**Description of reduction action.** Stormwater treatment measures and green infrastructure (GI) which incorporates low impact development (LID) techniques, designed to remove PCBs and other sediment-bound pollutants include, for example, bioretention facilities, vegetated swales, detention basins, green roofs, media filters, porous pavement, and hydrodynamic separators. These include projects implemented during redevelopment, generally on private properties, and retrofits of existing infrastructure in public right-of-way areas and on public properties. Diverting urban runoff to the sanitary sewer for treatment may reduce urban runoff PCB loads and improve receiving water quality if targeted in areas with elevated PCB concentrations, so has been included in this program. Potential types of diversions include: low flow (gravity) diversions; high flow (pumped) diversions; dry or wet weather only diversions; and diversions with a set upper flow limit.

**Summary of IMR analysis and conclusions.** Five pilot urban runoff diversion projects implemented in Bay Area counties are currently evaluating the feasibility, load reduction benefits, and costs associated with urban runoff diversions. Pending results from these studies, estimates of load reductions for diversions were based on available literature and local stormwater concentration data. The key findings include:

- Stormwater PCB concentrations in the Bay Area are typically < 100 ng/L, even in areas with known high PCB concentrations, such as Ettie Street Pump Station.
- At relatively low PCB concentrations (< 50 ng/L), even high flow diversions of 10,000,000 gallons/year divert a small mass of PCBs annually (~0.4 g PCBs).
- To reduce PCBs by 1 g /year, 3,000,000 gallons with PCB concentrations  $\geq$  100 ng/L must be diverted.
- Results to date indicate diversions are not cost-effective except potentially in areas with very high PCB concentrations.
- There are limited locations in the Bay Area where cost-effective urban runoff diversions are feasible, primarily due to flow limitations, potential costs imposed by sanitary sewer, and other institutional barriers.

Twenty stormwater treatment pilot projects were implemented in the Bay Area to varying degrees of completion under MRP 1.0. A spreadsheet model was used to predict mean annual estimates of PCB loads reduced from these projects. Key outcomes are presented here:

- Ten post-development GI projects were constructed, with modeled average annual load reductions ranging from 0.002 g to 0.31 g PCBs per project, and total annual load reduction for all projects of 1.08 g PCBs.

## PCBs Load Reduction Interim Accounting Scheme

26 March 2015

Page 6

- Ten stormwater treatment retrofit projects were constructed, with modeled average annual load reductions ranging from 0 g to 0.27 g PCBs per project, and total annual load reduction for all projects of 0.85 g PCBs.
- Load reductions were highest for green roofs, followed by bioswales, bioretention, media filter, porous pavement, and detention basin. The latter measures were 34% to 68% as effective as green roofs.
- Analysis of 170 stormwater treatment projects in old industrial areas (reported in municipal Annual Reports) found the average annual PCB load reduction was 0.11 g PCB per acre treated.
- Major challenges for constructing stormwater treatment projects within an existing transportation corridor include conflicts with existing infrastructure and other utilities (electrical/gas/water) in public ROW
- Adequate funding, opportunity for integration into other planned projects, and community support are all critical to the success of these types of projects.

**Recommended reduction metric for MRP 2.0.** Use the land use based yields and efficiency factors for the stormwater treatment measure to populate the following equation:

$$\text{Annual Mass of PCB Reduced} = P_A \cdot P_Y \cdot E_f$$

Where:  $P_A$  = Property area treated by stormwater treatment measure (acres)  
 $P_Y$  = PCB yield (mg/acre-year) of the property area treated based on land use yield  
 $E_f$  = Efficiency factors for GI/stormwater treatment control measure

### **Recommended activity tracking during MRP 2.0.**

- Location and type of green infrastructure/stormwater treatment/diversion measure.
- Property area(s) treated in acres.
- Date of implementation.
- Land use designation(s) and acres associated with each land use designation(s) within the treatment area(s).
- Land use based yields for the treatment area.
- Assumed efficiency factors for each stormwater treatment type or diversion to sanitary sewer per agreed upon guidance.

**Recommended steps to improve certainty.** Use monitoring data, as available, to improve yield assumptions and/or refined reduction metrics.

**References.**

- IMR Part B, pp. 173-196.
- Geosyntec Consultants, Inc., Wright Water Engineers, Inc., 2012:. International Stormwater Best Management Practices (treatment measure): Database Pollutant Category Summary Statistical Addendum: TSS, Bacteria, Nutrients, and Metals;
- Geosyntec Consultants, Inc., Wright Water Engineers, Inc., 2012c. International Stormwater Best Management Practices (BMP) Database Addendum 1 to Volume Reduction Technical Summary (January 2011) Expanded Analysis of Volume Reduction in Bioretention BMPs.

**3.3 Control Measure: Management of PCBs in Building Materials during Demolition**

**Description of reduction action.** Development of a program to manage PCBs in building materials during demolition. Given the large standing stock of PCBs known to be present in certain buildings in the Bay Area, there are potentially significant benefits to implementing this type of program. However, data are sparse regarding the amount of PCBs-containing materials that are released to the ground during demolition and then mobilized by urban runoff, making it challenging to project with any certainty the actual benefit of the proposed control program. Cost-effectiveness relative to other PCBs controls is also uncertain at this time. However, based on available information, Regional Water Board (RWB) staff believes that implementing this type of program would be beneficial. To facilitate implementation of this new program, the proposed scope would be initially limited to the following “Regulated Buildings”:

- Land Use: Residential excluded.
- Age: Only those buildings constructed from 1950 through 1980.
- Type: Concrete and masonry buildings only.
- Size: Demolitions of whole buildings with a minimum floor area of \_\_\_\_\_. Interior demolitions excluded.

**Summary of IMR analysis and conclusions.**

- Summary of SFEI study to estimate standing stock of PCBs in Bay Area buildings and loads to MS4s during demolition/renovation
- Summary of SFEP PCBs in Caulk Project: BMPs and planning
- Estimates of loads avoided/reduced. Uses similar methods to below except that calculations are on a per building basis and C is not included.

**Recommended reduction metric for MRP 2.0 = Annual PCBs Mass Loading to MS4 Avoided by Program (grams/year).** Calculate using the following equation:

$$\text{Annual PCBs Mass Loading to MS4 Avoided by Program (grams/year)} = A \times B \times C \times D$$

Where:

- A = average mass of PCBs in each Regulated Building (grams)
- B = average number of Regulated Buildings demolished per year in MRP footprint area (number/year)
- C = average fraction of PCBs mass in Regulated Buildings that enters MS4 during demolition without controls (this accounts for onsite storage after demolition and gradual partial mobilization into MS4) (dimensionless fraction)
- D = average effectiveness of controls at preventing PCBs from entering MS4 (dimensionless fraction)

**Recommended activity tracking during MRP 2.0**

- Demolition site characteristics
  - Location
  - Dates of demolition project
  - Land use
- Building characteristics
  - Type (e.g., concrete tilt-up, masonry)
  - Size - floor area (square feet)
  - Date constructed

**Recommended steps to improve certainty.** In addition to collecting site-specific data per the previous section, perform an evaluation of compiled monitoring data to reduce uncertainty in loads and load reductions.

**References**

- IMR Part B

\* \* \* \* \*



## APPENDIX B

**Eisenberg, Olivieri & Associates**  
Environmental and Public Health Engineering

## **TECHNICAL MEMORANDUM**

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**TO:** BASMAA Representatives Concerned with MRP PCBs Requirements

**FROM:** Peter Schultze-Allen and Jon Konnan, EOA Inc.

**DATE:** March 26, 2015

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The MRP 2.0 Administrative Draft includes a provision (C.12.f) that requires development of a program to manage PCBs in building materials during demolition/renovation. Given the large standing stock of PCBs known to be present in certain buildings in the Bay Area, there may potentially be significant benefits to implementing the proposed control program. However, data are sparse regarding the amount of PCBs-containing materials that are released to the ground during demolition/renovation and then mobilized by urban runoff, making it challenging to project with any certainty the actual benefit of the proposed control program. Cost-effectiveness relative to other PCBs controls is also highly uncertain at this time. However, based on available information, Regional Water Board (RWB) staff believes that implementing this program would be beneficial.

The objective of this memorandum is to summarize the following:

1. MRP 2.0 Administrative Draft requirements requiring management of PCBs in building materials during demolition/renovation (Provision C.12.f)
2. BASMAA's issues and questions regarding the Administrative Draft approach to provision C.12.f
3. Options for moving forward

Please note that resolving some of the very challenging issues described in this memorandum will likely require engagement with EPA staff. BASMAA is currently setting up a meeting with Carmen Santos of EPA Region 9's Waste Management Division. Jan O'Hara, the RWB staff taking the lead on PCBs in building materials permit program development, will be kept informed about all of BASMAA's communications with EPA.

Additional details regarding the above three items are presented in the following three sections.

Please note that these materials are submitted by BASMAA Phase I managers. They have not been vetted by MRP Permittees and are provided solely to assist the Regional Water Board's consideration of and potential reaction to concepts or language it may, in its discretion, elect to advance relative to the reissuance of the Municipal Regional Permit for stormwater discharges (MRP). It is not intended and should not be misconstrued as an offer to take on, or volunteer for, any potential permit requirement that represents a new program or higher level of service relative to the MRP or its predecessor permits.

## 1. MRP 2.0 Administrative Draft – Provision C.12.f

### C.12.f. *Manage PCB-Containing Materials and Wastes during Building Demolition and Renovation Activities*

- i. **Task Description – At the time of submittal of an application for a demolition or renovation (demo/reno) permit, the Permittees shall require the applicant or project proponent to determine whether PCBs are present in the structure and, if so, to take follow up actions prior to issuance of the permit. This requirement shall apply only to potential PCB-containing structures which are structures built or remodeled between the years 1950 and 1980. Single-family residential structures are excluded.**

- ii. **Implementation Level –**

**At the start of the third year of the permit term and thereafter, before issuing a demo/reno permit for a potential PCB-containing structure, each Permittee shall require the permit applicant to do the following:**

- (1) **Sample caulking around concrete joints, masonry joints, doors, and windows. Sample exterior paint, mastics, glazing, and coating on acoustic tiles.**
- (2) **Have the samples analyzed for total PCBs. The lab should follow the approach referenced in U.S. EPA's PCB regulations, such as method 3500B/3540C from U.S. EPA's SW-846, Test Methods for Evaluating Solid Waste, for chemical extraction of PCBs. For analyzing extracts, Method 8082 from U.S. EPA's SW-846 or a method capable of detecting total PCBs at a concentration of 25 parts per million (for all PCBs in total) or less is appropriate.**
- (3) **In lieu of sampling and analysis, the demo/reno permit applicant may assume the building materials listed in C.12.f.ii.(1) contain PCBs at concentrations equal to or greater than 50 parts per million and manage these materials in accordance with U.S.EPA regulations.**
- (4) **Submit all analytical results, including the list of materials assumed to contain PCBs under C.12.f.ii.(3) where applicable, with the potential PCB-containing structure address and permit applicant contact information to the Permittee and to the Water Board.**
- (5) **Where PCBs are present or assumed present in any building material at a concentration equal to or greater than 50 parts per million, prior to issuance of a demo/reno permit the Permittee shall require and verify that the demo/reno proponent has a letter or email from U.S. EPA, Region IX or Water Board stating that PCBs-containing materials have been adequately removed.**

- iii. **Reporting –**

- (1) **In their 2016 and 2017 Annual Reports, the Permittees shall summarize the steps they have taken to begin implementing this requirement, which could include developing ordinances or policies, obtaining information materials, updating or supplementing permit application forms, developing a tracking tool for potential PCB-containing structures, and training relevant staff as needed to comply with this sub-provision.**

- (2) **Beginning with their 2018 Annual Report, the Permittees shall list all potential PCB-containing structures that have applied for a demo/reno permit, with the current reporting year's applicants on top, with the potential PCB-containing structures address, project proponent contact information, and date of permit issuance for each project.**

## **2. BASMAA Issues and Questions regarding the Administrative Draft Approach to Provision C.12.f**

BASMAA has identified the following issues with the administrative draft approach to Provision C.12.f:

- Any program to manage PCBs in building materials during demolition/renovation should be phased in over time with adequate stakeholder input, development of guidance, and associated outreach.
- Any program would need to clearly define the roles of municipalities vs. RWB vs. EPA. Project proponents would likely not be served well by any process requiring EPA or RWB staff approval at the application level (i.e., per C.12.f.ii(5)). We understand that RWB staff concur that the C.12.f.ii(5) approach should be revised.
- Any program should restrict the scope to larger concrete or masonry buildings (i.e., include an exemption for smaller commercial and multi-unit residential buildings in addition to single-family homes), until effectiveness is demonstrated with larger projects, as was the process with C.3. The annual volume of potentially affected permitted renovation projects is much larger than for new development or major redevelopment.
- Recycling practices, requirements and infrastructure to divert demolition and construction materials from landfills have rapidly developed over the last 10 years in the San Francisco Bay Area. These programs were established in the context of asbestos and lead regulations and have therefore taken those pollutants into account in their design. A program to manage PCBs in building materials has the potential to disrupt these recycling practices. Testing building materials for PCBs as part of the management program will have implications for proper disposal of materials found to contain certain levels of PCBs, both for materials that originally may contain PCBs (e.g., caulks, sealants, and paints) and surrounding building materials that PCBs may have migrated into. These proper disposal needs could disrupt existing recycling programs.
- Illegal dumping of demolition and/or construction debris is already a significant problem in some areas and could be exacerbated by new PCBs-related regulations that are not well thought through and implemented with sufficient guidance and outreach.
- The proposed new program could lead to an increase in un-permitted demolitions/renovations.
- If a proposed renovation is only for a portion of the structure (such as one tenant space in a multi-tenant office or commercial building) or limited elements such as replacement only of certain windows (e.g., at ground floor lobby), would the proposed requirement to test for PCBs, and abate if necessary, only apply to the building portions or elements directly affected by the renovation? We understand that USEPA/Water Board have the authority to extend the investigation and potential abatement scope for PCBs to other parts of the property beyond initial testing. Could we assure applicants that this would not happen, or at least define certain conditions under which it would not happen?

- If the PCBs are presumed present at 50 ppm or more, how much testing would likely be required for acceptance at the disposal site?
- What would be the realistic Bay Area scenario for a contractor or building tenant disposing of building waste materials tested or assumed to be at least 50 PPM? What guidance might municipalities wish to provide for “naïve” small contractors and building owners, e.g., lists of consultants, testing labs, and disposal sites?

### 3. Options for Moving Forward

BASMAA has identified the following elements that should be considered during development of a program to manage PCBs in building materials during demolition/renovation. At this time here are a number of plausible approaches to moving forward, each of which needing further exploration. The MRP 2.0 Tentative Order should be inclusive of these options and the scope of the program narrowed later based on comments received through the public review process.

- The best approach would be to work with the State, USEPA, the building industry, and other stakeholders to develop a comprehensive statewide program analogous to current programs for asbestos and lead paint. Implementing a program at the local level would likely be highly inefficient.
- Bay Area Air Quality Management District (BAAQMD) regulations for demolition of buildings provide a potential model for the future regulation of PCB removal from buildings. The BAAQMD requires that a “J Number” be applied for and obtained prior to demolition of an existing structure. This notification must be made to the BAAQMD at least 10 working days prior to commencement of demolition/renovation (District Regulation 11 – Hazardous Pollutants Rule 2 – Asbestos Demolition, Renovation and Manufacturing). This J Number process is designed to ensure that asbestos is not released into the air when buildings are renovated or demolished. While the BAAQMD does not currently have the regulatory authority to require the removal of PCBs-containing construction material prior to demolition, a program could be established through a rule-making process with BAAQMD or at the statewide level with the California Air Resources Board (CARB.) It should be noted that although BASMAA is primarily concerned with PCBs-containing building materials entering storm drains, at some sites there may human health concerns due to human exposure to PCBs vapors or fine particles released into the indoor or outdoor air environment. Piggybacking on the existing BAAQMD permitting process for asbestos could potentially occur at the local or statewide level with CARB. Initial discussions with a senior BAAQMD staff person yielded positive comments and a willingness to explore the issue further.
- The RWB could recommend a building code amendment to the state Building Standards Commission (BSC). Every three years new building codes are reviewed and adopted by the BSC; the PCBs provisions could be added to that process. Local jurisdictions then adopt the new codes or make a request to the BSC asking for approval to make modifications based on specific local conditions, so the new PCBs control provisions would generally be implemented by default. The RWB and Permittees could work with CALBO (the statewide organization of Building Officials) on this effort. Implementing this effort through the BSC would more likely result in a consistent program throughout a designated zone of application within the state and avoid a patchwork of differing local regulations. Currently the BSC is working on the 2015 Triennial Code Adoption Cycle which will culminate with the publication of the 2016 California Building Standards Code, Title 24, California Code of Regulations. The 2016 Code will be published on or

before July 1, 2016 and will go into effect on January 1, 2017. So the next adoption cycle would be three years later.

- Develop standardized cleanup plans suitable for structures in the San Francisco Bay area. If created in coordination with EPA Region 9, standardized cleanup plans addressing common types of cleanup sites could ease the burden on EPA for cleanup oversight while providing building owners and developers with specific, practical, and feasible mechanisms for responding to the discovery of PCBs in building materials. Regional standardization would ensure that PCBs cleanups are consistent with the TMDL for PCBs in San Francisco Bay. Standardization would make cleanups predictable by clarifying cleanup costs and time frames.
- The scope of any program to manage PCBs in building materials during demolitions during the MRP 2.0 permit term should be narrowed as follows:
  - Regulated Buildings:
    - Land Use: Residential excluded.
    - Age: Only those buildings constructed from 1950 through 1980.
    - Type: Concrete and masonry buildings only.
    - Size: Demolitions of whole buildings with a minimum floor area of \_\_\_\_.<sup>1</sup> Interior demolitions are excluded.
  - Regulated PCBs-containing materials: only caulks and joint sealant materials containing a concentration of 50 ppm total PCBs or greater.

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<sup>1</sup>One possible threshold to consider is one acre (43,560 square feet), which would align the program with the statewide general construction permit which uses a regulated projects threshold of one acre of disturbed soil.

### C.13. Copper Controls

The control program for copper is detailed below. 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 through the permitting process and/or enforcement activities.
- ~~(3) The Permittees shall report annually permitting and enforcement activities.~~

**Comment [BWG1]:** Permitting may not be appropriate for all permittee programs. Clarification to report description of their program.

**Comment [BWG2]:** Annual reporting is excessive for this category of discharges. Permittees must provide information on their program in the 2016 Annual Report.

**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.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; and
  - (7) 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-viii 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 monitoring wells, used for groundwater basin management, which are owned and/or operated by the Permittees who pump groundwater as drinking water. These aquifers tend to be shallower, when compared to drinking water aquifers.

(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, CAG912003, and CAG912004.
- (ii) The water samples shall be analyzed using approved USEPA Methods: (a) USEPA Method 8015 Modified for total petroleum hydrocarbons (b) USEPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds; and (c) approved USEPA methods to meet the triggers for the metals listed in the general permits discussed in C.14.(b).i.(1)(a)(i) above.
- (iii) The water samples shall be analyzed for pH and turbidity.
- (iv) 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 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) If turbidity is greater than 50 NTU and the discharge is greater than 42,0500 gpd 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 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.

**Comment [A1]:** Receiving water monitoring is often extremely difficult for any number of factors: tracking from the point of discharge to the storm drain system to find the receiving water and outfall which could be miles away; no access to receiving water near outfall (private property or safety concerns); or no flow in receiving water. Results may not be useful if the sample must be taken a significant distance from the outfall and are influenced by other discharges not related to the uncontaminated groundwater. In addition this provision applies to ALL discharges 0 - ??? gallons. Therefore a minimum groundwater discharge quantity trigger was added.

- (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 NTUs 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 above criteria, 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 General Groundwater Permits.
- (d) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.
- (2) **Pumped<sup>1</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 ~~apply for coverage under one of the Water Board's Groundwater General Permits.~~
  - (b) 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.
  - (c) Groundwater 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 consistent with the existing effluent limitations or pollutant triggers in Water Board's NPDES Groundwater General Permits, NPDES Nos. CAG912002, CAG912003, and CAG912004.

<sup>1</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 USEPA Methods:
  - USEPA Method 8015 Modified for total petroleum hydrocarbons and (b) USEPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds.
  - The approved USEPA Methods for the metals listed below that meet the corresponding Reporting Limits:

<u>Metal</u>	<u>Reporting Limit</u>
Antimony	6 µg/l
Arsenic	10 µg/l
Beryllium	4 µg/l
Cadmium	1.1 µg/l
Chromium VI	11 µg/l
Copper <sup>2</sup>	5.9 µg/l
Copper <sup>3</sup>	3.4 µg/l
Copper <sup>4</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

(d) **Monitoring and Required BMPs** – When the discharge has been verified as uncontaminated per sampling completed in C.15.b.i.(2)(c) above, the Permittees shall require the following for discharges < 10,000 gallons per day to the storm drain system:

- (i) If turbidity is greater than 50 NTU and the discharge is greater than 12,0500 gpd 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 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 bank, nuisance, contamination, and excess sedimentation in the receiving waters.

**Comment [A2]:** Receiving water monitoring is often extremely difficult for any number of factors: tracking from the point of discharge to the storm drain system to find the receiving water and outfall which could be miles away; no access to receiving water near outfall (private property or safety concerns); no flow in receiving water. Results may not be useful if the sample must be taken a significant distance from the outfall and are influenced by other discharges not related to the uncontaminated groundwater. In addition this provision applies to ALL discharges 0 - 10,000 gallons. Therefore a minimum groundwater discharge quantity trigger was added. The minimum quantity is equivalent to the flow from a faucet.

<sup>2</sup> Applicable to Suisun Bay and San Pablo Bay segments of San Francisco Bay.

<sup>3</sup> Applicable to Central Bay and Lower Bay segments of San Francisco Bay.

<sup>4</sup> Applicable to South San Francisco Bay segments of San Francisco Bay.

- (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 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.~~
- (e) If a **Permittee** determines that a discharger or a project proponent is unable to comply with the above criteria, discharge shall cease immediately and the discharger 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 General Groundwater Permits.
- (f) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

Comment [A3]: Comment

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

**Required BMPs** – Condensate from air conditioning units shall be 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 the Potable Water System**

- (1) **Emergency Discharges** – Emergency discharges are the result of firefighting, unauthorized hydrant openings, natural or man-made disasters (e.g., earthquakes, floods, wildfires, accidents, terrorist actions).

**Required BMPs**

- (a) The Permittees shall implement or require fire fighting 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 fire fighting personnel shall control the pollution threat from their activities to the extent that time and resources allow.
- (c) **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.

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**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 MS4s.
- (2) The Permittees shall encourage individuals to direct car wash waters to landscaped areas, use as little detergent as necessary, wash cars at commercial car wash facilities, etc.

**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 algaecide, 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>5</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.
- (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

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<sup>5</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.

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 MS4s.
- (2) **Reporting** – The Permittees shall provide implementation summaries in their Annual Report.

**vii. Permit Authorization for Exempted Non-Stormwater Discharges**

- (1) Discharges of non-stormwater from sources owned or operated by the Permittees are authorized and permitted by this Permit, if they are in accordance with the conditions of this provision.
- (2) The Water Board may require dischargers of non-stormwater, other than the Permittees, to apply for and obtain coverage under an NPDES permit and to comply with the control measures pursuant to Provision C.15.b. Non-stormwater discharges that are in compliance with such control measures may be accepted by a Permittee and are not subject to Prohibition A.1.

## MRP 2.0 Work Group Meeting on “Other Provisions”

February 24, 2015

Attendees: Keith Lichten, Dale Bowyer, Selina Louie, Jan O’Hara, Richard Looker (Water Board staff); Luisa Valiela (EPA); Melody Tovar (Sunnyvale); Tom Dalziel, Beth Baldwin (CCCWP); Tim Potter (Contra Costa County); Jim Scanlin (ACCWP); Roger Lee (Cupertino); Napp Fukuda (San Jose); Kristin Kerr (EOA/SMCWPPP); Jill Bicknell (EOA/SCVURPPP).

### General

- Deadline for Comments – Keith said he would like to get comments on as many provisions as possible by March 9, but we could request an extension (as a group) for select provisions.

### C.4 - Industrial and Commercial Site Controls

- C.4.c.ii.(2) Review of SWPPP for inadequacy and not implementing site specific SWPPP
  - Selina – not asking for detailed review of SWPPPs but sometimes inspectors will ask if any activity is included in the SWPPP.
  - **Agreed to clarify that SWPPP review is not required and change “i.e.” to “e.g.” before list of field scenarios.**
- C.4.c.ii.(3) Replaced "goal" for correcting "violations" with "require" correction for "all potential and actual discharges"
  - Permittees – concern that this will greatly increase the number of follow-up inspections required.
  - WB staff suggested the following approach:
    - Anything that can be fixed during the inspection, observe the fix and do not need to go back in 10 days
    - Appropriate follow-up can include allowing business to send a picture showing that the fix was done (written response is not enough).
    - Follow-up depends on what’s in your ERP.
  - **Agreed that alternative approaches to follow-up site visits are acceptable and should be made clear in the provision language.**
- C.4.d.iii Reporting will be more extensive in this permit term with the removal of the verbal warning exception and the change to “all potential and actual discharges”
  - Selina – changes to reporting requirements are based on experience with current permit. Permittees seem to be inspecting a lot but not documenting many problems. This is inconsistent with inspections that WB staff has conducted themselves or conducted with permittees.
  - Tim – concern about having to report verbal warnings. Currently not tracking them in the database (but recorded in the inspection report). Others shared this concern.

- Selina – concerned about ERPs that lump all potential discharges into verbal warnings and only have written warnings for observation of actual discharges.
- Dale – assumes that Permittees are communicating with businesses, educating them and documenting issues, but WB staff is not seeing evidence of this since it is not reported. They want to make sure that potential violations are accounted for. There seems to be a gap between minor problems and major problems.
- **Agreed to consider Permittees’ suggestions for changes to reporting.**
- List of businesses – Proposed language allows permittees to maintain list as part of annual inspection plan (within it or in database) and don’t need to submit with the annual report, which is a positive change.
- Jim – is it a violation to not inspect every business on your annual list? Some cities were getting NOV’s for this. Tim – prioritization is important and may change. Melody – inspection plan includes caveat that priorities may be adjusted as the year goes on. Selina responded that they recognize the annual list may change and they will not call this a violation in the future (Dale agreed).

#### C.5 - Illicit Discharge Detection and Elimination

- C.5.a.ii.(1).(a) Sewage
  - asked for clarification that sewage spills already reported as an SSO in CIWQS, as required by State Board Order No. 2006-0003-DWQ, do not need to be tracked and reported in the permittee’s electronic data tracking system required by C.5.d.ii
  - **WB staff agreed to add a statement that reporting under another permit (e.g., sewage spills/overflows) does not need to be repeated under this permit.**
- C.5.b.ii.(2) same issue as C.4 regarding review of SWPPPs (ERP language was copied from C.4)
  - **Agreed to clarify language and change “i.e.” to “e.g.” before list of field scenarios.**
- C.5.e. Mobile businesses
  - Concern that requirements have expanded and extensive reporting
  - Selina – problem that permittees were referring to BASMAA for their mobile business efforts, and reports weren’t showing what people were doing. Requirements are essentially the same as the current permit, just more explicit. Same inspection requirements - “Inspection as needed”.
  - Tim – actually tried to chase some down during the night and found a few illegal discharges, but determined that it wasn’t worth the effort.
  - Dale – maybe need outreach to restaurants. Some mobile businesses are cleaning hoods and other equipment.

- Selina’s intention in having a reporting requirement to summarize outreach activities since 2009 (i.e. summarizing outreach activities from previous permit cycle in new permit) was to gather more information on what was done under MRP 1.0 to inform MRP 3.0
- Previously had a requirement to have an inventory of mobile businesses but new requirement to update annually; compiling a list of mobile businesses is very difficult and updating annually would be a significant effort
- Selina – C.4 reporting is planned, active inspections. C.5 is a reactive inspection. Trying to understand what we are finding and how big of a problem these businesses are. The data they get on illicit discharges doesn’t indicate which ones are coming from mobile businesses.
- Jim/Melody/Tom – this is a small problem compared to the rest of the permit. Want to be able to focus resources elsewhere. Tim – outreach is the best solution. Dale – a reasonable outreach program for this provision may be an acceptable way of compliance.
- **WB staff understood the permittees’ concerns on control of mobile businesses and requested a proposal for alternative language.**
- C.5.d The phrase “that might pose a threat to water quality” was removed from the description of incidents that should be tracked, which could expand the list of incidents.
  - WB staff said the intent was not to expand the universe of spill/dumping incidents tracked
  - **Agreed to put the phrase “that pose a threat to water quality” back into the tracking and reporting requirement.**

#### C.6 - Construction Site Control

- C.6.b.ii.(2) same issue as C.4 regarding review of SWPPPs (ERP language was copied from C.4)
  - **Agreed to clarify language and change “i.e.” to “e.g.” before list of field scenarios.**
- C.6.b.ii.(3) Replaced "goal" for correcting "violations" with "require" correction for "all potential and actual discharges"
  - Same issues as C.4 above; will increase data tracking and reporting efforts
  - **Agreed to consider Permittees’ suggestions for changes to reporting.**
- C.6.e.ii(1) Wet season notification – added all sites with grading permits
  - Tom – what was the reasoning behind this?
  - Dale/Selina – not sure what the intention was
  - **Agreed to strike the grading permit language**
- C.6.e.ii (2).(b) Monthly inspections of hillside areas
  - Jill – 5% too low.
  - **Agreed to consider other minimum slope** (open to suggestions).

- Selina – OK if permittees have hillside maps. The provision says “OR”. For those who don’t, want to set a criterion.
- Jim – for those that don’t have hillside maps, can they develop them?  
Selina – yes
- Jim – does this apply to all hillside projects, even very small ones?
- **Agreed to specify a minimum square footage of disturbed land, instead of “all” projects** (open to suggestions)
- C.6.e.iii Reporting
  - Similar to previous reporting which was also extensive
  - Requested streamlining of reporting if possible.
  - Jim- look at removing the reporting of violations by category

### C.9 - Pesticides Toxicity Control

- Introduction – added two new pesticides
  - Jan – came from the UPC watchlist. Any that we can remove? Tom – Aldicarb no longer allowed for use in CA. Remove diazinon and chlorpyrifos? Jan will check with EPA.
- C.9.a.iii.(2) - Reporting of three IPM actions each year (focus on “new or enhanced”)
  - Jan – looking for a couple sentences on specific implementation experiences, special investigations, etc., showing the permittee has thought about the application of IPM. Not necessarily looking for “new or enhanced” actions in a mature program just example of how permittee is implementing program.
  - **Agreed to change language to report three brief examples of “IPM tactics/strategies” employed during the year.**
- C.9.c.i. requirement to have contract specs AND certification, as opposed to “OR”.
  - Jan – did not realize that the “and” was changed to “or”. When she reviewed permittees’ contracts, issues were that contract specs were not complete, or added one sentence about IPM but did not change other aspects of the traditional contract.
  - All agreed that there were limitations to certification programs, and that they applied to an individual, not a company.
  - Melody – suggesting that the permit require contractors to “implement IPM consistent with Permittee’s IPM policies”.
  - **Agreed that the option to hire certified contractor should be removed, and to include language saying contractors should “implement IPM consistent with Permittee’s IPM policies”.**
- C.9.c.ii & iii New requirement for permittees to observe contractors
  - **Agreed to change “observe” to “monitor” (here and in reporting requirement) and take out reference to PCAs**
- C.9.d Interface with County Ag Commissioners
  - basically same requirement as current permit

- C.9.e Public Outreach
  - Jill – asked if outreach to landscaping professionals could be included along with structural
  - Jim – still need to mention Ecowise? Jan – probably not, will take a look at that
- C.9.f – Track and Participate in Relevant Regulatory Processes
  - Same level of effort as previous permit
  - Jan – great work done under the previous permit, this is where we are seeing the most positive changes

### C.13 - Copper Controls

- Richard – two elements taken out:
  - Brake pad requirements due to legislation being passed
  - Studies to reduce copper impact uncertainties
- C.13.b.iii.(3) Reporting requirements for pool/spa/fountain discharges
  - Annual reporting on “permitting and enforcement activities”?
    - Richard thinks this was an error. All three reporting requirements were copied from the architectural copper section and he will review to determine applicability to this section.
    - **Agreed to remove reference to “permitting process”.**

### C.15 - Exempted and Conditionally Exempted Discharges

- C.15.b. Potable water discharges removed
  - Tim – how does this affect discharges from private water companies? Melody – not under our jurisdiction. Kristin – those permittees have a requirement to report discharges to the city and state. Tim – if we see a problem, we don’t have authority to cite. Melody – if there is a problem it is an unauthorized discharge, suggested if a small problem, note under illicit discharges and if a larger problem refer to the Regional Water Board
  - Melody – requested some clarification in C.15 or the fact sheet
  - **Agreed to clarify how potable water discharges are being addressed, in provision, finding, and/or fact sheet.**
- C.15.a Removed “pumped groundwater from drinking water aquifers” from list of exempted discharges
  - Selina - Removed this discharge from the list because when wells are being developed, initial discharges contain contamination. Will take another look at this.
  - WB staff did not think the new state permit covers pumped groundwater from drinking water aquifers
  - **Agreed to consider whether this discharge should continue to be exempted here**

- C.15.b.i.(1).(b).(i) Pumped Groundwater from Non-Drinking Water Aquifers and C.15.b.i.(2).(d).(i) Pumped Groundwater, Foundation Drains and Water from Crawl Space Pumps and Footing Drains - both have new requirement to sample receiving water upstream and downstream of discharge point
  - Concern about 1) accessing receiving water, 2) how useful results are of downstream sample if discharge is comingled over several miles of storm drain system before reaching outfall, 3) requirement for all discharges (especially because applies to any discharge of b.i.(2) uncontaminated pumped groundwater from 0 – 10,000 gpd), 4) if dry creek
  - Selina – these are the requirements they currently issue to dischargers. Need an ambient number to compare to.
    - If discharge to landscaping – no analysis required
    - Single family homes exempt
  - **WB staff agreed to look at pH and turbidity limits and eliminate receiving water monitoring for certain thresholds** (e.g., only need to check receiving water if discharge above 50 NTU).
  - **WB staff will consider language about exemption from receiving water monitoring if the creek is dry**
  - **WB staff will consider minimum groundwater discharge quantity trigger for monitoring receiving water**

Wrap-up

- Jill will email notes and list of action items to the work group.

**Attendees:** Dale Bowyer and Keith Lichten (SF Bay Region Water Board); Beth Baldwin and Dan Cloak (CCCWP); Jim Scanlin (ACCWP); Rebecca Tuden (Oakland); Peter Kolzelka (US EPA); Napp Fukuda (San Jose); Melody Tovar (Sunnyvale); Roger Lee (Cupertino); Brett Calhoun (SCVWD); Cece Sellgren (Contra Costa County); Chris Sommers (SCVURPPP/SMCWPPP).

### **Major Discussion Topics:**

The following major topics were discussed at the meeting to discuss key issues associated with the administrative draft Phase I MS4 NPDES regional stormwater permit. Attendees generally agreed to the following next steps. The topics discussed may not include all issues identified to-date and the agreed upon next steps do not preclude Permittees from identifying additional concerns in the future.

- **Attachment J (Current MRP)** - Water Board staff requested that Permittees provide a list of errors identified in Attachment J (Minimum Trash Capture Area and Minimum Number of Trash Hot Spots) of the current MRP. Errors in the presented retail/wholesale land area within a Permittee's jurisdictional area were previously identified by Permittees and many submitted information to the Water Board in an attempt to correct the errors. Staff would now like Permittees to resend this information and clearly identify the error and the revision. Permittees/Program staff present agreed to pass this request to all MRP Permittees.
- **C.10.a - Trash Reduction Requirements**
  - **Schedule** – Permittees requested that the 2016 and 2019 compliance milestones be removed from the Permit. Permittees generally agreed to report on load reduction estimates annually, however disagreed with having three compliance milestones during the permit term because implementation actions occur overtime and not at a timeframe consistent with compliance schedules included in the administrative draft.
  - **Trash Generation Area Management**
    - Permittees requested that trash generation rates listed in this provision be listed as ranges rather than specific numbers. Listing as specific rates gives the impression of a higher level of precision than possible and that rates are not variable. This change would have no affect on the load reduction calculation formula/process. Water Board staff agreed to consider this change.
    - Note that lowering of generation rate to any lesser level (not just to green) can provide compliance value.
    - To better organize the provision, Permittees requested that all reference to load reduction calculation procedures and the formula in the trash generation management section be moved to provision C.10.b.  
*(Additional revisions to the formula and load reduction calculation process*

*are provided under provision C.10.b heading*). Water Board staff agreed to consider this change.

- Permittees are generally concerned about their current authority to ensure that trash from private lands is managed to a low trash generation level or require full trash capture systems on private lands draining to their MS4. Permittees suggested that this requirement be linked to new construction or redevelopment. Water Board staff agreed to consider language that would incorporate this change. Clarify that private lands draining directly to MS4 via an independent/separate hook-up are regulated by this.

- **Mandatory Minimum Full Trash Capture Systems**

- Permittees requested that full trash capture system definition be reviewed for consistency with the definitions in MRP 1.0 and the State Board's proposed Trash Amendments. Water Board staff agreed to review the definition for consistency. Clarify that the definition of 5mm is the threshold that complies with full trash capture
- Permittees requested that C-3 facilities provide trash compliance value and can qualify as full capture systems in MRP 2.0. Currently it is unclear whether C.3 facilities are considered full capture systems. Water Board staff agreed to consider language that would incorporate this change.

- **C.10.b. – Demonstration of Trash Capture Outcomes**

- **Full Trash Capture Systems**

- Permittees requested that minimum maintenance frequencies be removed and possibly replaced with minimum inspection frequencies (e.g. 2x per year) and the requirement for Permittees to establish an operation and maintenance program specific to the maintenance needs in their municipality and consistent with the full capture system definition. Water Board staff agreed to consider language that would incorporate this change.
- Permittees requested that the type of maintenance records needed to determine that the devices are properly maintained should be reviewed and revised to provide efficiencies in tracking and reporting. Water Board staff agreed to consider language that would incorporate this change.
- Permittees requested that the term “certify” for this provision be removed as it is a legal term that applies to the entire Annual Report. Permittees understood the intent of the Water Board staff was to ensure that devices are being properly maintained and adequate resources are being provided by municipalities to do so. Water Board staff agreed to consider language that would incorporate this change.
- Permittees requested to remove language on “other information” obtained from full trash capture. This reporting requirement is unlikely to provide relevant information.

- **Non-Full Trash Capture Systems**

- Permittees and Water Board staff agreed that the load reduction calculation formula as written did not work. Additionally, attendees agreed

that the load reduction calculation formula should be revised to incorporate reductions associated with making progress towards achieving a lower trash generation, not only when low generation is demonstrated. Water Board staff agreed that progress towards a lower trash generation should be incorporated into the formula and also agreed to consider language that would incorporate this change.

- Permittees requested that load reduction value for both the implementation of source control actions that reduce the generation of litter prone items (e.g., single use plastic bags) and creek and shoreline cleanups above and beyond those required by the permit are given and incorporated into the load reduction formula. Water Board staff agreed to consider language/concepts that would incorporate this change.
- Permittees requested that language be added to allow for a specific trash reduction amount to be determined through the results of a focused study designed to evaluate the effectiveness of a BMP or combination of BMPs. Process for this and ensuring “compliance certainty” needs to be explored. Water Board staff agreed to consider language that would incorporate this change.
- **Assessment**
  - Permittees requested and Water Board staff agreed to change language regarding “street miles” to “curb miles” and consider reducing the percentage, and provide more guidance/certainty in the provision for “strategic” location sampling.
  - Clarify if “green” areas are included in areas to be visually assessed.
  - Permittees agreed to further evaluate whether it would be feasible to incorporate “in between” categories for visual assessments (e.g., B/C). Water Board staff agreed to consider language that would incorporate this change. Most important for city-wide actions that have large geographic area benefit but not visible on street-by-street assessment.
- **Receiving Water Observations**
  - Permittees are concerned that the intent of receiving water observations is to determine compliance with trash reduction goals. Permittees requested that the language in the administrative draft be revised to better describe the intent of receiving water observations to assess trash conditions and trends in creeks and identify sources to the extent possible. Water Board staff agreed to consider language that would incorporate this change.
  - Permittees generally agreed that a consistent method for efficiently conducting receiving water observations should be developed and used by Permittees. Water Board staff agreed to consider language that would incorporate this change.
- **C.10.c. - Trash Hot Spot Selection and Cleanup** – Permittees asked to remove the “source identification” description requirement. It was agreed by Permittees and Water Board staff that this provision is very similar to the provision in MRP 1.0, with the

exception that in the administrative draft photographs are only required every 100 feet instead of the 50 feet previously required. Suggested removing the “every 100 feet” photograph and instead allowing permittees to identify adequate photo documentation locations at each site that are sufficient to show clean-up area.

- **C.10.d – Trash Load Reduction Plans-** Permittees and Water Board staff agreed that as written, the requirement that “Plans should also include actions to control sources outside the Permittee’s jurisdiction...and Permittees can account for such actions towards meeting trash load reduction requirements” is currently unclear. Permittees requested that language be added to give specific examples of “sources outside of the Permittee’s jurisdiction.” Water Board staff agreed to consider language that would make the language clearer.
  
- **C.10.e – Reporting**
  - Permittees requested there should be a clear nexus between each type of information required to be reported and the information needed for Water Board staff to determine compliance and progress toward load reduction goals. Water Board staff agreed to consider language that would incorporate this change.
  - Permittees requested that the process by which a Permittee takes to identify next steps and schedule should they be unable to reach a compliance milestone should be reviewed and edited as necessary. Water Board staff agreed to consider language that would incorporate this change.
  - Permittees discussed the significant resources going into compliance reporting for C.10. Suggested that every-other year is preferable with ½ of permittees reporting each year.

**Action Items:**

- Permittees/Programs to provide Water Board staff a list of errors previously identified in Attachment J (i.e., acreage required for full capture systems and numbers of creek and shoreline hot spots) of the current MRP and edits to address these errors.
- Permittees/Programs/BASMAA to provide Water Board staff with redline-strikethrough version of MRP 2.0 Administrative Draft Provision C.10 that includes edits/revisions addressing major issues identified.
- Permittees to provide specific language to incorporate both source controls for litter prone items and creek/shoreline cleanups into the load reduction calculation formula.
- Permittees to discuss the potential for incorporating “in between” categories into on-land visual assessments.
- Permittees to discuss the potential for developing a receiving water observations protocol during the term of MRP 2.0.

## February 27, 2015 MRP 2.0 POCs Workgroup Meeting

### Outcomes and Key Discussion Points

- Jon Konnan (EOA/SMCWPPP/BASMAA) stated that BASMAA is concerned that the current framework that RWB staff is proposing (load reduction targets with an associated accounting system) is not currently technically supportable due to the current lack of the technical data needed to quantitatively evaluate PCBs control measure effectiveness with any reasonable certainty.
- BASMAA concerned with the admin draft approach: load reduction requirement now, develop accounting system later, requires a leap of faith.
- Therefore Permittees don't see a clear and feasible pathway to attaining compliance (i.e., meeting the load reduction goals within the permit term).
- An alternative approach would be for Permittees to commit to actions, not load reductions, over MRP 2.0 (but with anticipated load reduction benefits estimated). In general, the overall C.12 framework remained under discussion during entire meeting.
- BASMAA evaluating proposing an approach that would focus on three main BMP programs (building materials, source area ID and abatement, and GI). GI could include some opportunistic early implementation during MRP 2.0 but the permit term would mainly be dedicated to planning a multi-decade implementation effort that would start with MRP 3.0.
- Three main programs would not preclude strategically implementing other BMPs. Not aware of any opportunities at this time to implement other programs cost-effectively but could be found during permit term. One possibility would be to require Permittees to submit an analysis of such strategic implementation (over and above 3 main programs) by year 3 or so and then implement as cost-effective.
- CW4CB final report anticipated to be due September 2016 and could help with accounting but won't include any new information on PCBs in building materials.
- RWB staff noted lack of action despite the awareness for a few years that high levels are present in certain Bay Area buildings. Jon responded at that time BASMAA staff reached barriers in the pilot study work and told RWB staff we need a state or federal program to address PCBs in building materials, analogous to asbestos and lead paint programs. That is still BASMAA's recommended approach.
- Lucile Paquette (CCCWP) noted that the timelines in the administrative draft are very aggressive.
- Peter Kolzelka (EPA) noted that his personal view is that a BMP-based approach would not be the best approach and he thinks that MRP 2.0 should have a load reduction goal and Permittees should have to figure out how to meet it. But he recognizes there are other approaches and will discuss with his EPA colleagues (see below next steps).
- Anticipated area of difficulty is divvying up any load reduction or benefit numbers among countywide programs. Load allocations are population based but that is not a good indicator of PCBs loading since different areas were urbanized at different times, to different extents, and in different ways.

- Tom Mumley (RWB) talked about possible ways to soften load reduction requirement numbers (e.g., action levels).
- Tom's quick points at end, noted for further discussion and/or clarification
  - Stormwater diversions to POTWs – Tom wants us to still consider in strategic areas. Jon noted a cost-effectiveness evaluation will be completed soon for a very hot area in San Carlos. Richard noted that the stormwater program IMRs made a good case that diversion is not a relatively cost-effective approach.
  - Tom stated that with a BMP-based approach would need to increase BMPs/monitoring such that increased certainty of BMP effectiveness would result (i.e., need to increase “n”).
  - Tom stated RWB staff would consider more GI in lieu of other things.
  - Tom stated we need to determine what it means to demonstrate reasonable assurance. Must pass the “regulatory laugh test” and inform management decisions.
  - Tom noted we have not yet talked about which watersheds to implement BMPs within and BASMAA concerns with schedules because we are trying to get on the same page about the framework first.

#### Next Steps

- Another POC workgroup meeting was scheduled for March 10 at 9:30am.
- BASMAA will further assess its position with regard to implementing a PCBs in building materials program as soon as possible. Jon will take the lead soliciting and compiling feedback.
- BASMAA will provide the framework for a counter proposal to C.12 in the administrative draft as soon as possible. Jon will take the lead preparing and vetting with BASMAA to the extent possible.
- BASMAA will begin working with Richard on attempting to reach agreement on the benefits (including error bars) of the major PCBs BMP possibilities. Jon will coordinate and work with Lisa Austin and others through the BASMAA MPC Committee.
- Arleen Feng (ACCWP) will email Jan O’Hara and ask her how she wants to be involved in communications to EPA’s Carmen Santos by Arleen and ACCWP’s NGEM consultant regarding specific scenarios for regulatory signoff on PCB abatement activities by applicants for reno/demo permits per the administrative draft’s C.12.f (i.e., go through her, meet with them jointly, or just be cc’d).
- Peter K. will discuss issues from today’s meeting with his EPA colleagues and provide feedback asap, including:
  - Various approaches to the permit compliance framework (e.g., load reduction performance standard vs. BMP program basis with anticipated benefits estimated).
  - Potential use of action items vs. “effluent limits” (i.e., load reduction requirements).

# Update from MRP 2.0 C3/GI Workgroup



**Jill Bicknell**  
**EOA/SCVURPPP**

March 5, 2015



## Progress to Date

### **MRP 2.0 – C.3 New and Redevelopment**

- Received admin draft C.3 provision on 2/17
- Submitted White Paper on 2/27
- Collected input from permittees and BASMAA Development Committee (3/3)
- First work group meeting with Water Board and EPA staff on 3/4
- Positive meeting – gained understanding and clarification of many issues



## Areas of General Agreement

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- Maintain current size thresholds for Regulated Projects
  - Maintain current requirements for road reconstruction projects
  - Provide flexibility for alternative compliance
  - Maintain Special Projects credits and reduce reporting requirements
  - Make hydromodification requirements consistent for all permittees
  - Add requirements to develop Green Infrastructure Plans
- 



## Issues Likely to be Resolved

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- No “grandfathering” of older projects
  - Biotreatment soil specifications attached to permit (difficult to revise if needed)
  - Need to track/report potential Special Projects
  - Reduced reporting requirements for O&M verification inspections
  - **Next Steps**
    - WB staff has asked work group to provide proposed language.
- 



## Major Issues Remaining

- **Issue – LID Treatment Measure Infeasibility**
  - Still required to determine infeasibility of infiltration, evapotranspiration, and harvest/use before using bioretention
  - Permittees want bioretention to be in “top tier”.
- **Issue – Elimination of Special Projects Credits in MRP 3.0**
  - Admin Draft states that LID treatment reduction credits will not be allowed beyond MRP 2.0
  - Permittees want to retain credits.



## Major Issues Remaining

- **Issue – Hydromodification Management**
  - Have not yet discussed approach to making requirements consistent and other recommendations in White Paper
- **Issue – O&M Inspection of Pervious Paving**
  - Admin draft requires ongoing inspection of pervious paving installations (20% per year).
  - Adds inspection of > 5,000 SF of pervious paving installed at non-regulated projects
  - Want more flexibility in inspection programs
- **Next Steps** – Work group to provide proposed language and set up meeting to discuss HM



## Major Issues Remaining

- **Issue – Green Infrastructure Planning**
  - Drivers and level of effort required in plan closely linked to POC load reduction requirements
  - “One size fits all approach” – need to consider level of effort required by different types of permittees (or countywide?)
  - Need to better align GI Plans with transportation funding and grant funding (e.g., Prop 1) options
  - Need to allow longer timeframes for plan development tasks



## Major Issues Remaining

- **Issue – GI Early Implementation**
  - Review of CIP for GI opportunities and reporting annually would be a significant effort
  - Feasibility requirements for incorporating GI into CIP projects need to be defined
  - Concern about disagreement with WB staff about “missed opportunities”
  - Maintenance costs still a concern
- **Next Steps** – Work group to provide proposed language and coordinate with POC Work Group on load reduction requirements/goals



# Update from MRP 2.0 POCs Workgroup



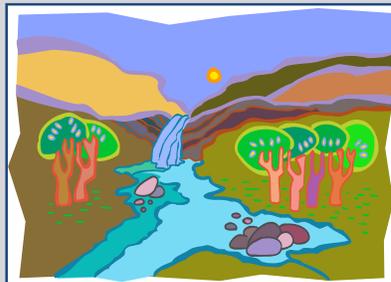
**Jon Konnan**  
**EOA, Inc. / SMCWPPP**  
**March 5, 2015**



## Presentation Outline

### MRP 2.0 - PCB & Mercury TMDL Implementation

1. Areas of General Agreement
2. Priority Issues and Next Steps



## Areas of General Agreement

- Because of TMDL we have to address load reductions quantitatively (timing?).
- Find and abate sources as possible in short-term.
- Green infrastructure – disconnect imperviousness, multiple benefits leading to various funding opportunities (timing?).
- Look for PCBs in sealants in roadway and storm drains infrastructure.



## Priority Issues and Next Steps

- **Issue – Approach to Compliance**
  - Admin draft approach: load reduction requirement now, develop accounting system later.
  - Permittees: need clear and feasible pathway to compliance.
  - Propose alternative BMP program-based approach, especially GI, source ID and maybe demo/reno permits?
  - Action Levels?
- **Next Steps**
  - Another workgroup meeting currently scheduled for Tuesday March 10.
  - BASMAA working on counter proposal (i.e., permit language framework) to administrative draft.
  - Accelerate efforts on accounting– next slide.



## Priority Issues and Next Steps

### ■ Issue – Accounting

- Need load reduction benefits associated with MRP 2.0 requirements now.
- Sparse data, high uncertainty - reduce over time.
- Need to agree upon methods, underlying assumptions, what available data tell us.

### ■ Next Steps

- BASMAA has ramped up efforts to develop preliminary accounting methods.
- BASMAA to work with RWB staff soon.



## Priority Issues and Next Steps

### ■ Issue – Demo/Reno Permits

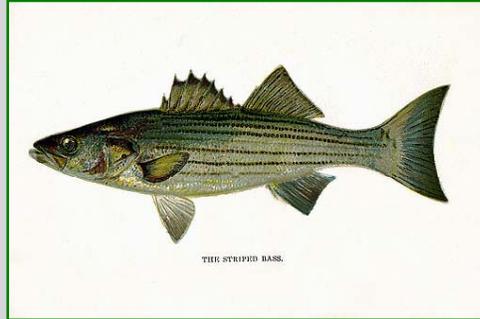
- A lot of PCBs in certain buildings
- Unknown how much getting into storm drains during demolition/renovation.
- Admin draft prescribes program to address via demolition/renovation permits.
- Many issues: outreach, guidance, role of munis vs. RWB vs. EPA, which buildings, phasing-in, etc.
- Tack on to BAAQMD asbestos/lead permits?

### ■ Next Steps

- BASMAA evaluating feasibility.



# Questions?



THE STRIPPED BASS.



## Update from MRP 2.0 Trash Workgroup

*Areas of Agreement, Priority Issues and Next Steps for Provision C.10*



Chris Sommers  
BASMAA Trash Committee Chair

## Provision C.10 - Areas of Agreement

- \* Establish clear path to compliance to achieving load reduction goals in permit (e.g., 70%)
- \* Allow for accounting of progress towards achieving low trash generation
- \* Required level of implementation for creek and shoreline hot spot cleanups and full trash capture systems remains at MRP 1.0 levels

## High Priority Issues Remaining

- \* **Trash Reduction Compliance Milestones**
  - \* 2016, 2017, 2019 during 5-year permit cycle
- \* **Trash Generation Area Management**
  - \* Generation Rates – specific rates vs. ranges
  - \* Manner/authority by which Permittees address trash from existing private lands with a private connection to MS4
- \* **Demonstration of Trash Reduction Outcomes**
  - \* Load reduction value for:
    - \* Source control actions (e.g., single use plastic bag ordinance)
    - \* Creek and shoreline cleanups
  - \* Use of other information (e.g., results of focused BMP study)

## High Priority Issues Remaining

- \* **Full Capture Systems**
  - \* Lack of linkage between full capture systems and C.3 required facilities
  - \* Minimum full capture system maintenance frequencies
  - \* Record keeping and “certifying”
- \* **Non-Full Capture System Actions**
  - \* Geographical extent of assessments required (% and type of area)
  - \* Demonstration of progress - “in between” visual assessment categories (e.g., B/C)
- \* **Receiving Water Observations**
  - \* Intent of receiving water observations with regard to MS4 compliance determinations

## High Priority Issues Remaining

- \* **Trash Load Reduction Plans**
  - \* Requirement to “include actions to control sources outside the Permittee’s jurisdiction”
- \* **Reporting**
  - \* Level and frequency of reporting

## Next Steps

- \* Permittees/Programs/BASMAA provide recommended revisions to address major issues identified (by March 27)
- \* Meet with Water Board staff to discuss revisions, address high priority issues (early April)

