



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

San Mateo Countywide
Stormwater Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Vallejo
Sanitation and Flood
Control District

February 29, 2008

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 NPDES Permit–Tentative Order

Dear Mr. Wolfe:

The purpose of this correspondence is to submit the Bay Area Stormwater Management Agencies Association's ("BASMAA's") written comments to the Regional Water Board staff's Municipal Regional Stormwater NPDES Permit ("MRP").

As you know, for almost four years representatives of Bay Area municipalities have been meeting and discussing with you and your staff the issuance of a Municipal Regional Permit to regulate urban stormwater runoff from the 77 Phase I MS4s (municipal separate storm sewer systems) in the San Francisco Bay Region. Unfortunately, despite all the resources and efforts expended in this direction, most of our concerns have not been satisfactorily addressed in the MRP as set forth in the Tentative Order. While we have previously provided detailed comments and suggestions on virtually every paragraph in the permit, the following summarizes our major observations and concerns:¹

¹ Additional, more detailed written comments will be submitted by many of the countywide programs and municipalities that are members of the stormwater programs that comprise BASMAA's membership (as well as several of their attorneys) and we incorporate all those comments into these comments by reference. BASMAA also incorporates by reference the following previous BASMAA written comments regarding the MRP:

- February 22, 2006 – Proposed Bay Area Municipal Regional Permit for Phase I MS4s
- March 23, 2006 – Comments on Municipal Regional Permit for Phase I MS4s
- September 22, 2006 – Additional BASMAA comments – Stormwater Subcommittee and Municipal Regional Permit, including attachments (draft performance standards tables and draft provision language)
- November 8, 2006 – Municipal Regional Permit (MRP) – Regional Water Board Working Draft (revised version issued October 16, 2006)
- December 7, 2006 – Municipal Regional Permit (MRP) – Regional Water Board permit development process
- July 13, 2007 – Municipal Regional Permit (MRP) – Administrative Draft
- August 2, 2007 – Administrative Draft mark-up based on discussions with Regional Water Board staff
- December 20, 2007 – Municipal Regional Permit – Issuance of Tentative Order Formal Request for Time Extension

Bay Area

Stormwater Management

Agencies Association

1515 Clay Street

Suite 1400

Oakland, CA 94612

510.622.2326

www.basmaa.org

The local stormwater quality agencies and the Regional Water Board have shared objectives

The stated objectives of the six Phase I stormwater programs in the San Francisco Bay Area are very similar to the mission of the Water Board. In general, the objective of the stormwater quality agencies is the protection of water quality and the reduction of stormwater pollution.

Over a 15+ year period, Bay Area stormwater quality agencies have a track record of innovation, leadership, and excellence

Bay Area stormwater quality agencies have long been recognized as national leaders and innovators in stormwater quality management. Attached are a partial list of our innovative projects and programs, as well as a list of state and national awards made to BASMAA stormwater quality agencies.

Our stormwater programs have relatively limited budgets and face significant procedural and political restrictions to increasing budgets to address new permit requirements

Despite our strong commitment to improving stormwater and receiving water quality, and all of our accomplishments and success, our local government stormwater management agencies face very real and serious fiscal challenges. Existing law, established by Proposition 218 in 1996, requires local voter approval of certain fees. Proposition 218 partially exempts certain types of fees, such as those for water, wastewater, and refuse collection, but not stormwater-specific fees, from the voter approval requirements of Proposition 218.

Over the last 15+ years the requirements and scope of the stormwater quality program have increased significantly from simply developing stormwater management programs as envisioned in USEPA's regulations. These increased requirements have significantly increased the cost of compliance for cities and counties. And yet, many local governments have reached the maximum funding levels approved for funding their stormwater management programs and Proposition 218 and other factors severely constrain local governments' ability to fund at higher than current levels.²

We need a smart permit – one that is cost-effective, based on a real prioritization of objectives/new requirements, reflects a phased approach to addressing them in the next five years and across several future permit terms, and provides the biggest environmental benefit-for-the-buck

² Over the last five years, there have been three attempts to pass State legislation (ACA 10, ACA 13, and SCA 12) that would allow the State to place before California voters for approval a State Constitutional Amendment on the ballot. To-date, none of the three legislative attempts have been successful in moving the bills out of their house of origin (Assembly or Senate), let alone to a full vote of the Legislature, to potential approval by the Governor, and to a vote of the people. Thus, legislative/voter relief cannot be considered a feasible alternative at this time. In addition, while we appreciate the efforts of the Water Board staff to help seek funding for stormwater, including grant funds, those funds, when received are small and short-lived when compared to the very significant and long-term capital and operations and maintenance expenditures necessary to address the plethora of requirements that have been included in the Tentative Order.

As BASMAA has been identifying for almost four years, due to fiscal constraints and competing local needs (such as police and fire protection services), there is now a **critical** need to both prioritize and phase municipal stormwater program actions so the most important issues and legal mandates (including TMDLs adopted by the Regional Water Board) are addressed. That is why in September of 2006, we submitted to the Regional Water Board detailed suggested Performance Standards and Provisions reflecting the maximum of what all 77 Bay Area municipalities could afford to do over the next five years to better manage stormwater and address the highest priority water quality issues. (Another copy of those detailed proposals is attached, and we request that they be reevaluated as part of the public comment process on the Tentative Order, with explanations on an item by item basis for why each of our specific suggestions have not been or will not, in a revised Tentative Order, be adopted.)

We understand full well that it is the State's responsibility to write the permit. But the Regional Water Board has wide discretion in determining what goes into a municipal stormwater permit beyond USEPA's minimum requirements. Given the similarities of the permittee and Water Board objectives, we have made numerous suggestions through numerous presentations and submissions (including the September 2006 one referenced above which we are attaching) about how that discretion can be exercised consistent with our common goals and local revenue constraints, but, to date, have been very disappointed that the MRP Tentative Order reflects so little of our experience and input.

As a result, rather than having a smart permit – one that is prioritized on the most cost-effective actions to protect stormwater and receiving water quality, and phased to deal with the fiscal realities of local government funding, we have a 400 page tome, the nexus of many parts of which to water quality is questionable. Additionally, the significant increase in the administrative tasks, including record keeping and reporting, proposed in the MRP Tentative Order are daunting from a cost and staffing perspective and again, have little impact on water quality. One of the messages the MRP Tentative Order delivers is that it is more important that local stormwater quality management agencies spend more time and resources on record keeping and reporting than on improving receiving water quality.

Examples of several of the new permit requirements that will require a significant expenditure of resources and could be modified to allow flexibility and phasing-in are noted below:

- **Water Quality Monitoring (Provision C.8)**

Monitoring requirements in the MRP Tentative Order provide permittees with the option of participating in a regional monitoring collaborative (RMC). The RMC would be developed during the first year of the permit, with water quality monitoring beginning in year two. Based on the requirements presented in Provision C.8 of the MRP Tentative Order, annual monitoring costs beginning in year two of the permit are in excess of \$5 million dollars for all municipalities subject to the Tentative Order.

- **PCB and Mercury Controls (Provisions C.11 and C.12)**

Requirements presented in Provisions C.11 (mercury) and C.12 (PCBs) are very similar. It is BASMAA's understanding that PCBs are the primary focus, with mercury being addressed to a lesser extent, and in concert with PCBs as appropriate. Based on the requirements presented in Provision C.12 (PCBs) and C.11 of the MRP Tentative Order, average annual costs to all countywide stormwater programs are in excess of \$1 million. Additionally, average annual costs for complying with Provision C.11 (mercury) are roughly \$375,000. Total costs to countywide stormwater programs for mercury and PCBs together during the entire 5 year permit term are roughly \$5.3 million. These costs do not include capital costs of retrofitting pump stations, diverting stormwater to POTWs, or abating properties or public right-of-ways, which are likely to be 1-2 orders of magnitude higher than these estimates.

- **Trash Reduction C.10**

The proposed trash requirements would require significant public resources to implement with an unknown benefit to water quality. Preliminary capital costs for BASMAA member agencies to implement "full capture devices" in 5% of their urbanized area are estimated to be between \$8.6 and \$265 million (average \$128 million). Additionally, annual (ongoing) operation and maintenance costs for these devices are estimated to be between \$5.3 and \$21.5 million (average \$13.4 million). Including "enhanced trash management measures" in an additional 5% of urbanized areas would likely significantly increase these costs. Based on these significant anticipated costs, unless the Water Board ties the application of the MRP Tentative Order's (full capture device) requirements to co-permittee's receipt of funding from the State, BASMAA requests that the Tentative Order be modified to allow flexibility in addressing trash and litter controls problems so that cost-effective solutions may be implemented that are tailored to solving particular problems.

The Tentative Order's Version of an MRP does not suit the San Francisco Bay Area

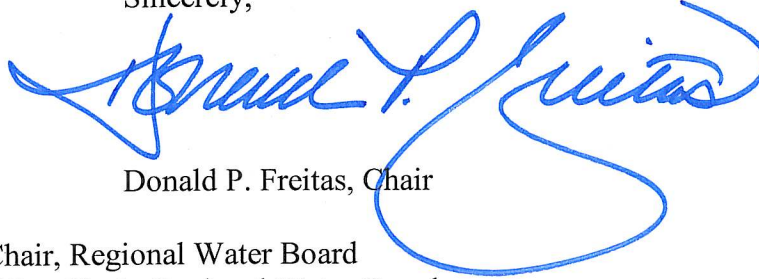
The MRP Tentative Order does not reflect the following facts or reality.

- The local stormwater quality agencies and the Regional Water Board have similar objectives and have previously identified water quality priorities through the adoption of TMDLs and related implementation plans.
- The local agencies have a track record of innovation, leadership, and excellence in developing and implementing municipal stormwater management programs.
- The local agencies have limited budgets, are facing a predicted long-term economic downturn, and have few, if any options for significantly increasing revenues that can be devoted to stormwater agencies. The State of California is also facing significant fiscal difficulties.

The process of developing a municipal regional permit reflects a worthy objective but has spun out of control. We need the Regional Water Board to proactively and candidly direct you and your deputies to work with us at an executive level in the difficult work of prioritizing and phasing the actions that realistically can be implemented in the next five years.

If you have any questions regarding these comments, please contact me.

Sincerely,



Donald P. Freitas, Chair

cc: John Muller, Chair, Regional Water Board
Terry Young, Vice-Chair, Regional Water Board
Regional Water Board Members
Tom Mumley, Assistant Executive Officer, Regional Water Board
Shin-Roei Lee, Chief – South Bay Watershed Management Division, Regional Water Board
Dale Bowyer, Section Leader – Southeast Bay Section, Regional Water Board
BASMAA Executive Board

Attachments:

Partial List of Innovative Projects and Programs

List of Awards

Estimating Costs of Trash Full Capture Devices in the San Francisco Bay Area - *Evaluation of Draft Municipal Regional Stormwater NPDES Permit (MRP) "Trash" Requirements*

September 22, 2006 – Additional BASMAA comments – Stormwater Subcommittee and Municipal Regional Permit, including attachments (draft performance standards tables and draft provision language)

Partial List of Innovative Projects and Programs

- BASMAA (1993 -) – To this day, BASMAA is a unique organization. One developed with the express purpose of promoting partnerships among government agencies and being focused on regional challenges and opportunities to improving the quality of stormwater that flows to our local creeks, San Francisco Bay and Delta, and the Ocean.
- Recognized Surface Cleaner program (1996 -) – A first-of-its-kind program developed in partnership with industry to reduce pollution from outdoor cleaning activities.
- Regional Media Relations program (1996 -) – BASMAA and BACWA have partnered for over 10 years on this program to educate the public about water pollution by proactively working with the local media.
- Construction site inspection / education program (1990s) – BASMAA partnered with the Regional Water Board in the development and implementation of this first-of-its-kind program in California.
- Regional Advertising Campaigns (1996 -) – Since FY 95/96, BASMAA has run three multi-year regional advertising campaigns (RACs). The current fourth multi-year campaign is following up and expanding on the RAC III project, including using trash/litter as a kind of ‘poster pollutant.’ The local stormwater quality agencies complement the regional project by using the same messages and creative materials in various local advertising and public outreach efforts.
- Brake Pad Partnership (1996 -) – “Extended Producer Responsibility” and “Green Chemistry” are the latest manifestations of the concept behind the Brake Pad Partnership, which started in Palo Alto and quickly expanded to a Bay Area-wide effort, that has now gone statewide.
- *Start at the Source* (forerunner to LID) manual, videos, guidebooks (1997, 1999) – BASMAA and the local stormwater quality agencies are national leaders on what is now usually referred to as “LID” (low impact development), having developed two design guidance manuals, instructional videos, and several companion manuals.
- *Our Water, Our World* Program (1998 -) – Another first-of-its kind program, developed in partnership with the Bay Area Pollution Prevention Group and wastewater agencies. This point-of-purchase program has since expanded statewide and regularly received national attention.
- Hydromodification management (2001) – BASMAA stormwater quality agencies were the first in the state to address hydromodification; conducting extensive research; developing models, guidance, policy, and procedures; and implementing control programs that are viewed as models by the rest of the stormwater agencies in the state.

List of Awards

Year	Award Name	Recipient	Awarded By
2007	National Environmental Excellence Award- Education Excellence – Watershed Watch	Santa Clara Urban Runoff Pollution Prevention Program (SCVURPPP)	 National Association of Environmental Professionals
2007	Outstanding Stormwater News, Information, Outreach and Media – Plastic Bag Outreach/Coastal Cleanup Day	San Mateo Countywide Water Pollution Prevention Program	
2007	National Clean Water Act Recognition Award- First Place – Watershed Improvement Program	City of Oakland (member of the Alameda stormwater program)	
2006	National Clean Water Act Recognition Award- First Place – Outstanding Municipal Storm Water Management	Santa Clara Urban Runoff Pollution Prevention Program (SCVURPPP)	
2006	Excellence In Communication Award – Third Place – Improving Water Quality	Santa Clara Urban Runoff Pollution Prevention Program (SCVURPPP)	 National Association of Flood and Stormwater Management Agencies
2005	IPM Innovator Award	Santa Clara County (member of the Santa Clara stormwater program)	
2005	Pesticide Environmental Stewardship Program Award	BASMAA Members ¹	 USEPA

¹ Alameda County, Contra Costa County, Fairfield-Suisun, Marin County, San Mateo County, and Santa Clara Valley stormwater programs; Sonoma County Water Agency and the Vallejo Sanitation and Flood Control District.

2003	Outstanding Comprehensive Conservation and Management Plan (CCMP) Implementation Project– Regional Advertising, <i>Our Watershed Our World</i>	BASMAA	 Friends of the San Francisco Estuary
2003	Outstanding Comprehensive Conservation and Management Plan (CCMP) Implementation Project – <i>Watershed Watch</i>	Santa Clara Urban Runoff Pollution Prevention Program (SCVURPPP)	 Friends of the San Francisco Estuary
2000	Telly Award –Less –Toxic Pest Control Advertisement (<i>When Ants Invade...</i>)	BASMAA	 The Telly Awards
2000	Pest Management Alternatives Pioneer Award – <i>Our Water, Our World</i>	BASMAA	 Californians for Pesticide Reform (CPR)
2001	Gold Aurora Award – <i>Start at the Source</i> video	BASMAA	 Aurora Awards
1999	Outstanding CCMP Implementation Project – <i>Start at the Source</i> manual	BASMAA	 Friends of the San Francisco Estuary
1997	Professional Merit Award – <i>Start at the Source</i> manual	BASMAA	 American Society of Landscape Architects (ASLA)
1994	National Clean Water Act Recognition Award- Second Place – Outstanding Municipal Storm Water Management	Alameda County Urban Runoff Control Program	
1993	National Clean Water Act Recognition Award- First Place – Outstanding Municipal Storm Water Management	Santa Clara Urban Runoff Pollution Prevention Program (SCVURPPP)	

BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION

Estimating Costs of Trash Full Capture Devices in the San Francisco Bay Area

Evaluation of Draft Municipal Regional Stormwater NPDES Permit (MRP) "Trash" Requirements

February 29, 2008

Introduction

On December 4, 2007, the San Francisco Bay Regional Water Quality Control Board (Water Board) released a Draft Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Tentative Order (Draft TO)¹ for public comment. The Draft TO proposes requirements on Bay Area municipalities that are designed to reduce pollutants in municipal stormwater and impacts on beneficial uses in receiving waters. Based on the draft requirements described in Provision C.10 (Trash Reduction), permitted municipalities will be required to:

"Identify high trash and litter (trash) impact catchments totaling at least 10% of the Urban and Suburban Land Area within their jurisdictions, which discharge trash and litter to downstream waterways and the Bay, and implement trash control actions to reduce the impacts of trash on the beneficial uses of receiving waters."

The Draft TO defines "Urban and Suburban Land Area" as the entire land area of a Permittee's jurisdiction, less natural resources protection areas, golf courses, cemeteries, and estate residential development areas. The two trash control actions required by the Draft TO are 1) enhanced trash management controls; and, 2) trash full capture devices. Trash full capture devices will need to be implemented in a minimum of 5% of the urban and suburban land area.

This memorandum is intended to provide a preliminary evaluation of costs associated with the installation and operation/maintenance of full trash capture devices by BASMAA² member agencies, as required by Provision C.10.b.i(2) in the Draft TO. Specifically, this evaluation is focused on providing preliminary answers to the following questions:

1. What is the estimated area of land in the Bay Area that would require the implementation of trash full capture devices?
2. How many trash full capture devices would need to be implemented?
3. What are the ranges and average capital and ongoing costs associated with implementing and maintaining full capture devices?

This memorandum assesses only the minimum capital costs for installation and labor for annual operations and maintenance. Additional capital costs that can be expected including development of installation design specifications, planning and public notification, and permitting, Costs of implementing other requirements in Provision C.10, including enhanced trash management controls (e.g., increasing street sweeping frequency, storm drain cleaning, public education), conducting creek trash assessments, reporting the removal performance of the devices, and developing a long-term plan for trash impact abatement are not included in these estimates.

¹ The Draft TO was amended on December 14, 2007 to incorporate minor changes described in an Errata Sheet released on the same date.

² BASMAA includes the Alameda Countywide Clean Water Program (ACCWP), Contra Costa Clean Water Program (CCCWP), Fairfield-Suisun Urban Runoff Management Program (FSURMP), Marin County Stormwater Pollution Prevention Program (MCSTOPPP), San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), Sonoma County Water Agency, and Vallejo Sanitation and Flood Control District.

Methodology

Estimating the Number of Full Capture Devices Needed

Trash full capture devices are defined as any device or series of devices that trap all particles retained by a 5mm mesh screen and has a hydraulic design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour, storm in the storm drainage catchment area draining to the device(s). This definition is used by the Los Angeles Regional Water Quality Control Board, which to-date has certified the following devices as “full capture”:

1. Catch basin inserts developed by the City of Glendale, a combination of brush and aluminum mesh;
2. Vertical trash capture screen inserts developed by Advanced Solutions, installed within catch basins;
3. Horizontal trash capture screen inserts developed by Advanced Solutions, installed within catch basins;
4. End-of-pipe trash nets developed by Fresh Creek Technologies, Inc;
5. Linear radial gross solids removal device configuration 1 (LR1 I-10) developed by Caltrans; and,
6. Inclined screen gross solids removal device configuration 1 (IS1 SR-170) developed by Caltrans.

Additionally, other types of stormwater treatment devices (i.e., hydrodynamic separators) likely meet the “full capture” designation, although they have not been formally certified. Floating trash capture booms and sea curtains do not meet the full trash capture device definition, but as described in the Draft TO, the Water Board assumes they are effective for trash removal³.

Trash capture devices range significantly in the size of the land area treated, capital costs and maintenance costs. Therefore, multiple types of devices that meet the “full capture” definition were used in this analysis to develop ranges in costs (Table 1). For treatment areas of less than 5 acres, StormTek™ catch basin inserts were used, and for the treatment areas between 10 and 100 acres, Continuous Deflection Separation (CDS) units were used.

Table 1. Trash full capture devices used in cost analysis.

Trash Capture Device	Description	Average Area Treated (Acres)
Catch Basin Inserts	Catch basin inserts are baskets, trays, bags, or screens placed inside the inlet or at the outlet of a catch basin. A wide variety of designs exist, mostly in the form of inlet devices. To-date, the only type of catch basin inserts to receive “full capture” designation are the vertical and horizontal trash capture screen inserts (i.e., StormTek devices) developed by Advanced Solutions.	<1 to 5
Small Capacity Hydrodynamic Separators (e.g., CDS units)	Hydrodynamic separators a permanent structural treatment controls that divert the incoming flow of stormwater into separation and containment chambers where solids (e.g., trash) remain in continuous motion until removed. Small hydrodynamic separators are defined as those with a capacity of 1 to 2 cfs and can treat drainage from an area of roughly 10 acres.	10
Large Capacity Hydrodynamic Separators (e.g., CDS units)	Large hydrodynamic separators are defined as those with a capacity of 18-20 cfs and can treat drainage from an area of roughly 100 acres.	100

³ Booms and sea curtains are credited with controlling ¼ of the catchment land area tributary.

Urban and Suburban Land Area

To estimate the total number of trash devices needed to “treat” 5% of the urban and suburban land area subject to the Provision C.10, “urban and suburban land area” first had to be defined using a Geographical Information System (GIS) approach. Specifically, land uses were defined for municipalities in the counties of San Mateo, Santa Clara, Alameda, Contra Costa, and the cities of Fairfield, Suisun and Vallejo. Available land use data developed by the Association of Bay Area Governments (ABAG 1996) was used for the analysis. Land uses are defined in this data set using the United States Geological Survey’s (USGS) land use classification system (Anderson et al. 1976) and are believed to be the most accurate representation of land uses in the Bay Area. The USGS’s system is based on a nested hierarchy and includes four levels of numerical subdivision: single-digit classes describing general land uses, and 2,3, and 4-digit classes describing increasing resolution of land use information. For the purpose of identifying urban land uses relevant for this analysis, all land use codes beginning with the numeral 1, describing “urban” land use categories, were examined.

The total estimated urban and suburban land area within the boundaries of each Bay Area stormwater program, and the total area where trash full capture treatment would be required are presented in Table 2. Land use codes and associated descriptions that were included in this analysis (as well as those that were excluded) are listed in Appendix A.

Table 2. Urban and suburban land area within the Bay Area.

Program	Total Urban/Suburban Land Area (Acres)	5% Urban Land Area (Acres)
SCVURPPP	169,288	8,464
ACCWP	138,373	6,919
CCCWP	140,803	7,040
SMCWPPP	55,358	2,768
FSURMP	13,089	654
VALLEJO	12,801	640
Total	529,712	26,486

ACCWP - Alameda Countywide Clean Water Program

CCCWP - Contra Costa Clean Water Program

FSURMP - Fairfield-Suisun Urban Runoff Management Program

SMCWPPP - San Mateo Countywide Water Pollution Prevention Program

SCVURPPP - Santa Clara Valley Urban Runoff Pollution Prevention Program

Vallejo – City of Vallejo

Catch Basin Inserts

The estimated numbers of storm drain inlets currently located in each Bay Area municipality were obtained by reviewing the most currently available urban runoff (i.e., stormwater) management plans and/or annual reports. The estimated total number of inlets is listed in Table 3.

Catch basin insets include baskets, trays bags or screens place inside the inlet or at the outlet of a catch basin. To estimate the number of catch basin inserts needed to treat 5% of the urban and suburban area subject to the Draft TO, the following formula was used:

$$CB_n = (CB_N/UA) * (0.05UA)$$

where:

CB_n	=	Number of catch basin inserts needed to “treat” 5% of defined urban area
CB_N	=	Total number of catch basins in defined urban area
UA	=	Defined urban area
0.05	=	5%

The estimated total numbers of catch basin inserts needed to treat 5% of the urban and suburban land area within stormwater program boundaries are included in Table 3.

Table 3. Estimated number storm drains inlets requiring full capture treatment devices.

Program	Total # of Storm Drains	# of Catch Basin Inserts Needed
SCVURPPP	52,458	2,623
ACCWP	46,217	2,311
CCCWP	45,237	2,262
SMCWPPP	17,327	866
FSURMP	6,000	300
VALLEJO	5,000	250
Total	172,239	8,612

Hydrodynamic Separators

Hydrodynamic separators a permanent structural treatment controls that divert the incoming flow of stormwater into separation and containment chambers where solids (e.g., trash) remain in continuous motion until removed. Hydrodynamic separators are manufactured in a range of sizes that can treat between 10 and 100 acres on average. To estimate the number of small (10 acres) and large (100 acres) hydrodynamic separators needed to treat 5% of the urban and suburban area subject to the Draft TO, the following formula was used:

$$VS_n = (0.05UA) / (VS_{AveArea})$$

where:

VS_n	=	Number of hydrodynamic separators needed to "treat" 5% of defined urban area
$VS_{AveArea}$	=	Average area treated by a hydrodynamic separator
UA	=	Defined urban area
0.05	=	5%

The estimated total numbers of small and large hydrodynamic separators needed to treat 5% of the urban and suburban land area within stormwater program boundaries are included in Table 4.

Table 4. Estimated number small and large hydrodynamic separators need to treat 5% of the urban and suburban land area within stormwater program boundaries.

Program	# of Small Capacity Hydrodynamic Separators	# of Large Capacity Hydrodynamic Separators
SCVURPPP	846	85
ACCWP	692	69
CCCWP	704	70
SMCWPPP	277	28
FSURMP	65	7
VALLEJO	64	6
Total	2,649	265

Estimating Capital and Ongoing Costs

Catch Basin Inserts

The following formulas were used to calculate capital and ongoing costs associated with implementing and annual costs for maintaining catch basin inserts. Input parameters and references are provided in Table 5.

Capital Costs: $CB_{TotCapCost} = CB_n * CB_{CapCostPerUnit}$

Annual Maintenance Costs: $CB_{AnlMaintCost} = CB_n * CB_{AnlMaintCostPerUnit}$

where:

$CB_{TotCapCost}$	=	Total capital costs for all catch basin inserts needed to “treat 5% of defined urban area
$CB_{CapCostPerUnit}$	=	Capital costs for each catch basin insert
$CB_{AnlMaintCost}$	=	Annual maintenance and operation costs for all catch basin inserts needed to “treat 5% of defined urban area
$CB_{AnlMaintCostPerUnit}$	=	Annual maintenance and operation cost for each catch basin insert

Table 5. Input parameters used to calculate capital and ongoing costs associated with implementing and maintaining catch basin inserts.

Symbol	Description	Input Value	Reference
$CB_{CapCostPerUnit}$	Capital costs for each catch basin insert. Includes material and installation costs.	\$1000	Advanced Solutions (2008)
$CB_{AnlMaintCostPerUnit}$	Annual maintenance and operation costs for each catch basin insert.	\$2500	City of Los Angeles (2002)

Hydrodynamic Separators

The following formulas were used to calculate capital and ongoing costs associated with implementing and annual costs for maintaining small and large hydrodynamic separators. Input parameters and references are provided in Table 6.

Capital Costs: $VS_{TotCapCost} = VS_n * VS_{CapCostPerUnit}$

Annual Maintenance Costs: $VS_{AnlMaintCost} = VS_n * VS_{AnlMaintCostPerUnit}$

where:

$VS_{TotCapCost}$	=	Total capital costs for all hydrodynamic separators needed to “treat 5% of defined urban area
$VS_{CapCostPerUnit}$	=	Capital costs for each hydrodynamic separator
$VS_{AnlMaintCost}$	=	Annual maintenance and operation costs for all hydrodynamic separators needed to “treat 5% of defined urban area
$VS_{AnlMaintCostPerUnit}$	=	Annual maintenance and operation cost for each hydrodynamic separator
VS_n	=	Number of hydrodynamic separators needed to “treat” 5% of defined urban area

Table 6. Input parameters used to calculate capital and ongoing costs associated with implementing and maintaining hydrodynamic separators.

Symbol	Description	Value	Reference
$VS_{CapCostPerUnit}$	Capital costs for each hydrodynamic separator. Includes construction, material and installation costs.	Small – \$100,000 Large - \$420,000	City of Oakland (2007)
$VS_{AnlMaintCostPerUnit}$	Annual maintenance and operation costs for each hydrodynamic separator.	Small – \$5,000 Large - \$20,000	CalTrans (1999) City of Los Angeles (2002)

Results Summary

Preliminary cost estimates for implementing and maintaining trash full capture devices in 5% of the urban and suburban land are within Bay Area municipalities subject to the Draft TO are provided in Table 7. A brief summary of capital and ongoing cost estimates and recommendations for improving costs estimates are provided. It should be noted that there is a wide range in the documented capital costs for the various approaches, and there will also be very site-specific factors that affect capital costs. Therefore, these cost estimates, as presented, likely represent a minimum cost under best case scenarios requiring little planning, design, permitting or other added installation costs.

Capital cost estimates for implementing full capture devices per requirements in Provision C.10 of the Draft TO range between \$8.6 and \$264.9 million (average \$128.2 million). The substantial range in costs is attributable to the range in price for each device and the construction costs applicable to hydrodynamic separators. For example, roughly 2,600 catch basin inserts or 85 large capacity hydrodynamic separators would be needed to treat 5% of the urban/suburban area in the Santa Clara Valley. Each catch basin insert is roughly \$1,000 to implement, while large capacity hydrodynamic separators are roughly \$420,000 to implement. Therefore, with regard to capital costs, the more efficient way to treat urban/suburban land area would be to implement catch basin inserts. In contrast, ongoing maintenance and operation costs have an inverse relationship to capital costs. Because of the large number of catch basin inserts that would need to be maintained, annual maintenance costs are much high for these devices when compared to large capacity hydrodynamic separators. Annual maintenance costs for full capture devices in 5% of the urban and suburban land are within Bay Area municipalities subject to the Draft TO Bay Area range from \$5.3 to \$21.5 million (average \$13.4 million per year).

It is important to recognize that cost estimates provided in this memorandum are only as good as the input parameters available. There is a high level of confidence in some of input parameters, however, many a have relatively high level of uncertainty (Table 8). Future analyses of costs should consider reducing the uncertainty in these parameters, if possible.

Table 7. Estimated capital and ongoing annual costs for implementing and maintaining trash full capture devices in 5% of the urban and suburban land area in municipalities subject to the requirements in the Draft TO.

Program	Catch Basin Inserts		Small Capacity Hydrodynamic Separators		Large Capacity Hydrodynamic Separators		Average Costs	
	Capital Costs	Annual Maintenance Costs	Capital Costs	Annual Maintenance Costs	Capital Costs	Annual Maintenance Costs	Capital Costs	Annual Maintenance Costs
SCVURPPP	2,622,900	6,557,250	84,643,789	4,232,189	35,550,391	1,692,876	40,939,027	4,160,772
ACCWP	2,310,850	5,777,125	69,186,313	3,459,316	29,058,251	1,383,726	33,518,471	3,540,056
CCCWP	2,261,850	5,654,625	70,401,443	3,520,072	29,568,606	1,408,029	34,077,300	3,527,575
SMCWPPP	866,350	2,165,875	27,679,121	1,383,956	11,625,231	553,582	13,390,234	1,367,804
FSURMP	300,000	750,000	6,544,527	327,226	2,748,701	130,891	3,197,743	402,706
VALLEJO	250,000	625,000	6,400,667	320,033	2,688,280	128,013	3,112,982	357,682
Total	8,611,950	21,529,875	264,855,858	13,242,793	111,239,460	5,297,117	128,235,757	13,356,595
<i>Average per Acre</i>	<i>\$325</i>	<i>\$813</i>	<i>\$10,000</i>	<i>\$500</i>	<i>\$4,200</i>	<i>\$200</i>	<i>\$4,842</i>	<i>\$504</i>

Table 8. Input parameters and relative level of uncertainty.

Input Parameter	Challenge	Level of Uncertainty
Urban and Suburban Area	Used most readily available regional dataset which was created in 1995. May underestimate the total acreage of current urban and suburban land use in the Bay Area due to urbanization of previous rural areas.	Moderate
Number of Catch Basins Needed	Assumed all catch basins were associated with urban and suburban land area. If some portion of the total number of storm drain inlets are outside of this area, average drainage area to each inlet may be larger and therefore the total number of catch basin inserts needed would be reduced.	Moderate
Number of Hydrodynamic Separators Needed	Estimates assumed that large hydrodynamic separators could be implemented everywhere. Likely is not true due to existing drainage structures. More realistically, a combination of small, medium and large hydrodynamic separators would be used, which would increase annual maintenance costs.	Moderate/High
Catch Basin Inserts - Capital Costs	Capital cost estimates are based on the experience of Bay Area municipalities. Cost of steel may increase costs in the future.	Low
Catch Basin Inserts - Ongoing Costs	Maintenance and operation costs are based on limited information from the City of Los Angeles. Costs in the Bay Area may be significantly different.	Moderate
Hydrodynamic Separators – Capital Costs	Capital costs for hydrodynamic separators are based City of Oakland experience. Costs are average and will likely fluctuate heavily due to site specific conditions (e.g., construction costs associated with moving existing utility lines).	Moderate/High
Hydrodynamic Separators – Ongoing Costs	Operation and maintenance costs are based on experience by the City of Los Angeles and CalTrans. O&M costs can vary widely due to site specific conditions and the volume of trash intercepted. Costs presented are average costs.	Moderate

References

Advanced Solutions. 2008. StormTek device costs per unit for the City of San Jose and City of Sunnyvale, CA. January.

Anderson, J.R., E. Hardy, J. Roach and R. Witmer. 1976. *A Land Use and Land Cover Classification System for Use With Remote Sensor Data*. United States Geological Survey. Washington D.C.

Association of Bay Area Governments (ABAG). 1996. *Existing Land Use in 1995: Data for Bay Area Counties and Cities*. #P96007EQK. Oakland, CA.

California Department of Transportation (CalTrans). 2004. *BMP Retrofit Pilot Program*. Final Report. CTSW-RT-01–050 Division of Environmental Analysis. January.

City of Los Angeles. 2002. *High Trash-Generating Areas and Control Measures*. Department of Public Works, Bureau of Sanitation, Watershed Protection Division. January.
http://www.lacity.org/SAN/wpd/Siteorg/download/pdfs/reports/Trash_Gen_Study.pdf.

City of Oakland. 2007. *Existing Municipal Programs to Reduce Trash in Waters*. Presentation by Leslie Estes (City of Oakland Stormwater Program Manager) at the 2007 State of the Estuary Conference. October 18th. Oakland

Appendix A

Land Use Categories Used to Define “Urban and Suburban Areas”

Urban and Built-Up Land Use Classification Categories			Category Description	Included in ABAG (1995)	Included in Analysis	Justification for Exclusion in Trash Report
Level II	Level III	Level IV				
11- Residential			Houses, apartments, garages, sheds, lawn and streets can be considered a basis for gross, rather than net, residential acres. Any area of 2.5 acre (one hectare) or more where dwelling units predominate is mapped as residential.			
	111- 2 to 5 acre lots			X		Draft TO includes exemption for "estate residential developments".
	112 – 1/3 to 1 acre lots			X	X	
	113 - <1/3 acre lots			X	X	
	114 – Mobile Home Parks			X	X	
12- Commercial and Services			Retail commercial, military, and educational.	X	X	
	121 – Retail and Wholesale		Central business districts, shopping centers, commercial strip development, auto salvage operations and motels.	X	X	
	122 – Commercial Outdoor Recreation		Intensive areas of recreation such as golf course club houses, tennis courts, amusement parks and drive-in theaters.	X	X	
	123- Education		All public and private schools, pre-schools, subsidiary land use (parking, administrative structures, recreation areas and dormitories) seminaries and novitiates. Some churches and synagogues may be included in this category in San Mateo County.	X	X	
		1231-Elementary and Secondary Schools		X	X	
		1232- Colleges and Universities.		X	X	
		1233 – Stadium		X	X	
	124 – Hospitals, Rehabilitation Centers and Other Public Facilities		Hospitals, medical centers, mental health centers, sanitariums, and convalescent centers.			
		1241 – Hospital Trauma Centers		X	X	
		1242 – Community Hospitals		X	X	
		1243 – Medical Long-Term Care Facilities		X	X	
		1244 – Medical Clinics		X	X	
		1245 – Home Health Care Facilities		X	X	
		1246 – Out-Patient Surgery Centers		X	X	
		1247 – State Prisons		X	X	
		1248 – State Mental Health and Developmentally Disabled Facilities		X	X	
		1249 – Psychiatric Facilities		X	X	
	125 – Military Installations		Armories, national guard centers, firing ranges, barracks and arsenals.			
		1251 – Military Residential		X	X	
		1252 – Military Commercial/Services		X	X	
		1253 – General Military Use		X	X	
		1254 – Military Hospital		X	X	
		1255 – Military Communications		X	X	

		1256 – Military Airport		X	X	
		1257 – Military Open Areas		X	X	
		1258 – Military Port		X	X	
	126 – Other Public Institutions and Facilities		Government facilities, libraries, post offices, police and fire stations, city and county government complexes, and state and federal facilities.	X	X	
		1261 – Stadium		X	X	
		1262 – Churches and Synagogues		X	X	
		1263 – Fire Station		X	X	
		1264 – Police Station		X	X	
		1265 – City Hall or County Government Center		X	X	
		1266 – Local Government Emergency Operations Center		X	X	
		1267 – Local Jails or Rehabilitation Centers		X	X	
		1268 – Convention Centers		X	X	
	127 – Research Centers		Major research centers	X	X	
	128 – Offices		Areas of offices or professional centers	X	X	
	129 – Hotels			X	X	
13- Industrial			Subcategories of heavy and light industrial, metal salvage or recycling.	X	X	
	131 – Heavy Industry		Heavy fabrication, making and assembling parts which are in, in themselves, large and heavy, or processing of basic raw materials.	X	X	
	132 – Light Industry		Industrial activities that include the design, assembly, finishing and packaging of products.	X	X	
	133 – Metal Salvage or Recycling		Large-scale recycling of metal	X	X	
14- Transportation, Communication and Utilities				X	X	
	141 – Road Transportation Facilities			X	X	
		1411 – Highways and Interchanges		X		
		1412 – Bus Transit Centers		X	X	
		1413 – Park and Ride Lots		X	X	
		1414 – Truck or Bus Maintenance Yard		X	X	
		1415 – City, County or Utilities Corporation Yard		X	X	
	142 – Rail Transportation Facilities					
		1421 – Rail Passenger Stations		X	X	
		1422 – Rail Yards		X	X	
		1423 – Light Rail Stations				
		1424 – Light Rail Yards				
	143 – Airports		Commercial, Public, and Private Field.			
		1431 – Commercial Airport Passenger Terminal		X	X	
		1432 – Commercial Airport Air Cargo		X	X	

		Facility				
		1433 – Commercial Airport Airline Maintenance		X	X	
		1434 – Commercial Airport Runway		x		
		1435 – Commercial Airport Utilities		X	X	
		1436 – Commercial Airport – Other		X	X	
		1437 – Public (General Aviation) Airfield		X		
		1438 – Private Airfield		X	X	
	144 – Marine Transportation Facilities		Port/dock facilities, warehouses, storage areas, passenger terminals, slips and associated parking areas.	X	X	
		1441 – Commercial Port Passenger Terminal		X	x	
		1442 – Commercial Port Container Terminal		X		Ports not subject to MS4 Permit.
		1443 – Commercial Port Oil and Liquid Bulk Terminal		X		Ports not subject to MS4 Permit.
		1444 – Commercial Port-Other Terminal and Ship Repair		X		Ports not subject to MS4 Permit.
		1445 – Commercial Port Storage Facility or Warehouse		X		Ports not subject to MS4 Permit.
		1446 – Tow Boat (Tug) Facility		X		Ports not subject to MS4 Permit.
		1447 – Ferry Terminal		X	X	
		1448 – Marina		X	X	
	145 – Power Facilities					
		1451 – Electricity, Power Plant		X	X	
		1452 – Electricity, Substation		X	X	
		1453 – Electricity, Other		X	X	
		1454 – Service Center				
		1455 – Building				
		1456 – Natural Gas Facility				
	146 – Municipal Wastewater Facilities					
		1461 – Wastewater Treatment Plant		X	X	
		1462 – Wastewater Pumping Station		X	X	
		1463 – Wastewater Storage		X	X	
	147 – Municipal Water Supply Facilities					
		1471 – Water Treatment (Filtration Plant)		X	X	
		1472 – Water Pumping Station		x	X	
		1473 – Water Storage (covered)		X	X	
		1474 – Water Storage (open)		X	X	
	148 – Communication Facilities					
		1481 – Communications, Network Tower		X	X	
		1482 – Communications, Tower		X	X	
		1483 – Media Communications Facilities		X	X	
15- Mixed Commercial and Industrial Complexes			Areas of mixed commercial and industrial use, as well as areas	x	X	

		of multiple commercial and industrial uses within a single structure, have been placed in this category. Areas of predominantly commercial use of predominantly industrial use are not included, whenever feasible. Mixed residential and commercial areas have been included as part of Category 16. Note that areas of scrap metal recycling area now included in Subcategory 133.			
16- Mixed Residential and Commercial Use		Mixed residential and commercial uses, whether in an area or within a single structure, have been placed in this category. Mixed land use is common in areas of converting from residential to commercial. Also, rural centers often are too small to map separately as commercial or residential.	x	X	
	161 – Transitional (mixed use of land areas)		X	X	
	162 – Mixed Use In Buildings		x	X	
17- Other Urban and Built-Up Land		Areas that have been affected by urban development but with minimal paving and buildings are included in this category.	X	X	
	171 – Extensive Recreation	Athletic fields and playgrounds.	X	X	
		1711 – Golf Courses (the extensive, not the intensive, portion.	X		
		1712 – Racetracks.	X	X	
	172 – Cemeteries	Public, private and military cemeteries included.	X		Draft TO includes exemption for "cemeteries".
	173 – Parks	All leisure, ornamental, zoological and botanical parks are included when the use is apparent. However, areas of extensive tree cover may be classified as forest. Thus, city parks are included in this category, but large parks (such as those operated by the East Bay Regional Park District) are subdivided into forest, grassland, etc.).	X		Draft TO includes exemption for "natural resource protection areas".
	174 – Open Space--Urban	Selected land that has been developed as an urban use but is currently vacant is shown in this category.	X		Draft TO includes exemption for "natural resource protection areas".
	175 – Urban Vacant Land	Underdeveloped open areas and vacant lots slated for urban development. In addition, open areas on the urban-rural boundary are shown in this category. These boundary areas were shown as urban on the USGS LUDA maps, but on ABAG's more detailed compilation have no particular urban land use.	x	x	



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

San Mateo Countywide
Stormwater Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Vallejo
Sanitation and Flood
Control District

September 22, 2006

Margaret Bruce, Chair – Stormwater Subcommittee
Bruce Wolfe, Executive Officer
San Francisco Bay Regional Water Quality Control Board
1515 Clay St., Ste. 1400
Oakland, CA 94612

Subject: Additional BASMAA comments – Stormwater Subcommittee and Municipal Regional Permit

Dear Ms. Bruce and Mr. Wolfe

Thank you for conducting the second Stormwater Subcommittee Workshop on September 8. We found the discussion to be constructive and complementary to the discussion at the first workshop. In response to your offer at the end of the workshop to receive additional comments on the general concepts of urban water quality management and how it relates to specific Board initiatives, such as our pending municipal regional permit (MRP), we submit the attached, which combines:

- Draft performance standards tables for all MRP elements, including the “baseline” municipal stormwater program elements identified in USEPA’s permitting regulations *and* additional elements that address implementation of TMDLs adopted by the Regional Water Board and other previously identified pollutants of concern; and
- Draft “provisions” for the MRP to encompass these elements, address the trial court decision in the prior BayKeeper litigation concerning the current San Mateo and Contra Costa municipal stormwater permits (such as specific monitoring measures), and define the parameters for State-mandated program components on hydromodification and watershed management.

As we have expressed to you on many occasions and in many forms, BASMAA is committed to the development and adoption of a MRP for Phase I stormwater programs in the Bay Area. We offer the attached in that spirit and to expedite the permit development and drafting process, which as you know is now almost 2 ½ years old and has been delayed and changed a number of times.

Bay Area

Stormwater Management

Agencies Association

1515 Clay Street

Suite 1400

Oakland, CA 94612

510.622.2326

www.basmaa.org

With the cessation of the MRP work groups’ efforts last spring, BASMAA Executive Board members worked with their co-permittees to educate them on, as well as review and consider, the final BMP or performance standards tables of the MRP work groups. The result is the attached document that, to a large degree, reflects the discussions within the MRP work groups, as well as moves those discussions forward by resolving; in a way municipalities are likely to be willing to accept, the “thorny issues” that the work groups were unable to resolve.

In summary, BASMAA believes the attached document achieves the following objectives:

- Stormwater Subcommittee Workshops issues – The draft tables and provisions address and resolve a number of the issues raised at the workshops.
- Organization – The 13 performance standards tables are generally organized and formatted the same way, greatly facilitating review and understanding (and ultimately compliance and Regional Water Board oversight).
- Consistency – In addition to a consistent organization and format, the tables and provisions are drafted in a consistent writing style and level of detail, and are cross-referenced to ensure the content is comprehensive and internally consistent.
- BayKeeper decision – As indicated above, the draft performance standards tables and provisions fully address the trial court decision in the prior BayKeeper lawsuit regarding San Mateo and Contra Costa permits.
- Prioritization – The dual impacts of Proposition 218 restrictions on increasing local government revenues for stormwater management programs and the concurrent anticipated increase in work load demands being placed on these programs are managed by building the concept of prioritization into the draft performance standards tables. As BASMAA has been identifying for approximately two years, due to fiscal constraints and competing local needs (such as police and fire protection services), there is now a **critical** need to prioritize municipal stormwater program actions so the most important issues and legal mandates (including TMDLs adopted by the Regional Water Board) are addressed. Proactively and candidly engaging in the difficult work of prioritizing the actions that realistically can be implemented in this permit round will help ensure consistent expectations among the Regional Water Board, interested parties (including the business/development and environmental advocacy communities), and municipal stormwater programs, and avoid frustration and disappointment going forward.
- MRP Goals – The combination of the draft performance standards tables and provisions achieve the following established goals for the MRP:
 - Consolidate six Phase 1 municipal stormwater permits (including one US EPA-issued permit) into one consistent permit for 76 co-permittees, including phasing of requirements where necessary
 - Incorporate detail currently in Stormwater Management Plans (SWMPs) into the permit by being more specific in requirements including new performance standards tables establishing (a) the required activities, (b) how much of each activity is required, and (c) reporting and effectiveness evaluation requirements for each activity
 - Add actions or enhance existing actions to address 303(d) listed pollutants and TMDL Waste Load Allocations
 - Add more specific and comprehensive stormwater monitoring, including monitoring for 303(d) listed pollutants

The attached document also addresses several other new requirements and Regional Water Board and community priorities, such as enhanced trash management program elements, full implementation of the previously phased-in new and redevelopment performance standards (e.g., site design, source control, and engineered stormwater treatment measures), and initial implementation of the first-in-the-State hydromodification management programs the Regional Water Board has only recently approved or is anticipated to approve before the end of this year.

As mentioned above, the attached document reflects *both* the MRP work group products and BASMAA member agencies' review and consideration of those products. It is important to recognize that combining the performance standards tables and provisions from six Phase I permits into one set for 76 agencies and moving them out of individual stormwater management plans and into a single permit structure has been quite a challenge. These tables and provisions reflect a significant accomplishment in terms of the development of a draft permit document.

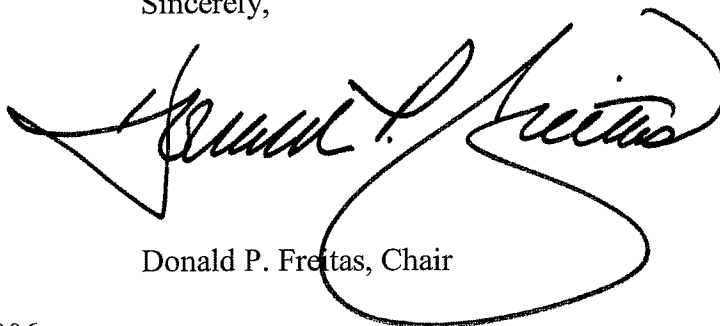
The attached document also represents a significant and substantive step up for many co-permittees. As a result, the co-permittees remain very concerned about the resources that will be necessary to implement these performance standards and provisions over the term of the MRP, even if adopted in BASMAA's suggested form. Requirements above and beyond BASMAA's proposed performance standards would be both unmanageable and unaffordable for many co-permittees. As such, BASMAA believes alternative approaches may not be practicable and would necessitate a re-prioritization of MRP objectives by the Board, enabling municipalities to redirect resources from lower priority program elements to those designated most legally important or beneficial to water quality. Alternatively, despite significant reservations concerning the challenge it would impose on many of its member agencies, the BASMAA Executive Board is prepared to recommend and advocate acceptance of the attached document and the prioritization of water quality-related objectives it reflects to the 76 BASMAA co-permittees that would be covered by an MRP.

BASMAA asks you to consider directing Board staff to utilize the attached document in its current form in the upcoming November MRP workshops/public meetings. We also encourage and would greatly appreciate your attendance at those meetings. Consistent with your stated process for submitting and distributing comments addressed to the Stormwater Subcommittee, we request the attached document be posted on the Regional Water Board website so it is readily available to all Board Members and interested stakeholders.

Finally, we express our appreciation of the effort of Regional Water Board staff and NGO representatives on the work groups and in the continuing process of adopting an MRP.

If you have any questions regarding these comments, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Donald P. Freitas", with a large, sweeping loop at the end.

Donald P. Freitas, Chair

Additional BASMAA comments – Stormwater Subcommittee and MRP

cc: John Muller, Chair – Regional Water Board – San Francisco Bay Region
Shin-Roei Lee, Chief – South Bay Watershed Management Division, Regional Water Board
Wil Bruhns, Chief – North Bay Watershed Management Division, Regional Water Board
Tom Mumley, Chief – TMDL and Planning Division, Regional Water Board
Dale Bowyer, Section Leader – Southeast Bay Section, Regional Water Board
Alexis Strauss, Director – Water Division, USEPA Region IX
BASMAA Executive Board

**MUNICIPAL REGIONAL PERMIT – BASMAA RECOMMENDATIONS FOR
OPERATIVE PROVISIONS AND PERFORMANCE STANDARDS (WHICH WOULD
FOLLOW A SET OF PERMIT FINDINGS):**

A. DISCHARGE PROHIBITION

The Permittees shall, within their respective jurisdictions, effectively prohibit the discharge of non-stormwater (materials other than stormwater) into the storm drain systems and watercourses. NPDES permitted discharges are exempt from this prohibition. Compliance with this prohibition shall be demonstrated in accordance with Provision C.1 and C.9 of this Order. Provision C.9 describes a tiered categorization of non-stormwater discharges based on potential for pollutant content, which may be discharged upon adequate assurance that the discharge contains no pollutants of concern at concentrations that will impact beneficial uses or cause exceedances of water quality standards.

B. RECEIVING WATER LIMITATIONS

1. The discharge shall not cause the following conditions to create a condition of nuisance or to adversely affect beneficial uses of waters of the State:
 - a. Floating, suspended, or deposited macroscopic particulate matter, or foam;
 - b. Bottom deposits or aquatic growths;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and/or
 - e. Substances present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption.
2. The discharge shall not cause or contribute to a violation of any applicable water quality standard (“WQS”) for receiving waters; where the discharge has previously been identified as causing or contributing to a violation of an applicable water quality standard related to a pollutant of concern (“POC”) for which a total maximum daily load (“TMDL”) has been adopted, it shall be controlled in a manner consistent with that TMDL and that TMDL’s implementation plan. If applicable water quality objectives are adopted and approved by the State Board after the date of the adoption of this Order, the Regional Board may revise and modify this Order as appropriate.

C. PROVISIONS

1. Duty to Comply

The Permittees shall comply with Discharge Prohibition A and Receiving Water Limitations B.1 and B.2 through the timely implementation of control measures and other actions to reduce pollutants in the discharge in accordance with the requirements of this permit, including any modifications. If exceedance(s) of water quality standards or water quality objectives (collectively, WQSs) for which TMDLs have not been developed persist notwithstanding

implementation of the requirements of this permit, a Permittee shall assure compliance with Discharge Prohibition A and Receiving Water Limitations B.1 and B.2 by complying with the following procedure:

- a. Upon a determination by either the Permittee(s) or the Regional Board that discharges are causing or contributing to an exceedance of an applicable WQS, the Permittee(s) shall promptly notify and thereafter submit a report to the Regional Board that describes best management practices (“BMPs”) that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of WQSs. The report may be incorporated in the Annual Report required by Provision C.5 unless the Regional Board directs an earlier submittal. The report shall include an implementation schedule. The Regional Board may require modifications to the report;
- b. Submit any modifications to the report required by the Regional Board within 30 days of notification; and
- c. Within 30 days following approval of the report described above by the Regional Board, the Permittees shall begin implementing the approved modified control measures and any additional monitoring required in accordance with the implementation plan.

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

2. Performance Standards

- a. The Permittees shall implement control measures/BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable pursuant to the Performance Standards set forth below. Performance Standards are defined as the level of implementation necessary to demonstrate the control of pollutants in stormwater to the maximum extent practicable (“MEP”). More specifically, Performance Standards are the baseline components and activity levels of the Discharger’s stormwater/urban runoff management programs and include the reporting methods to be used to verify that the implementation has been achieved.
- b. The Performance Standards set forth below must be addressed by each of the Dischargers to the extent applicable. The Dischargers may elect to address their responsibilities for the Performance Standards via joint or individual Management Plans and/or Workplans, which can serve as the framework for identification, assignment, and implementation of practices of such control measures/BMPs as are necessary to address the Performance Standards.

Industrial/Commercial Inspection Program Performance Standard

Baseline List of BMPs	Level of Implementation	Recording/Reporting ¹
Legal Authority	Update your agency's ordinances and/or other relevant legal documents – as necessary, and to the extent that is necessary – in order to assure that you have the following authority: A. Response Authority – to effectuate cessation, abatement, and/or cleanup of illegal stormwater discharges: -Agency is able to legally require an industrial or commercial facility within its jurisdiction to terminate, abate, and/or cleanup illegal stormwater discharges within a timeframe commensurate with the threat to water quality being posed, or, if that is not possible, • Allows the municipality to take necessary action and, if possible, recover costs incurred B. Citation Authority: --Municipality is able to issue citations for fines/administrative penalties without having to file lawsuits, and/or --Municipality is able to seek recovery of costs incurred in effectuating a necessary response to an illegal stormwater discharge from responsible party C. Authority to Address Repeat Offenses: --Municipality is able to impose more substantial sanctions	Confirm existence of required legal authority in first annual report due at least 18 months following permit reissuance. Provide Water Board with updates in Annual Report, if/when Permittee's ordinances are updated.

¹ Reporting to be manifested in Annual Report unless otherwise specified

Baseline List of BMPs	Level of Implementation	Recording/Reporting ¹
	(including referral to a City or District Attorney) and maintain response authorities where repeat and/or escalating violations occur over a two year period D. Enforcement Authorities Differentiate Between Categories of Violation: --Tier One (Less Significant) Violations applicable where there is evidence of non-compliance with ordinances and/or other municipal legal authorities without illegal non- stormwater discharge reaching or having reached municipal storm drain or surface waters; --Tier Two (Substantial Violations) applicable where there is evidence of illegal non-stormwater discharge of significant volume, flow or toxicity reaching or having reached municipal storm drain or surface waters or repeated Tier One violations (defined above)	
Enforcement Response Policy (ERP)	Municipality to implement tiered enforcement responses to violations of ordinances and/or other legal authorities. Tiers should reflect Tier 1 and Tier 2 categories described above, with implementation subject to the following unless justification documented: 1. Verbal warnings must be documented; only allowed for first observed Tier 1 offense within yearly period 2. Where second violation for same offense occurs within	Report, in first annual report due at least 18 months following permit reissuance, the following: A) Summary of written enforcement actions taken denominated by categories of violations and noted by business type; B) Summary of discretionary actions concerning enforcement less stringent than ERP

Baseline List of BMPs	Level of Implementation	Recording/Reporting ¹
	yearly period, written warning must be issued 3. Observed or evidence of Tier 2 violation requires written enforcement action/citation 4. Additional violation of same offense within two year period is documented and triggers escalated enforcement action	structure and justification In addition, municipality to maintain records of inspections and follow up enforcement responses for facilities inspected
Source Identification	Municipality to maintain a current inventory of industrial and commercial businesses with significant potential for illegal discharges (see categories A-D below) to be updated annually using a variety of the following methods, such as: yellow pages, business licensing, other permitting programs, Water Board Industrial General Permit NOI lists. List should reflect municipality's inspection priorities and include name and address of business owner/operator; whether business has obtained coverage under Industrial Storm Water General Permit and some description of business type (e.g., SIC, narrative)	Confirm in next occurring annual report that source identification inventory is maintained and has been updated
Industrial and Commercial Inspection Program	<u>Municipality to maintain inventory for use with industrial and commercial inspections.</u> Businesses on inventory and subject to inspection include: A. General Industrial Permit NOI Facilities B. Auto repair/servicing-related Facilities C. Food Service-related Facilities D. Other Facilities municipality	

Baseline List of BMPs	Level of Implementation	Recording/Reporting ¹
	prioritizes based on significance of potential stormwater pollutant discharge, known history of illegal non-storm water discharges, and inspection for hazardous materials/waste (such businesses may include facilities subject to local POTW pretreatment requirements, kennels, nurseries, and construction/heavy equipment rental). Permittees need not include those facilities determined by the permittee to have no pollutant exposure to storm water from commercial or industrial activity. <u>Frequency of Inspection:</u> Municipalities to prioritize and establish annual schedules for inspections based on the following objectives: • Facilities with Tier 1 written violation occurring in previous year inspected at least 1x within following year • Facilities with Tier 2 violation occurring in previous year inspected at least 1x to assure illegal discharge has terminated; • Facilities with high <i>potential</i> for stormwater pollution (per determination of permittee) 1x/year; all other facilities, 1x/5 yr. <u>Guidelines for Conducting Inspections.</u> Municipal inspector to capture nature of observed conditions and any violations on	Report in annual report that inspections have occurred and % of goal achieved; includes summary of facilities inspected. In addition, municipality to maintain records of inspections and follow up enforcement responses for facilities inspected. Municipalities also to include in annual report inspection priorities for following year. Priorities shall, in part, be based upon previous year's inspection results

Baseline List of BMPs	Level of Implementation	Recording/Reporting¹
	inspection form. Inspection forms may be paper or electronic. Inspection form to record both nature of violation and corrective action required. Violations to be noted may include: (1) non-compliance with local requirements; (2) failure to prevent pollution to the MEP; (3) illicit connections; (4) unauthorized discharges.	
Staff Training	<u>Focused training for inspectors.</u> One inspector training per year, that is conducted either on an municipality-specific, or Program or Region-wide basis.	Annual report to include information on training conducted, including dates, # of attendees, and information on subject matter and training evaluations.

Construction Inspection Program Performance Standard

Baseline List of BMPs	Level of Implementation	Recording/Reporting²
Legal Authority	Each permittee shall have the legal ability to oversee construction projects within their jurisdiction for storm water protection and be legally able to require an effective combination of erosion control, sediment control, and source control for other pollutants.	Confirm existence of required legal authority in first annual report due at least 18 months following permit reissuance. Provide Water Board with updates in Annual Report, if/when Permittee's ordinances are updated.
Enforcement Response Policy	Municipality to implement enforcement responses to violations of ordinances and/or other legal authorities such that the permittee responds to violations with an appropriate educational or enforcement response actions, and	Provide summaries of enforcement actions in Annual Report

² Reporting to be manifested in Annual Report unless otherwise specified

Baseline List of BMPs	Level of Implementation	Recording/Reporting ²
	repeat violations are dealt with in progressively stricter responses as needed to achieve compliance. The enforcement response shall be based upon the site-specific situation and nature and threat encountered: 1. <u>Verbal Warnings</u>: shall be primarily educational in nature, and specify the nature of violation and required corrective action. 2. <u>Written Notices</u>: stipulate nature of violation and required corrective action, with timeline. 3. <u>Escalated Enforcement</u> 3a. <u>Citations (with Fines)</u>: levying of civil penalties or monetary penalties. 3b. <u>Stop Work Orders</u>: requiring that construction activities be halted, except for those activities directed at cleaning up, abating discharge and correct installation of appropriate BMPs. 3c. <u>Other Escalated Measures provided for under local legal authorities</u>. 4. <u>Referral to City or District Attorney, Regional Board or other appropriate regulatory agency (e.g., DF&G, etc.)</u>. Where construction operator/developer fails to respond to municipality, permittee may proceed to refer matter to City or District Attorney, Water Board and/or	

Baseline List of BMPs	Level of Implementation	Recording/Reporting ²
	other appropriate regulatory agency for enforcement action.	
Plan check	As a condition of issuance of a grading permit, each permittee will require developers to prepare, submit for review, and implement an erosion and sediment control plan or similar administrative document that contains erosion and sediment control measures.	In annual report, municipality to summarize grading permits issued subsequent to plan check.
NOI/SWPPP Inspections	Municipality to conduct inspections of construction sites under State's General Permit, to determine whether NOI has been filed and whether SWPPP exists at site.	Summarize results of inspections in annual report.
Frequency of Inspections	Municipality to determine frequency of inspection based on size of projects, potential to impact storm water quality, time of year, and the number of active construction sites within the jurisdiction based on the following guidelines: <u>Large Sites</u> (Sites greater than or equal to one acre of land disturbance): ▪ Pre-rainy season inspections conducted at all large sites, following issuance of pre-inspection notification letters. Notifications to be provided by September 1st; inspections to be conducted by October 15th ▪ Rainy Season (Oct. 15-April 15th) inspections: 1) Screening level inspections (see below) done as part of other occurring construction inspections (i.e., building). 2) Regular storm water-specific inspections conducted at every	Report in annual report that inspections have occurred at required frequency; include description of Large Sites inspected and summary of types of violations identified in field and enforcement actions taken. Analyze trends in BMP implementation. In addition, municipality to maintain records of inspections and follow up enforcement responses for Large Sites inspected.

Baseline List of BMPs	Level of Implementation	Recording/Reporting ²
	large site once per month. <u>Small Sites</u> (Sites less than one acre of land disturbance): ▪ Screening level inspections done as part of other occurring construction inspections.	
Type/Contents of Inspections	<u>Pre-Rainy Season:</u> Inspections shall determine whether NOI has been filed, SWPPP developed, and preparations for rainy season being implemented. <u>Rainy Season/Screening Level:</u> Screening inspections completed during routine inspections occurring primarily for other purposes. Inspections are not typically comprehensive with respect to storm water issues but focus on high priority or visibly apparent threats to storm water quality. <u>Rainy Season/ Regular Storm Water Inspection:</u> Inspections shall include: 1. Inspection and prohibition of non-storm water discharges to the MEP. 2. Whenever possible, visual observation of the quality of storm water runoff during and after a major storm event. 3. BMPs are properly installed and maintained.	

Baseline List of BMPs	Level of Implementation	Recording/Reporting ²
Education & Outreach	<u>Large Sites:</u> - Promote yearly attendance by contractor representatives at Water Board's construction seminars. - Provide outreach materials during plan review and/or inspections. <u>Small Sites:</u> - Provide outreach materials during plan review and/or inspections.	In annual report, provide summary of efforts, including dates, topics, and number of attendees.
Staff Training	Provide training at least every other year to municipal staff responsible for conducting construction site storm water inspections. Cover elements of each category of construction site, updated information on BMPs (including 'lessons learned' from observations of previous year BMP implementation), and implementation of Enforcement Response Policy.	Provide summary information in annual report on training conducted and # staff attending.

Illicit Connection/Illegal Dumping and Trash/Litter Control Program Performance Standard

Baseline List of BMPs	Level of Implementation	Recording/Reporting ³
Legal Authority	Update your agency's ordinances and/or other relevant legal documents—if necessary, and to the extent that is necessary—in order to assure that you have the following authority: A. Response Authority -- to effectuate cessation, abatement, and/or cleanup of illicit non-stormwater discharges and illegal dumping and significant trash/litter generating activities: -Agency is able to legally require a facility (including construction sites) within its jurisdiction to terminate, abate, and/or cleanup non-exempted non-stormwater discharges (including illicit cross connections) and/or illegal dumping and significant trash/litter-generating activities within a timeframe commensurate with the threat to water quality being posed, or, if that is not possible, • Allows the municipality to take necessary action and, if possible, recover costs incurred B. Citation Authority: --Municipality is able to issue citations for fines/administrative penalties	Confirm existence of required legal authority necessary to meet the level of implementation requirements in initial annual report due at least 18 months following permit reissuance. Provide Water Board with updates in Annual Report, if/when Permittee's ordinances are updated.

³ Reporting to be manifested in Annual Report unless otherwise specified

Baseline List of BMPs	Level of Implementation	Recording/Reporting ³
	without having to file lawsuits, and/or --Municipality is able to seek recovery of costs incurred in effectuating a necessary response to an illicit non-stormwater discharge and/or illegal dumping/trash-litter generating activity from responsible party C. Authority to Address Repeat Offenses: --Municipality is able to impose more substantial sanctions (including referral to a City or District Attorney) and maintain response authorities where repeat and/or escalating violations occur D. Enforcement Authorities Differentiate Between Categories of Violation: --Tier One (Less Significant) Violations applicable where there is evidence of non-compliance with illegal dumping and trash/litter control ordinances or other municipal legal authorities prohibiting illegal non- stormwater discharges from reaching or having reached municipal storm drain or other municipal conveyances leading to surface waters; Tier Two (Substantial Violations) applicable where there is evidence of illegal non-stormwater discharge or dumping or illicit connections of significant volume, flow or toxicity reaching or having	

Baseline List of BMPs	Level of Implementation	Recording/Reporting ³
	reached municipal storm drain or other municipal conveyances leading to surface waters or repeated Tier One violations (defined above)	
Progressive (Enforcement) Response Policy	Municipality to implement progressive responses to violations of ordinances and/or other legal authorities. Tiers should reflect Tier 1 and Tier 2 categories described above, with implementation subject to the following unless justification documented: Permittee shall implement progressive responses to illicit non-stormwater discharges and illegal dumping and trash/litter generating activities of varying seriousness, and/or repeat violations. Progressive response policy shall explain how and when to use each type of outreach, education and/or enforcement available in permittee's 'toolbox', in a reasonable progression (e.g., reactive inspections and follow-up: patrol on routine basis – while conducting other inspections is OK – and at a minimum, respond to referrals or directly observed discharges or potential discharges, as they occur). As illicit discharge, illegal dumping activities and trash/litter generation are, by nature, highly variable in type of substance, level of seriousness, and intent of perpetrator, the appropriate response (outreach, education,	Report in next occurring annual report 18 months following permit adoption, the following: A) Summary of enforcement actions taken denominated by categories of violations (e.g., illicit discharges, illegal dumping, and trash/litter generating activities); B) Summarize discretionary actions differing from Progressive Response Policy structure and justification In addition, municipality to maintain records of reported incidences of significant illicit discharges, illegal dumping and trash/litter generating activities and follow up progressive responses for all such incidences per investigator's best professional judgment

Baseline List of BMPs	Level of Implementation	Recording/Reporting ³
	enforcement) may vary, case to case, and city to city. The identification of the appropriate response shall ultimately be a function of the inspector's Best Professional Judgment. For some discharges, the appropriate response will be verbal; for others, it will be written. Likewise, in some cases the appropriate response is educational and instructive, where other cases also require enforcement (of varying levels). The inspectors' Best Professional Judgment shall, at a minimum, take into account the following: • Nature of substance (whether hazardous to humans and/or environment) • Quantity of discharge • Intentional act (as opposed to negligent or uneducated) • Whether prior verbal warning was previously issued • Whether multiple offenses occurred within a one year period Each permittee shall focus their proactive activities (proactive outreach/education; distribution of educational materials; focused enforcement, etc.) on the most prevalent categories of illicit non-stormwater discharges, illegal dumping, and trash/litter	

Municipal Regional Permit

Baseline List of BMPs	Level of Implementation	Recording/Reporting ³
	generating activities within their jurisdiction (refer to PI/P Performance Standard for further detail).	
Screening Collection System for Illicit Connections	Municipality to review aboveground checkpoints in the collection system for illegal cross connections during routine maintenance activities.	Summarize illicit connections identified in Annual Report
Spill and Dumping Response Planning	Permittees shall have or develop a spill/dumping response flow chart and phone tree, which shows the various responsible agencies and their contacts, who would be involved in Illicit discharge, illegal dumping and trash/litter incidence response. Also to be included is contact information for after hours/weekend incidents. Update as necessary.	Confirm that up-to-date flow chart/phone tree is in place in next occurring annual report due within 18 months following permit adoption

Baseline List of BMPs	Level of Implementation	Recording/Reporting ³
Trash and Litter Control a) Phased approach to litter/trash clean up activities related to stormwater and within agency jurisdiction. (If desirable, conduct on inter-agency basis in coordination with other local agencies and programs.)	• Identify and assess potential litter/trash high accumulation areas/watersheds. Consider use of information previously collected through trash assessments collected by storm water quality monitoring programs. • Identify potential management actions (BMPs) to reduce trash levels in stormwater conveyances at such locations and identify current trash collection/control options for minimizing trash/litter inputs to storm drain inlets. Determine the relative ease of implementation, costs and effectiveness of devices/BMPs investigated. • Identify high priority storm drain inlets within key urban areas/watersheds that have had high accumulations of litter/trash to prioritize inlets for potential pilot projects. • Select locations for pilot projects and implement demonstration studies to assess their effectiveness and associated costs. If the management actions are not effective or overly costly, propose and implement an alternative pilot approach.	Annually report on actions taken for items a, b, and c, potential revisions to trash management actions and enforcement actions taken.
b) Litter receptacles placement and maintenance	• Provide public trash receptacles in appropriate	

Baseline List of BMPs	Level of Implementation	Recording/Reporting ³
	locations and minimize overflowing trash receptacles in these areas.	
c) Public education – litter prevention (If appropriate, conduct on inter-agency basis in coordination with other local agencies and programs.)	Incorporate litter prevention messages in PIP outreach programs.	
d) Anti-littering codes and ordinances	Where not in existence, adopt anti-littering codes/ordinances; where codes/ordinances exist, encourage enforcement.	
Staff Training	One inspector training per year, that is conducted either on an municipality-specific, or Program or Region-wide basis	Annual report to include information on training conducted, including dates, # of attendees, and information on subject matter and training evaluations.

**Performance Standard for Municipal Maintenance Activities
(including Public Streets, Roads and Highways Operation and Maintenance)**

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
Street and Road Sweeping and Cleaning		
a) Sweeping Identify and designate curbed streets and roads and municipally owned uncovered parking lots for sweeping. Sweeping frequency should be assigned based on the volume of	- Planning: Identify and/or map designated curbed streets, roads, and municipally owned uncovered public parking lots for sweeping within 12 months after permit adoption). - Implementation frequency, timing and efficiency: sweep	1. In the first full reporting year after Permit adoption, identify the high, medium, and low priority areas and an implementation schedule with respect to each. Annually identify any

⁴ Reporting to be manifested in Annual Report unless otherwise specified.

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
trash present and/or rate at which debris is generated. The following priorities shall be assigned: – High Priority: Curbed streets and road segments and/or municipally owned uncovered parking lots designated as high priority may include, but not limited to, high traffic zones, heavy commercial and industrial districts, high density residential neighborhoods and plazas. These areas consistently generate high volumes of trash, debris and other storm water pollutants; – Medium Priority: Curbed streets, road segments and/or municipally owned uncovered parking lots designated as medium priority may include, but not limited to, medium traffic zones, warehouse districts, and medium commercial and industrial districts; and	curbed streets/roads and municipally owned uncovered parking lots at a minimum, at least an average of at least once per month or as follows: – High Priority: average of at least twice per month; – Medium Priority: average of at least once per month; and – Low Priority: as necessary, but at least once before the onset of the rainy season.	changes thereafter. 2. Maintain records of types of sweepers used. 3. Maintain records of swept curb miles, volume or weight of materials removed. 4. Maintain municipal staff training records. 5. Maintain a summary of seasonal leaf removal program efforts. 6. Maintain records concerning co-permittee's public outreach efforts to improve sweeping efficiency 7. Report information for items 3-6 (listed above) in summary form within Annual Report.

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
– Low Priority: Curbed treets, road segments and/or municipally owned uncovered parking lots designated as low priority may include, but not limited to, light traffic zones, residential zones and light commercial districts.		
b) Sweeping equipment operation	Follow equipment performance specifications to ensure that street sweeping equipment operates effectively at the proper speed and is properly maintained to optimize pollutant removal from the curb (where dirt deposition is probably higher).	
c) Measures to improve efficiency	Perform, within three years of Permit adoption, an internal review or supervised inspection using appropriate methodology to evaluate street sweeping effectiveness to the maximum extent practicable.	
d) Management of material removed by sweeping	- To prevent discharges of pollutants to waterways, ensure proper handling and disposal of materials removed from streets. - Effectively prohibit discharge of untreated wash water from street sweeping and street sweeper rinse out to storm drains unless otherwise authorized by an NPDES	

Municipal Regional Permit

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
	permit.	
e) Street cleaning (wet) and flushing	• Avoid street flushing. However, if necessary, effectively prohibit discharges to storm drain.	
f) Staff training	• Provide annual training to municipal staff on how to fully comply with Performance Standards and permit requirements; if outside contractors are used, require appropriate training for their staff.	
Street and Road Repair and Maintenance		
a) Asphalt/concrete removal, installation and repair	• Minimize discharges to streets, gutters, storm drain inlets, or waterways by requiring pavement cutting crews to recover and properly dispose of saw cutting wastes. • If concrete slurry enters the storm drain system (from accidental spills or releases), require removal of the material to the maximum extent practicable. • Properly manage concrete slurry, asphalt, and other street and road maintenance materials and waste to minimize discharge to storm water runoff. • Require implementation of BMPs for storm drain protection and sediment transport control measures when performing maintenance activities involving road repair construction.	1. Annually certify implementation of the BMPs listed in a-c of this section to MEP.

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
	- Effectively prohibit discharge of untreated wash water from maintenance areas to storm drains unless otherwise authorized by an NPDES permit. - Require sweeping and/or vacuuming to remove debris, concrete, or sediment residues from work sites upon completion of work. Require clean up of significant road repair construction remains, spills and leaks, preferably using dry methods (e.g., absorbent materials, rags, pads, and vacuum) consistent with methods such as those outlined in the BASMAA “Blueprint for a Clean Bay” and other generally accepted practices. - Implement BMPs and/or SOPs for pollutant removal from street maintenance/utility repairs. - Require that public works inspectors and maintenance crews have received training to facilitate compliance with storm water requirements.	
b) Equipment cleaning, maintenance, and storage	- Effectively prohibit discharge of untreated wash water from equipment cleaning and maintenance activities to storm drains unless otherwise authorized by an NPDES permit. - Unless otherwise authorized by an NPDES permit, require containment of washout from concrete trucks, chutes, and/or concrete rinse within a designated area during	

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
	concrete pours and operation. Unless otherwise authorized by an NPDES permit, effectively prohibit discharge of these wastes to storm drain inlets, streets or ditches consistent with methods such as those outlined in the BASMAA “Blueprint for a Clean Bay” and/or other generally accepted practices.	
c) Signing and striping	Unless otherwise authorized by an NPDES permit, require containment and proper disposal of paint waste and/or thermoplastic residue.	
Sidewalk/Plaza Maintenance & Surface Cleaning		
a) Cleaning protocols	Consistent with BASMAA’s recognized surface cleaning BMPs (BASMAA 1996), require effective containment and proper disposal of wash water to effectively prevent untreated discharges to storm drains unless otherwise authorized by an NPDES permit.	Annually certify implementation with the BMPs listed in a to MEP
Bridge and Structure Maintenance		
a) Repair Work	Require prevention of concrete, steel, wood, metal parts, or other work-related materials from entering storm drains or water courses.	Annually certify implementation with the BMPs listed in a-b of this section to the MEP.
b) Graffiti removal	Consistent with BASMAA’s recognized surface cleaning BMPs (BASMAA 1996), require the protection of nearby storm drain inlets prior to removing graffiti from walls, signs, sidewalks or other	

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
	structures needing graffiti abatement. Effectively prevent untreated discharges of debris, cleaning compound waste, paint waste or wash water-containing cleaning compounds from entering storm drains or water courses unless otherwise authorized by an NPDES permit.	
Landscape Maintenance		
a) Erosion controls	Minimize soil erosion from storm water runoff on municipally maintained medians and road embankments, including via maintenance of vegetative cover.	Annually certify implementation with the BMPs listed in a-c of this section to the MEP.
b) Irrigation practices	Require regular maintenance of municipally operated landscape irrigation systems to help minimize unnecessary water usage and related runoff.	
c) Vegetation controls	Require that vegetation removed by municipal crews (including clippings, chips and pruning debris) be kept away from storm drain inlets and water courses.	
Catch Basin Inspection and Cleaning		
a) Catch Basin Inspection and Cleaning	- Label/stencil storm drain inlets with “No Dumping - Drains to Bay” or equivalent signage (See PI/P performance standard). - Maintain storm drain inlets and storm water collection system, including by means of the following: - Inspect storm drain inlets/catch basins for trash	1. Keep annual records of inspections, cleaning, and maintenance; provide this information in a summary form within the annual report.

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
	and accumulated debris at least once annually and clean as appropriate. During inspections, Co-permittees to check for the following: 1. Operational integrity; 2. Presence of illicit discharges, and 3. Stencil legibility.	
Stormwater Pump Stations		
a) Operation and Maintenance of municipally owned storm water pump stations	• Develop a schedule for inspection and maintenance at key pump stations and conduct such inspections and maintenance prior to the rainy season.	1. Maintain records of the stations inspected and maintenance performed. 2. Compile and report information gathered in this section in a summary form within the annual report.
Rural Public Works Maintenance and Support		
a) Implement and require contractors to implement BMPs to the MEP when performing maintenance activities in or adjacent to stream channels unless required to do otherwise by emergency flood control procedures.	– Manage large woody debris in stream channels and attempt to preserve vegetation in protected riparian corridors. – Promote stream bank stabilization projects/activities. – Promote design, maintenance and repair of roads and culverts in rural areas to minimize related erosion. – Manage storm water runoff to minimize erosion. – Obtain appropriate agency permits (if any) for rural	Report annually on the rural public works activities described in this section.

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
	public works activities.	
Municipal Corporation Yard Maintenance		
a) Prepare and implement a specific Stormwater Pollution Prevention Plan (“SWPPP”) for public vehicle maintenance facilities, material storage facilities and corporation yards that have the potential to discharge pollutants to storm water and/or the waters of the State. This requirement shall only apply to facilities not already covered under the Industrial Stormwater General Permit.	• Maintain a list of all municipal yards, including their location and a description of facility use. • Implement BMPs to minimize pollutant discharges in stormwater and prohibit non-stormwater discharges (e.g., wash waters and street sweeper, vactor and other related equipment cleanout water). Actions include but not limited to, good housekeeping practices, material storage control, vehicle leak and spill control and illicit discharge control. • Routinely inspect municipal corporation yards to ensure that no illegal discharges are entering the storm drain system and that during storms, pollutant discharges are controlled to the maximum extent practicable. At a minimum, inspections shall occur prior to the start of the rainy season. • All vehicle and equipment wash areas shall be plumbed to	Annually report on any changes or updates to the SWPPP.

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
	the sanitary sewer or equivalent after coordination with local authorities and equipped with a pre-treatment device (if necessary) in accordance with the requirements of the local sewer agency. • Consistent with the BASMAA recognition program (BASMAA 1996), use dry clean up methods to clean up debris. If wet cleaning methods must be used (e.g., pressure washing), ensure that wash-water is collected and disposed in the sanitary sewer in accordance with the requirements of the local sewer agency. Any private companies hired by the agency to perform cleaning activities on agency-owned property shall follow these same requirements. • If necessary, outdoor storage areas shall be covered and/or bermed to prevent cross contamination of stormwater run-on to operation areas or to prevent runoff from reaching storm drain inlets. • Storage areas for refuse and waste materials removed from yards and storm drainage facilities shall be designated and be properly maintained to prevent cross contamination of stormwater run-on to operation areas or to prevent runoff from reaching storm drain inlets. • Ensure each storm drain inlet is labeled/stenciled with “No Dumping, Drains to Bay” or	

Baseline List of BMPs	Level of Implementation	Recording/Reporting ⁴
	equivalent signage.	
b) Train staff on SWPPP requirements and implementation	Provide staff training annually.	Report on staff training received in annual report.
c) Revise and update procedures and plans as needed, but with a full review at least once each 5 years.		Report when full review of the SWPPP occurs.

New Development and Redevelopment Performance Standard

BMPs	Level of Implementation	Reporting ⁵
Maintain prior new and redevelopment control measures (except as otherwise provided below or in Permit). To the extent not already accomplished, Permittees shall, within 24 months of the date of this Permit's adoption, modify their stormwater management programs and/or project review processes as needed to incorporate the requirements of a-i above.	a. Legal authority in place to implement the requirements of prior permit provision C.3; b. Local permitting procedures and/or conditions of approval/authorization in place to regulate new and redevelopment projects. For projects discharging directly to 303(d) listed water bodies, conditions of approval must require that post-project runoff does not exceed pre-project levels for such pollutants that are listed; c. When conducting environmental reviews, such as CEQA, municipality requires evaluation of water quality effects and identification of	Confirm a-i in first Annual Report submitted 24 months following permit reissuance. Provide Water Board with relevant updates in Annual Report thereafter.

⁵ Reporting to be manifested in Annual Report unless otherwise specified.

BMPs	Level of Implementation	Reporting ⁵
	appropriate mitigation measures, where applicable; d. Training performed for municipal staff associated with new and redevelopment functions; e. Outreach efforts undertaken, including providing education materials to municipal staff, developers, contractors and owner/builders, early in the planning process and as appropriate; f. Mosquito and vector control staff have access to projects for purposes of inspecting control measures; g. Site design standards and/or guidance or their equivalent) exist that encourage minimization of land disturbance and impervious surfaces, clustering of structures and pavement, disconnecting roof downspouts, use of microdetention, including landscape detention, preservation of high-quality open space, maintenance and/or restoration of riparian areas and wetlands as project amenities; h. Source control requirements exist to limit pollutant generation, discharge, and runoff, to the maximum extent practicable. Source control measures may include the following which	

BMPs	Level of Implementation	Reporting ⁵
	are offered as examples: indoor mat/equipment wash racks for restaurants, or covered outdoor wash racks plumbed to the sanitary sewer, covered trash and food compactor enclosures with a sanitary sewer connection for dumpster drips, sanitary sewer connections for swimming pool discharges, sanitary drained outdoor covered wash areas for vehicles, equipment, and accessories, sanitary sewer drain connections to take fire sprinkler test water, storm drain system stenciling; landscaping that minimizes irrigation and runoff, promotes surface infiltration where appropriate, and minimizes the use of pesticides and fertilizers; and appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas; i. Revisions made to General Plans, as necessary, to incorporate water quality and watershed protection principles and policies and to establish a policy basis for measures for regulated development projects.	

BMPs	Level of Implementation	Reporting ⁵
Applicable projects/new and redevelopment project categories.⁶ To the extent not already accomplished, Permittees shall, within 24 months of the date of this Permit's adoption, modify their stormwater management programs and/or project review processes as needed to incorporate these requirements.	Municipalities to utilize the following thresholds, as described: 1. New commercial, industrial, or residential developments that create 10,000 square feet or more of impervious surface, including roof area, streets and sidewalks. This category includes any development of any type on public or private land, which falls under the planning and building authority of the Permittees, where 10,000 SF or more of new impervious surface, collectively over the entire project site, will be created. Construction of one single-family home on sites greater than one acre, which is not part of a larger common plan of development, with the incorporation of appropriate pollutant source control and design measures, and using landscaping to appropriately treat runoff from roof and	

⁶ While all projects regardless of size should consider incorporating appropriate source control and site design measures that minimize stormwater pollutant discharges to the maximum extent practicable, new and redevelopment projects that fall beneath the level of implementation threshold are not subject to the numeric sizing requirements. In addition, the numeric sizing requirements set forth herein shall not be applicable to Vallejo for two years following the adoption of this Order. These requirements shall also not apply to projects for which a privately-sponsored development application has been filed as complete or deemed complete. With respect to public projects, these requirements shall not apply to projects for which funding has been committed and for which construction has previously been scheduled.

⁷ Where a Significant Redevelopment project results in an increase of, or replacement of, more than fifty percent of the impervious surface of a previously existing development, and the existing development was not subject to stormwater treatment measures, the entire project must be included in the treatment measure design. Conversely, where a Significant Redevelopment project results in an increase of, or replacement of, less than fifty percent of the impervious surface of a previously existing development, and the existing development was not subject to stormwater treatment measures, only that affected portion must be included in treatment measure design.

BMPs	Level of Implementation	Reporting ⁵
	house-associated impervious surfaces (e.g., runoff from roofs, patios, driveways, sidewalks, and similar surfaces), are deemed to be in substantial compliance with the numeric sizing criteria; construction of one single-family home on sites of 10,000 square feet to one acre, which is not part of a larger common plan of development, is excluded from the requirement to address the numeric sizing criteria. 2. Streets, roads, highways, and freeways that are under the Permittees' jurisdiction and that create 10,000 square feet or more of new impervious surface. This category consists of any newly constructed paved surface used primarily for the transportation of automobiles, trucks, motorcycles, and other motorized vehicles. Excluded from this category are sidewalks, bicycle lanes, trails, bridge accessories, guardrails, and landscape features. 3. Significant Redevelopment projects. This category is defined as a project on a previously developed site that results in addition or replacement, which combined total 10,000 sq ft or more of impervious surface on such an already developed site ("Significant Redevelopment").⁷ Excluded from this category are interior remodels and routine	

BMPs	Level of Implementation	Reporting ⁵
	maintenance or repair. Excluded routine maintenance and repair include roof or exterior surface replacement, pavement resurfacing, repaving and road pavement structural section rehabilitation, within the existing footprint, and any other reconstruction work within a public street or road right-of-way where both sides of that right-of-way are developed.	
Numeric sizing criteria for pollutant removal/treatment systems: All Permittees shall require that treatment measures , or measures to disperse and infiltrate runoff from impervious areas, be constructed for applicable projects, as defined by the thresholds above that incorporate, at a minimum, the following hydraulic sizing design criteria to treat stormwater runoff, or equivalent criteria to achieve treatment or dispersal and infiltration of 80% of total runoff over the life of the project.. As appropriate for each criterion, the Permittees shall use or appropriately analyze local rainfall data to be used for that criterion. To the extent not already	Municipalities shall implement based on the following alternatives:⁸ i. Volume Hydraulic Design Basis: Treatment measures whose primary mode of action depends on volume capacity, such as detention/retention units or infiltration structures,⁹ shall be designed to treat stormwater runoff equal to: 1. The maximized stormwater quality capture volume for the area, based on 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	For each project approved and made subject to numeric sizing requirements, include the following in tabular format in Annual Report: • Project Name • Project Type (e.g., commercial, industrial, residential multi-unit, single-family residential), and description. • Site Acreage (or square footage of land disturbance). • New or replaced impervious surface area. • Source control measures BMPs. • Site design measures BMPs. • Post construction treatment BMPs onsite.

⁸ The volume and flow-based criteria set forth in alternatives i. and ii. below may be combined provided that the overall effect is to achieve treatment of 80% of total runoff over the life of the project.

⁹ This includes allowance for measures to disperse and infiltrate runoff from impervious areas as part of the site design.

Municipal Regional Permit

BMPs	Level of Implementation	Reporting ⁵
accomplished, Permittees shall, within 24 months of the date of this Permit's adoption, modify their stormwater management programs and/or project review processes as needed to incorporate these requirements.	event); or 2. The volume of runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in the California Stormwater Best Management Practices New and Redevelopment Handbook (CASQA, 2003), using local rainfall data. ii. Flow Hydraulic Design Basis Treatment measures whose primary mode of action depends on flow capacity, such as swales, sand filters, or wetlands, shall be sized to treat: 1. 10% of the 50-year peak flow rate; or 2. 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 3. The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.	- Hydraulic Sizing Criteria used. - Operation & maintenance responsibility mechanism. Information shall be sent to the Mosquito Abatement District which is associated with the Permittee's geographic jurisdiction. In addition, include in Annual Report: - Discussion of effectiveness of program. - Proposed changes to improve program.
Limitations on Use of Infiltration Treatment Measures - Infiltration and Groundwater Protection (for the purpose of this section, "treatment measures" include flow duration control measures)	In order to protect groundwater from pollutants that may be present in urban runoff, treatment measures that function primarily as infiltration devices (such as infiltration basins and infiltration trenches not deeper	

BMPs	Level of Implementation	Reporting ⁵
	than their maximum width) shall meet the following conditions: i. Pollution prevention and source control measures shall be implemented at a level appropriate to protect groundwater quality at sites where infiltration devices are to be used; ii. Use of infiltration devices shall not cause or contribute to degradation of groundwater water quality objectives; iii. Infiltration devices shall be adequately maintained to maximize pollutant removal capabilities; iv. The vertical distance from the base of any infiltration device to the seasonal high groundwater mark shall be at least 10 feet. Note that some locations within the Permittees' jurisdiction are characterized by highly porous soils and/or a high groundwater table; in these areas treatment measure approvals should be subject to a higher level of analysis (e.g., considering the potential for pollutants such as on-site chemical use, the level of pretreatment to be achieved, and similar factors); v. Unless stormwater is first treated by a means other than infiltration, infiltration devices shall not be recommended as treatment measures for areas of industrial or light industrial	

BMPs	Level of Implementation	Reporting ⁵
	activity; areas subject to high vehicular traffic (25,000 or greater average daily traffic on main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; car washes; fleet storage areas (bus, truck, etc.); nurseries; and other high threat to water quality land uses and activities as designated by each Permittee; and, Infiltration devices shall be located a minimum of 100 feet horizontally from any water supply wells.	
Alternative Compliance Based on Impracticability (for the purpose of this section, “treatment measures” include flow duration control	As an alternative to requiring a project sponsor to install onsite treatment measures meeting the numeric sizing criteria set forth above, a permittee may but is	Report in next occurring annual report 18 months following permit adoption, the following: A) Summary of alternative

¹⁰ Redevelopment Projects are defined as projects on a previously developed site that results in the addition and/or replacement of impervious surface. Brownfields are defined per US EPA as a project located on a site where the expansion of a use, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Low or Moderate-Income or Senior Housing is defined per Government Code Sections 65589.5(h)(3) or (4) or 65195(b) or as an Affordable Housing Project - a project that creates housing units, and more than 50 percent of the housing units are affordable to persons of low or moderate income as defined by Health and Safety Code Section 50093, but for purposes of this section, only the actual low or moderate income or senior housing portion of the development will be allowed the benefit of this section. Transit Village developments are defined as projects located within one-fourth (1/4) to one-half (1/2) of a mile of a transit station and/or intermodal facility that creates or contributes to an existing or planned compact, mixed-use, walkable community, centered around the transit station or intermodal facility that, by design, invites residents, workers, visitors, and shoppers to drive their cars less and ride mass transit more. Bus stops are not included in this definition.

¹¹ Equivalent offsite treatment – based on the area of new/replaced impervious surface created by the project, the amount of pollutant loading, surface area, or quantity of runoff, which would be treated if hydraulically-sized treatment controls meeting the numeric sizing criteria set forth above were installed onsite. The cost of treatment does not have to exceed 2% of Total Project Costs (as defined above). Examples of acceptable equivalent treatment projects include but are not limited to the installation of hydraulically-sized stormwater treatment measures in a nearby parking lot or other development where hydraulically-sized treatment measures were not previously installed, or the construction of hydraulically-sized swales along a public road.

BMPs	Level of Implementation	Reporting ⁵
measures)	not required to allow the project sponsor to: i. Establish the impracticability of onsite treatment. Impracticability may be established by means such as or substantially equivalent to one or more of the following: • Soil conditions - Geotechnical constraints may prevent installation of treatment controls. (see e.g., limitations on infiltration treatment measures set forth above.) This includes projects in an area where infiltration is not permitted and other means of meeting hydraulic sizing requirements are impracticable for cost or regulatory reasons, or • Cost – Projected cost of the required treatment measure (cost of labor and materials for the treatment measure) would exceed two percent (2%) of Total Project Cost (labor and materials cost of the physical improvements proposed; this does not include land, transaction, financing, permitting, demolition or off-site mitigation costs.) • Lack of adequate space – Lack of adequate space may be considered as a basis of impracticability to apply post construction treatment control measures. However, there are some treatment	compliance actions taken; B) In addition, municipality to maintain full records of alternative compliance decisions for all applicable projects where equivalent offsite treatment and/or water quality benefit required

¹² A showing of impracticability is not necessary if this option is exercised.

BMPs	Level of Implementation	Reporting ⁵
	measures that require little space that should be carefully considered before a finding based on inadequate space may be made. • Regulatory Conflict – Installation of treatment measures are impracticable if they would result in inability of project sponsor to comply with other regulatory requirements at the federal, state and/or local levels. ii. For Redevelopment projects which are Brownfields, Low or Moderate-Income or Senior Housing, or Transit Village developments,¹⁰ alternative compliance shall consist of maximizing site design treatment controls (including landscaping, bioretention gardens, etc.) to provide as much onsite treatment as possible. iii. For all other projects subject to numeric sizing criteria for which impracticability is established, the project sponsor shall be required to minimize new/replaced impervious surface in site design and address any shortfall in volume of flow treated onsite via one or combination of the following options: • Provide equivalent offsite treatment¹¹ at another project or through a regional or municipal treatment system discharging in the same	

BMPs	Level of Implementation	Reporting ⁵
	watershed and to the same receiving waters, where feasible.¹² • Provide equivalent water quality benefit (e.g., stream restoration, habitat conservation easement, riparian enhancement, wetlands construction, reduced vehicular usage or other means of effectuating pollutant loading reduction, etc.) for the same watershed and to the same receiving waters, where feasible Where the Regional Board has approved of a banking program, project sponsors may provide for equivalent offsite treatment or equivalent water quality benefits via the purchase of “banked” credits. Where a municipality wishes to establish them, banking procedures would allow agencies to document the creation of credits and apply them to a future development or redevelopment project that meets the offsite equivalent criteria listed above.	
Alternative Certification of Adherence to Numeric Design (includes treatment and flow control measures)	A Permittee may elect to accept a signed certification from a Civil Engineer or a Licensed Architect or Landscape Architect registered in the State of California, or another Permittee that has overlapping jurisdictional project permitting authority, that a proposed project meets the numeric	

Municipal Regional Permit

BMPs	Level of Implementation	Reporting ⁵
	design criteria established above, when applicable. ¹³	
Operation and Maintenance of Treatment Measures: All treatment measures required by municipalities to address numeric sizing criteria pursuant to the above shall be required to be adequately operated and maintained by the project owner/operator, including for purposes of assuring appropriate vector control measures. Municipalities shall follow up on the above by implementing a treatment measures operation and maintenance (O&M) verification program (O&M Program). To the extent not already accomplished, Permittees shall, within 24 months of the date of this Permit's adoption, modify their stormwater management programs and/or project review processes as needed to incorporate these requirements (For the purpose of this section, "treatment measures" include flow duration control measures.)	Each Permittee's O&M Program shall include: i. Inspection of a subset of prioritized treatment measures for appropriate O&M, on an annual basis, with appropriate follow-up and correction. ii. Obtaining adequate assurance of acceptance of responsibility for maintenance and provision of access for purposes of verification. Where a private entity is responsible for O&M, the municipality shall obtain the entity's signed statement accepting responsibility for maintenance until the responsibility is legally transferred to another entity, and providing access permission for representatives of the Permittee, local vector control district, and Regional Board staff to conduct onsite inspections for the purpose of O&M verification for the stormwater treatment system to the extent allowable by law; and, for all entities, either 1. A signed statement from the public entity assuming post-construction responsibility for treatment measure	For the O&M Program, include the following in tabular format in Annual Report: • Facility/site subset inspected during the reporting period and Responsible Party for O&M. • Date(s) of inspection. • Type of inspection (e.g., annual, follow-up, spot). • Type(s) of BMPs inspected. • Enforcement action(s) taken (e.g., verbal warning, notice of violation, administrative citation, administrative order).

¹³ The Permittee should verify that each certifying person has been trained on treatment measure design for water quality not more than three years prior to the signature date, and that each certifying person understands the groundwater protection principles applicable to the project site. Training conducted by an organization with stormwater treatment measure design expertise (e.g., a university, American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, or the California Water Environment Association) may be considered qualifying.

BMPs	Level of Implementation	Reporting ⁵
	maintenance and that the treatment measures meet all local agency design standards;¹⁴ or 2. Written conditions in the sales or lease agreement requiring the buyer or lessee to assume responsibility for O&M consistent with this provision, which conditions, in the case of purchase and sale agreements, shall be written to survive beyond the close of escrow; or 3. Written text in project conditions, covenants and restrictions (CCRs) for residential properties assigning O&M responsibilities to the home owners association for O&M of the treatment measures; or 4. Any other legally enforceable agreement or mechanism that assigns responsibility for the maintenance of treatment measures.	

¹⁴ The Dischargers are expected to work diligently and in good faith with the appropriate agencies to obtain any approvals necessary to complete maintenance activities for treatment controls. If the Dischargers have done so, when necessary and where maintenance approvals are not granted by the agencies, the Dischargers shall be considered by the Water Board to be in compliance with this permit.

Public Information and Participation (PI/P) Performance Standard

BMPs¹⁵	Level of Implementation¹⁶	Reporting¹⁷
Storm Drain Marking	Inspect and maintain or mark municipally-maintained storm drain inlets with a legible “no dumping” message or equivalent once per permit cycle with a goal of achieving at least 90% coverage if a generic message is used or effectuate at least 75% coverage through a program/method that utilizes volunteers and/or a watershed-specific message.	Verify percentage of municipally-maintained inlet markings inspected and maintained with a “no dumping” message or equivalent once per permit cycle; if equivalent program/method used, verify implementation.
Advertising Campaign/ Media Buys Participate in or contribute to an advertising campaign with goal of increasing overall awareness in target audience of message and behavior change	Campaigns/Media Buys to address up to 2 pollutants of concern over permit cycle; conduct at least one pre-campaign survey and one post-campaign survey to assess awareness/behavioral change. Implementation may be coordinated regionally to address a broad target audience.	Confirm status of implementation and, when available, survey results, in annual report
Media Relations (unpaid media coverage) Attempt to maximize use of	Implementation may occur at agency, program or regional level; at a minimum, conduct outreach to media community	Summarize outreach efforts undertaken and coverage generated in annual report

¹⁵ BMPs shall be implemented in a manner addressing the following goals to the maximum extent practicable: Change behaviors that negatively impact the watershed and stormwater quality.

1. Encourage behaviors that protect, preserve, and restore the watershed and stormwater quality.
2. Increase awareness in audiences that their activities impact our watershed and stormwater quality.
3. Deliver messages designed to encourage personal responsibility and actions that benefit the watershed and stormwater quality.
4. Attempt to leverage resources, including by partnering with other agencies and organizations, where appropriate.

¹⁶ The levels of implementation set forth below include advertising, media relations, awareness events, and outreach activities required by and cross-referenced in the tables set forth in Provision C.3 of this Order concerning pollutants subject to TMDLs or otherwise previously identified as POCs.

¹⁷ Reporting to be manifested in Annual Report unless otherwise specified.

Municipal Regional Permit

BMPs ¹⁵	Level of Implementation ¹⁶	Reporting ¹⁷																
free media/media coverage through participating in available media relations efforts, to increase overall awareness of message and behavior change in target audience.	via press release, PSAs, and/or other means – minimum of five pitches/outreach efforts per FY at county-wide program and/or regional level, with priority given to POC items. Co-permittess encouraged to enhance efforts at local level.																	
Establish PIP Point of Contact Have a point of contact, either as an individual co-permittee or collectively, set up to make available to the public information on watershed and/or stormwater quality/control efforts, (e.g.: telephone number, website)	At least one point of contact established, either individually or collectively	List point of contact in annual report																
Events <u>Stormwater and Pollutant of Concern Awareness¹⁸</u> Participate and/or host events, either individually or collectively, to raise awareness concerning stormwater and pollutants of concern and measures designed to address their adverse effects on water quality (e.g.: fairs, shows, public/commercial workshops, community events, Farmers Markets)	Annually, each co-permittee will individually or collectively participate in and/or host a number of events based on population, according to the table below: ¹⁹ <table><tr><td><u>Population</u></td><td><u># of Events</u></td></tr><tr><td>< 10,000:</td><td>1</td></tr><tr><td>10,001 – 40,000:</td><td>2</td></tr><tr><td>40,001 – 100,000:</td><td>3</td></tr><tr><td>100,001-150,000:</td><td>4</td></tr><tr><td>150.001-250,000:</td><td>5</td></tr><tr><td>> 250,000:</td><td>7</td></tr><tr><td>Non-population-based agencies</td><td>5</td></tr></table>	<u>Population</u>	<u># of Events</u>	< 10,000:	1	10,001 – 40,000:	2	40,001 – 100,000:	3	100,001-150,000:	4	150.001-250,000:	5	> 250,000:	7	Non-population-based agencies	5	Summarize in annual report, number of events participated in and success of efforts (using, where applicable, with appropriate measures such as # of participants, post-event survey)
<u>Population</u>	<u># of Events</u>																	
< 10,000:	1																	
10,001 – 40,000:	2																	
40,001 – 100,000:	3																	
100,001-150,000:	4																	
150.001-250,000:	5																	
> 250,000:	7																	
Non-population-based agencies	5																	

¹⁸ Priority must be given to events addressing Pollutants of Concern to the extent required by Permit Provision C.3.

¹⁹ Co-permittees may claim individual credit for events which their Areawide Program participates, supports, and/or hosts. Where an Areawide Program addresses all of these requirements for its co-permittees, the Program shall participate in the number of efforts shown below for a population in excess of 250,000.

BMPs ¹⁵	Level of Implementation ¹⁶	Reporting ¹⁷												
Events <u>Watershed Stewardship</u> If watershed-oriented groups/collaboratives exist, either as an individual co-permittee or collectively, actively encourage their efforts (e.g.: Watershed Forum, WMI, “Friends of...” groups). If none exist, encourage formation of grassroots watershed groups or re-orientation of priorities of an existing local group (e.g. neighborhood association). Alternatively, either as an individual co-permittee or collectively, host, support, or participate in Citizen Involvement events (e.g.: Creek/shore Clean-ups, Adopt-a-*** programs, volunteer monitoring, service learning opportunities, community riparian restoration activities, other)	Annually, each permittee will individually or collectively participate in, support, and/or host watershed-oriented group efforts and/or a number of events ²⁰ based on population according to the table below: ⁵ <table><tr><td>< 10,000:</td><td>1</td></tr><tr><td>10,001 – 40,000:</td><td>2</td></tr><tr><td>40,001 – 100,000:</td><td>3</td></tr><tr><td>100,001-250,000:</td><td>4</td></tr><tr><td>> 250,000:</td><td>6</td></tr><tr><td>Non-population-based agencies</td><td>2</td></tr></table>	< 10,000:	1	10,001 – 40,000:	2	40,001 – 100,000:	3	100,001-250,000:	4	> 250,000:	6	Non-population-based agencies	2	Summarize implementation in annual report, as applicable
< 10,000:	1													
10,001 – 40,000:	2													
40,001 – 100,000:	3													
100,001-250,000:	4													
> 250,000:	6													
Non-population-based agencies	2													
Outreach and Education Either as an individual co-permittee or collectively, implement outreach activities designed directly or indirectly to change specific behaviors and/or increase awareness in school-age children. Prepare and utilize targeted outreach materials. ²¹ Develop or acquire materials that:	Implementation may occur at agency, program or regional level; at a minimum, undertake and assess effectiveness of efforts annually as needed to support goals	Summarize efforts in annual report and report on success (using, where applicable, with appropriate measures such as # of participants, post-event survey)												

²⁰ Where watershed collaborative efforts or citizen involvement activities consist of a monitoring event, conference, seminar, etc., each such effort or activity may be counted as an individual event.

²¹ Priority must be given to addressing Pollutants of Concern to the extent required by Permit Provision C.3. For diazinon/pesticide-related toxicity, this includes (a) outreach and education to residents,

BMPs ¹⁵	Level of Implementation ¹⁶	Reporting ¹⁷
• Contribute to an increase in overall awareness of message • Provide information through a variety of means Utilize above materials as needed (e.g.: printed materials, newsletter/ journal articles, videos, other).		
Research to Assess Awareness of Population Served and Prioritize Future Efforts²²	At least once per permit cycle, either as an individual co-permittee or collectively, undertake research to identify and quantify audiences, knowledge, attitudes, practices, and trends based on previous research.	Report results in annual report and use to plan/update future outreach strategies

3. Water Quality-Based Requirements for Specific Pollutants of Concern/TMDL Implementation

In accordance with Provision C.1 of this Order, the Permittees shall implement enhanced control programs for pollutants that are identified as a cause or contributor to exceedances of water quality standards. The Permittees shall address the following control program requirements for POCs for which a TMDL has been adopted by the Water Board and, to the maximum extent practicable, for those POCs where a TMDL is in development or has been determined not to be necessary.

Each Discharger is responsible for addressing the requirements below. To address a requirement, a Discharger may support (financially or otherwise) another entity that will address the requirements unless otherwise specified above. Examples of such other entities include the the Bay Area Stormwater Management Agencies Association, and/or a Municipal Stormwater Program or a combination of Stormwater Programs.

retailers, and distributors and (b) more targeted outreach and education to pest control operators and landscapers. For copper, this includes (a) outreach to businesses using copper-containing algacide chemicals and (b) outreach to designers and installers of copper-containing architectural materials.

²² Priority must be given to research addressing awareness of measures addressing Pollutants of Concern to the extent required by Permit Provision C.3.

TMDL-Related Requirements – Mercury

Control Measures/BMPs	Level of Implementation	Reporting
Encourage Recycling and Collection of Mercury-Containing Equipment (including thermostats and light bulbs and switches) both at the consumer level and in terms of construction-demolition contractors	Facilitate implementation of the Universal Waste Rule through education and outreach efforts (see PIP program for further detail concerning level of implementation and assessment of level of awareness) Evaluate information on collection of materials under Universal Waste Rule	Report in Annual Report (see PI/P program for further details) Include estimate of mass of mercury collected in 4 th Annual Report due following adoption of this Order
Minimize mercury discharges (including sediment-bound mercury) from construction sites	See Construction Inspection Program Performance Standard	Report as specified in Construction Inspection Program Performance Standard
Minimize mercury discharges (including sediment-bound mercury) from significant New Development and Redevelopment Project Sites	See New and Redevelopment Program Performance Standard	Report as specified in New and Redevelopment Performance Standard
Mercury Source Identification and Abatement-Proof of Concept	Identify, qualitatively rank, and map potentially key areas with significantly elevated mercury concentrations in surface soil/sediment in Bay Area (i.e., scoping exercise based on existing literature and data). Confirm the potential presence of elevated mercury concentrations in selected highly ranked locations via visual inspections (i.e., Phase 1 level type investigation) or equivalent	Report in First Annual Report due 9 or more months after Permit's adoption Report in 2 nd Annual Report due after Permit's adoption

Municipal Regional Permit

Control Measures/BMPs	Level of Implementation	Reporting
	assessment and determine whether runoff from such locations is likely to enter municipal stormwater conveyances potentially transporting mercury to receiving waters. Validate existence of elevated mercury concentrations through surface soil/sediment sampling and analysis where visual inspections or equivalent have confirmed such suspect source areas (i.e., Phase 2 level type investigation). Where data confirms significantly elevated Hg concentrations in surface site soils/sediments at such locations, provide available information on current site owner/operators and other potentially responsible parties to other appropriate regulatory agencies to facilitate their issuance of orders for further investigation and remediation of subject sites	Report in 3rd Annual Report due after Permit's adoption Report in 4th Annual Report due after Permit's adoption
Mercury Control via Municipal Sediment Removal and Management Practices	Evaluate and, as necessary, improve existing municipal street sweeping and catch basin cleaning practices as provided in Municipal Maintenance Performance Standard Quantify the amount of	Report as provided in Municipal Maintenance Performance Standard Report in first Annual Report due 18 months following

Control Measures/BMPs	Level of Implementation	Reporting
	mercury-related sediment removed through street sweeping and catch basin cleaning practices, flood control projects, and other municipal stormwater program components. Estimate the amount of mercury-related sediment loading avoided via implementation of New Development and Redevelopment Control Measures and add to the above. Undertake a cost-benefit and feasibility study of the potential to implement further improved street sweeping (as provided in Municipal Maintenance Performance Standard) and consider additional opportunities to improve municipal sediment management practices, including as to evaluating the feasibility and cost-benefit of potential stormdrain inlet retrofits.	permit adoption and annually thereafter²³ Report in 4th Annual Report due following adoption of this Order.
Evaluate Potential for Treating Stormwater Discharges to Reduce Mercury	In cooperation with the Bay Area Clean Water Agencies (“BACWA”) perform a feasibility and cost-benefit study on the potential for reducing mercury in select stormwater discharges via diversion of certain flows to and treatment at POTWs.	Submit report to Regional Board with recommendations on a potential Basin Plan amendment in 5 th Annual Report following permit adoption
Facilitate Risk Reduction	Participate in public outreach	Report in Annual Report (see

²³ While the quantification and/or estimation methodology employed for purposes of this reporting requirement may be developed through a regional organization, such as BASMAA, the reporting required under this item shall be submitted on a Program-wide basis as contemplated in the Mercury TMDL Implementation Plan section of the Basin Plan.

Municipal Regional Permit

Control Measures/BMPs	Level of Implementation	Reporting
Efforts Addressing Mercury Risks to Human Health	and education efforts t in cooperation with BACWA and the Office of Environmental Health Hazard Assessment and Department of Health Services o address mercury risks related to consumption of impacted Bay fish (see PI/P program for further detail concerning level of implementation)	PI/P program for further details)
Fate and Transport of Mercury	Encourage the RMP to undertake studies to assess the fate and transport of mercury in San Francisco Bay	Report as per Bay-wide monitoring section of Provision C.6
Mercury Allocation for Caltrans	Develop an equitable allocation of targeted mercury load reduction in consultation with Caltrans to address Caltrans' roadway and non-roadway facilities contribution of mercury-related sediments to loadings to San Francisco Bay via urban creeks	Propose allocation within 18 months of adoption of this Order
Evaluate Mercury Methylation	Reevaluate existing data concerning methylation of mercury in Bay Area urban runoff discharges	

**TMDL-Related Requirements –
Diazinon and Related Pesticides Associated with Water Quality Toxicity**

BMP	Level of Implementation	Reporting Requirement
Adopt IPM policy or ordinance Include provisions to minimize reliance on pesticides that threaten water quality and encourage use of IPM in municipal operations and on municipal property	If not already in place, adopt policy or ordinance within 18 months of adoption of this Order	Confirm adoption of ordinance/policy in Annual Report
Training in IPM for staff and municipal contractors Train municipal employees to use integrated pest management techniques and adhere to integrated pest management practices; train employees both in agency's policy and in specific IPM practices Require training for municipal contractors	Train staff who apply pesticides (including over-the-counter pesticides) in IPM practices and the agency's IPM policy Require training for municipal contractors—both in IPM policy and specific IPM practices	Report in Annual Report on training conducted
Contract mechanisms to ensure IPM use Encourage use of IPM in contractor operations using contractual requirements	Place language in procurement documents within 18 months of adoption of this Order and to provide contractors with copy of IPM policy or ordinance following adoption	Confirm in first Annual Report due 18 months following permit adoption

BMP	Level of Implementation	Reporting Requirement
Outreach General: Undertake targeted outreach programs to encourage communities within the municipalities jurisdiction to reduce their reliance on pesticides that threaten water quality, focusing on those most likely to use pesticides that threaten water quality; participate in UPC and work with DPR, County Ag. Commissioners, and UC-IPM to coordinate education and outreach programs to minimize pesticide discharges	See PI/P Performance Standard concerning level of implementation	Report in Annual Report (see PI/P program for further details)
Outreach to Residents, Retailers and Distributors Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control. Examples of this may include: participation in OWOW program or equivalent, development and distribution of targeted information to communities, promotion of household hazardous waste collection programs, and/or development and implementation of targeted outreach campaign	See PI/P Performance Standard concerning level of implementation	Report in Annual Report (see PI/P program for further details)
Outreach to Pest Control Operators and Landscapers Work with BASMAA, the Urban Pesticide Committee, the EcoWise Certified	See PI/P Performance Standard concerning level of implementation	Report in Annual Report (see PI/P program for further details)

Municipal Regional Permit

BMP	Level of Implementation	Reporting Requirement
Program, the Bio-integral Resource Center or others to promote IPM to Pest Control Operators.		
Outreach for New Development Encourage public and private landscape irrigation management that minimizes pesticide runoff to storm drains	See New Development and Redevelopment Performance Standard and PI/P Performance Standard concerning level of implementation	Report in Annual Report per New Development and Redevelopment and PI/P Performance Standards
Monitor for pesticide-related toxicity Monitor diazinon in urban creeks and pesticide-related toxicity in both water and sediment Monitoring program design shall involve characterizing watershed, selecting representative creeks, identifying sample locations, developing sampling plans, and selecting appropriate analytical tests. Chemical and toxicity tests shall be conducted, including at a minimum: - Water column toxicity - Sediment toxicity - Diazinon concentrations in water (until the diazinon concentration target is met consistently) - Concentrations of other	As specified in Permit Provision C.6, Table 2-1	Report as specified in Permit Provision C.6; in addition compare results to diazinon and pesticide-related toxicity targets set forth in Basin Plan and if targets consistently and repeatedly exceeded, consider follow up actions as per Provision C.6, Table 2.1.A. to address the following questions: - Is toxicity observed in urban creeks caused by a pesticide? - How does observed pesticide-related toxicity in urban creeks (or pesticide concentrations contributing to such toxicity) vary in time and magnitude across urban creek watersheds, and what types of pest control practices contribute to such toxicity? - Are actions already being taken to reduce pesticide

BMP	Level of Implementation	Reporting Requirement
environmentally significant pyrethroid pesticides that pose potential water quality and sediment quality threats, as feasible.		discharges sufficient to meet the targets, and if not, what should be done differently?
Track and participate in relevant regulatory processes Track U.S. Environmental Protection Agency pesticide evaluation and registration activities as they relate to surface water quality and, when necessary, encourage the U.S. Environmental Protection Agency to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the Federal Clean Water Act and to accommodate water quality concerns within its pesticide registration process As needed, track DPR pesticide evaluation activities as they relate to surface water quality and, when necessary, encourage DPR to coordinate implementation of the California Food and Agriculture Code with California Water Code and to accommodate water quality concerns within its pesticide evaluation process.	Track and participate in regulatory decisions (may be done jointly, such as through BASMAA or CASQA).	List participation efforts in Annual Report

BMP	Level of Implementation	Reporting Requirement
Disseminate monitoring data and provide related Information to regulatory agencies Provide available data for key regulatory decisions; assemble and submit information (such as monitoring data) as needed to assist the California Department of Pesticide Regulation in ensuring that Bay Area pesticide applications comply with water quality standards	Provide data when regulatory decisions are under consideration (may be done jointly such as through BASMAA or CASQA).	Describe in Annual Report where information has been provided
Interface with County Agricultural Commissioners (or other appropriate State and/or local agencies) Report violations of pesticide practices (e.g., illegal disposal) associated with stormwater management issues to County Agricultural Commissioners (or other appropriate State and/or local agencies) when noted during industrial and construction inspections or in investigations occurring pursuant to ICID Performance Standard implementation.	See Industrial and Construction Inspection and ICID Performance Standards concerning level of implementation	Report in Annual Report as per Industrial and Construction Inspection and ICID Performance Standards
Evaluate implementation of source control actions relating to pesticides Study the effectiveness of the control measures implemented by evaluating attainment of the targets and identify effective actions to be taken in the future	Complete study as to water quality targets by conclusion of 4th year following adoption of this Order (may be done jointly, such as through BASMAA); also develop and submit workplan for potential future evaluation of sediment targets in conjunction with the above.	Submit report, recommendations, and workplan in conjunction with Annual Report due following 4 years after adoption of this Order

POC-Requirements - PCBs

Control Measures/BMPs	Level of Implementation	Reporting
Encourage Proper Removal and Disposal of PCB-Containing Electrical Equipment at Industrial Sites	Develop training materials and train municipal industrial building inspectors to identify, in the course of their inspections, improperly stored or dismantled PCB-containing electrical equipment (see Industrial Inspection Performance Standards sections concerning training) Incorporate such PCB identification into industrial inspection programs Where inspectors identify improperly stored/dismantled suspect PCB-containing electrical equipment during inspections, document incident in inspection report and refer to appropriate regulatory agencies as necessary	Report in 2 nd Annual Report due after permit adoption (see industrial inspection program for further details)
Evaluate PCBs in common building materials and construction/demolition debris	Encourage initial research by the SF Estuary Institute/RMP on the extent of PCBs present in common building materials and construction/demolition debris and whether they contribute significant loadings to SF Bay. If so, consult with researchers on potential BMPs, including education and outreach, to address the proper future management and disposal of such materials where cost effective.	

Municipal Regional Permit

Minimize PCB discharges (including sediment-bound PCBs) from construction sites	See Construction Inspection Program Performance Standard	Report as specified in Construction Inspection Program Performance Standard
Minimize PCB discharges (including sediment-bound PCBs) from significant New Development and Redevelopment Project Sites	See New and Redevelopment Program Performance Standard	Report as specified in New and Redevelopment Performance Standard
PCB Source Identification and Abatement-Proof of Concept	Review available information where PCBs have previously been documented as significant hazardous substance releases in SF Bay Area and required remediation. Assess whether remediation plans addressed controlling potentially significant PCB discharges to urban runoff. Provide Regional Board with a list of sites and potentially responsible parties of sites where significant PCB discharges to urban runoff may require further investigation and regulatory action	Report in 2 nd Annual Report due after Permit's adoption
PCB Control via Municipal Sediment Removal and Management Practices	Evaluate existing municipal street sweeping and catch basin cleaning practices as provided in Municipal Maintenance Performance Standard Quantify the amount of PCB-related sediment removed through street sweeping and catch basin cleaning practices, flood control projects, and other municipal stormwater program components.	Report as provided in Municipal Maintenance Performance Standard Report in first Annual Report due 18 months following permit adoption and annually thereafter

Municipal Regional Permit

	Estimate the amount of PCB-related sediment loading avoided via implementation of other aspects of the municipal stormwater management program and add to the above. Undertake a cost-benefit and feasibility study of the potential to implement improved street sweeping (as provided in Municipal Maintenance Performance Standard) and consider additional opportunities to improve municipal sediment management practices, including as to evaluating the feasibility and cost-benefit of potential stormdrain inlet retrofits.	Report in 4 th Annual Report due following adoption of this Order.
Evaluate Potential for Treating Stormwater Discharges to Reduce PCBs	In cooperation with BACWA perform a feasibility and cost-benefit study on the potential for reducing PCBs in select stormwater discharges via diversion of certain flows to and treatment at POTWs.	Submit report to Regional Board with recommendations on a potential Basin Plan amendment in 5 th Annual Report following permit adoption
Facilitate Risk Reduction Efforts Addressing PCB-Related Risks to Human Health	Participate in public outreach and education efforts in cooperation with BACWA and the Office of Environmental Health Hazard Assessment and Department of Health Services to address PCB-related risks related to consumption of impacted Bay fish (see PI/P program for further detail concerning level of implementation)	Report in Annual Report (see PI/P program for further details)

Municipal Regional Permit

Fate and Transport of PCB	Encourage the RMP to undertake studies to assess the fate and transport of PCBs in San Francisco Bay	Report as per Bay-wide monitoring section of Provision Cc.6
PCB Allocation for Caltrans	Develop an equitable allocation of targeted PCB load reduction in consultation with Caltrans to address Caltrans' roadway and non-roadway facilities contribution of PCB-related sediments to loadings to San Francisco Bay via urban creeks	Propose allocation within 18 months of adoption of this Order

POC Requirements - Copper

Control Measures/BMPs	Level of Implementation	Reporting
Brake pads	Continue brake pad partnership ("BPP") to facilitate completion of current Proposition 13 copper fate and transport study and potentially encourage legislation to regulate copper content of brake pads to MEP	Report on status of participation in BPP in Annual Report.

Control Measures/BMPs	Level of Implementation	Reporting
Copper containing pool, spa and fountain chemicals	Conduct targeted education and outreach on potential water quality impacts of pool and spa-related chemicals (see PI/P program for further detail concerning level of implementation)	Report in Annual Report (see PI/P program for further details)
	Enforce non-stormwater discharge prohibition including by applying appropriate BMPs which will address copper-containing pool chemical, as per permit Provision C. 4; update local legal authority and BMPs to the extent necessary	Report in Annual Report (see Provision C.4 for further details)
Addressing copper-containing architectural features during construction	Enforce non-stormwater discharge prohibition with respect to potential discharges from copper-related building surface cleaning activities occurring during construction, including by applying appropriate copper surface-cleaning BMPs, as per permit Provision C. 4; update local legal authority and BMPs to the extent necessary	Report in Annual Report (see Provision C.4 for further details)
	Conduct training addressing BMPs for cleaning and treating copper-related architectural features	Report in Annual Report

4. Non-Stormwater Discharges

a. Exempted Discharges

In carrying out Prohibition A of this Order, the following non-stormwater discharges are not prohibited unless they are identified by the Permittees or the Regional Board as sources of pollutants to receiving waters:

Municipal Regional Permit

- i. Flows from riparian habitats or wetlands;
- ii. Diverted stream flows (otherwise regulated, such as through a streambed alteration agreement with CDF&G);
- iii. Springs;
- iv. Rising ground waters;
- v. Discharges or flows from emergency fire fighting activities, and
- vi. Uncontaminated groundwater infiltration.

If any of the above categories of discharges, or sources of such discharges, are identified as sources of pollutants to receiving waters, then such categories or sources shall be addressed as conditionally exempted discharges in accordance with Provision C.4.b.

b. Conditionally Exempted Discharges

The following non-stormwater discharges are not prohibited if they have been regulated by the Regional Board pursuant to previous NPDES permits/WDRs/WDR waivers, or for new non-stormwater discharges, appropriate control measures to prevent or eliminate adverse impacts of such sources are developed and implemented either by the Permittee or the owner or operator of the facility from which the non-stormwater discharge emanates pursuant to Table C.4.b below.

The Permittees may propose additions or modifications to Table C.4.b below with appropriate justification. The Regional Board shall act on such submissions in accordance with Provision C.9 and the NPDES permit regulations and any approved revisions shall be deemed incorporated into Table C.4.b and this permit.

Table C.4.b
Conditionally Exempt Non-Stormwater Discharges

Conditionally Exempted Discharge	Potential Areas/ Contaminants Of Concern To Be Addressed²⁴	BMPs/Control Measures	Recording/Reporting
(i) Pumped Groundwater, Flows from Foundation Drains, Water from Crawl Space Pumps, Flows from Footing Drains	• Visible sediment and/or turbidity > 50 NTUs • Temperature + 5 degrees F of ambient condition of receiving water • pH <6.5 or >8.5 • Chlorine residual >1.5 mg/L • Presence of heavy metals, oil and grease, VOCs/SVOCs, pesticides in concentrations > PRGs	1. Municipality to require dischargers to: A. Uncontaminated groundwater: • Minimize discharge of untreated groundwater > 100 gpm to storm drains or other municipal storm water conveyances where practicable alternatives for disposal exist (e.g., POTW, irrigation, evaporation pond) • Notify the Water Board and local agencies before discharging uncontaminated groundwater >100 gpm to storm drains/conveyances and comply with any conditions imposed B. Groundwater suspected of being contaminated:	Confirm in next occurring annual report that ordinances or other legal authorities implementing BMP/Control Measure requirements have been put into place within 18 months following permit adoption In addition, municipality to provide summary in annual report of complaints received and inspections

²⁴ These are guidelines to be used in conjunction with visible observations and other information available to reach best professional judgment engineering determinations concerning the level of implementation of best management practices (BMPs) and other control measures as set forth herein.

Municipal Regional Permit

Conditionally Exempted Discharge	Potential Areas/ Contaminants Of Concern To Be Addressed ²⁴	BMPs/Control Measures	Recording/Reporting
		• Properly manage groundwater discharge based on type of land use/facility in question • Comply with applicable Waste Discharge Requirements to protect water quality consistent with the existing effluent limitations in the NPDES General Permit for “Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by VOCs” 2. In addition to the above, Municipality to promptly respond to any complaint calls received regarding the above discharges, perform visual inspection of area of such discharges, assess potential for contamination/erosion, and if contamination/erosion or potential for contamination/erosion exists, impose additional control requirements and/or refer to Water Board and/or City or District Attorney, as	

Municipal Regional Permit

Conditionally Exempted Discharge	Potential Areas/ Contaminants Of Concern To Be Addressed ²⁴	BMPs/Control Measures	Recording/Reporting
		appropriate.	
(ii) Irrigation Water, Landscape Irrigation, Lawn or Garden Watering	Sediment, Nutrients, and Pesticide Releases From Lawns and Landscape Areas	Municipality to promote measures that minimize runoff and pollutant loading from excess irrigation via - Promoting conservation programs that minimize discharges from lawn watering and landscape irrigation practices - Promoting outreach messages regarding the use of less toxic options for pest control and landscape management - Promoting the use of drought tolerant, native vegetation to minimize landscape irrigation demands - Promoting outreach messages which encourage appropriate applications of water needed for irrigation and other watering practices.	Provide summary in annual report in conjunction with PI/P reporting
(iii) Air conditioning condensate	Turbidity > 50 NTUs Temperature + 5 degrees F of ambient condition	1. For small air conditioning units: – municipality to	Provide summary in annual report in conjunction with PI/P reporting

Conditionally Exempted Discharge	Potential Areas/ Contaminants Of Concern To Be Addressed ²⁴	BMPs/Control Measures	Recording/Reporting
	Algae inhibitors, corrosion control chemicals, descaling agents associated with causing toxicity > LC50 as further described in the Basin Plan	encourage users (e.g., via distribution of outreach materials to businesses and homeowners) to direct condensate to landscaped areas (such as vegetated swales) or other pervious surfaces that do not lead to storm drain inlets 2. For large air conditioning units to be installed at commercial or industrial facilities: – municipality to require users to discharge condensate to landscaped areas (such as vegetated swales), direct discharge to POTW (with appropriate POTW approval), and/or, if otherwise infeasible, to control discharge rate and location to minimize sediment transport, toxicity and thermal effects and/or scouring/ sediment transport 3. For large air conditioning units used for commercial or industrial cooling towers:	Confirm in next occurring annual report that ordinances or other legal authorities implementing BMP/control measure has been put into place within 18 months following permit adoption In addition, municipality to provide summary in annual report of commercial or industrial cooling towers or facilities for which requirements have been imposed (unless they are already regulated via an NPDES permit or have directed discharge to a POTW)

Municipal Regional Permit

Conditionally Exempted Discharge	Potential Areas/ Contaminants Of Concern To Be Addressed ²⁴	BMPs/Control Measures	Recording/Reporting
		– municipality to require users to discharge condensate to landscaped areas (such as vegetated swales), direct discharge to POTW (with appropriate POTW approval), and/or, if otherwise infeasible, to control discharge rate and location to minimize sediment transport, toxicity and thermal effects and/or scouring/ sediment transport	
(iv) Planned and unplanned discharges from potable water sources, water line and hydrant flushing	• Temperature + 5 degrees F of ambient condition • Chlorine residual >1.5 mg/L	1. For small planned discharges (< 50,000 gallons): • Avoid or minimize direct discharges and associated impacts via measures such as: ○ Check and clear flow path. Sweep up leaves and litter in flow path. ○ Clean out storm drain	Provide summary of

Conditionally Exempted Discharge	Potential Areas/ Contaminants Of Concern To Be Addressed ²⁴	BMPs/Control Measures	Recording/Reporting
		inlets/catch basins where discharges may enter. ○ Direct flow to minimize erosion 2. For significant planned discharges (> 50,000 gallons): ● Avoid or minimize direct discharges and associated impacts via implementing control measures such as the following: ○ Check and clear immediate flow path ○ Sweep up leaves and litter in immediate flow path ○ Clean out storm drain inlets/catch basins where discharges may enter ○ Demonstrate that discharges from water lines and potable water sources are dechlorinated; ○ Control flow rate to minimize sediment transport to the storm	significant planned discharges from municipal sources and control measures implemented in annual report

Conditionally Exempted Discharge	Potential Areas/ Contaminants Of Concern To Be Addressed ²⁴	BMPs/Control Measures	Recording/Reporting
		drain, as necessary 3. For unplanned discharges, control or reduce the discharge flow, as quickly possible and proceed with repairs. Attempt to implement BMPs for erosion and chlorine controls as described above.	Report unplanned discharge incidents in excess of 50,000 gallons from municipal sources to Water Board as quickly as practicable without impeding response to control/reduce flow
(v) Flows from non-commercial car washing activities	- Soaps and surfactants - Automotive fluid residues	Municipality to promote public education and outreach campaign to educate residents about harms and better methods of reducing pollutants from car washing discharges. Examples of outreach messages include, but are not limited to 1) having cars washed at commercial facilities that are plumbed to the sanitary sewer; 2) not	Provide summary in annual report in conjunction with PI/P reporting

Municipal Regional Permit

Conditionally Exempted Discharge	Potential Areas/ Contaminants Of Concern To Be Addressed ²⁴	BMPs/Control Measures	Recording/Reporting
		using soap; 3) minimizing water use; and 4) washing cars over landscaped areas.	
(vi) Swimming pool, hot tub, spa, and fountain water discharges, including discharges from filter backwash operations	• Chlorine residual >1.5 mg/L • Algae inhibitors, corrosion control chemicals, descaling agents associated with causing toxicity > LC50, as further described in the Basin Plan	Municipality to promote measures that • Encourage swimming pools, hot tubs, spas and fountains to connect discharges to the sanitary sewer (where feasible and POTW will accept). • Avoid discharges from swimming pools, hot tubs, spas and fountains to storm drain collection systems where there are other feasible disposal alternatives (e.g., disposal to sanitary sewer or landscaped areas). • In areas where discharge to the sanitary sewer is not accessible or feasible, encourage dechlorination of discharges from swimming pools, hot tubs, spas and fountains and minimization of erosive flows/ sediment transport. • Avoid usage of copper-based algaecide products	Provide summary in Annual Report in conjunction with PI/P reporting

Municipal Regional Permit

Conditionally Exempted Discharge	Potential Areas/ Contaminants Of Concern To Be Addressed ²⁴	BMPs/Control Measures	Recording/Reporting
		which have the potential to degrade water quality and beneficial uses. • For discharges to landscape, avoid fully saturated soils and minimize related runoff • Avoid discharge of water that contains excessive residual chlorine to storm drain collection systems or water bodies • Encourage pool owners to collect and dispose of filter backwash at an appropriate disposal facility • Encourage pool owners to use automated cleaning systems that treat and recycle filter backwash	

c. Permit Authorization for Exempted Discharges

- i. Discharges of non-stormwater from sources owned or operated by the Permittees are authorized and permitted by this Order, if they are delineated in Provision C.4.a or b and otherwise in accordance with the conditions of this Provision.
- ii. The Regional Board may require dischargers of non-stormwater other than the Permittees to apply for and obtain coverage under an NPDES permit and comply with the control measures developed by the Permittees pursuant to this Provision. Non-stormwater discharges that are in compliance with such control measures may be accepted by the Permittees and are not subject to Prohibition A.
- iii. The Permittees may propose, as part of their Annual Reports or Workplans/Updates under Provision C.5.b of this Order, additional categories of non-stormwater discharges to be included in the exemption to Prohibition A. Such proposals are subject to approval by the Regional Board in accordance with the NPDES permit regulations.

5. Annual Reports and Workplans

a. Annual Reports

The Permittees shall submit an Annual Report to the Regional Board each year according to the following schedule, documenting the status of the Permittees' activities (including those resulting from participation in a Program and other collaborative efforts) during the previous fiscal year. Annual Reports shall be submitted by Permittees as follows:

Permittees in Alameda County	[date]
Permittees in Fairfield/Suisun	[date]
Permittees in Contra Costa	[date]
Permittees in San Mateo	[date]
Permittees in Santa Clara	[date]
Vallejo	[date]

The Annual Report shall include a compilation of deliverables and milestones completed during the previous twelve-month period. In the Annual Reports, the Permittees shall propose pertinent updates, improvements, or revisions to Performance Standards ("Updates"), which the Regional Board shall act on in accordance with Provision C.12. As part of the Annual Report process, each Permittee shall evaluate the effectiveness of the activities completed during the reporting period.

Direct and indirect measures of effectiveness may include, but are not limited to, conformance with established Performance Standards, quantitative monitoring to assess the

effectiveness of control measures, measurements or estimates of pollutant load reductions, detailed accounting of Program accomplishments, funds expended, or staff hours utilized. Methods to improve effectiveness in the implementation of tasks and activities, including development of new, or modification of existing, Performance Standards, shall be identified through the Program's review and improvement process, where appropriate. The Annual Report information shall be adequate to describe each Permittee's compliance status with respect to the provisions of this Order.

b. Annual Workplans and Updates

i. Workplans. To obtain feedback from the Regional Board staff, the Permittees may submit Workplans that describe their proposed implementation for addressing the Provisions of this Order during the next fiscal year. The Workplans may consider the status of implementation of current year activities and actions of the Permittees, problems encountered, and proposed solutions, and address any comments received from the Executive Officer on the previous year's Annual Report. The Workplans may include clearly defined tasks, responsibilities, and schedules for implementation of Program and Permittee actions for the next fiscal year.

ii. Updates. In the event that the Regional Board has not conducted a hearing on an Update proposed by a Permittee within 120 days of its submission in its preceding Annual Report, the Permittee may petition the Regional Board to act on the proposed Update so as to allow planning to occur in advance of the onset of the next fiscal year when further implementation of Performance Standards is scheduled to proceed.

6. Monitoring Program

The Permittees shall comply with the Monitoring Requirements, including types, intervals, and frequencies, provided for in Table C.6.b.1 below. Reports on the progress and results of the Monitoring Requirements shall be submitted yearly with the Annual Reports.²⁵

Water Quality Monitoring

a. Monitoring Program Objectives

The objectives of the Monitoring Program are to:

- Characterize water quality in urban streams
- Assess impacts of urban runoff
- Identify pollutant sources to urban runoff
- Assess progress in reducing pollutants of concern in urban runoff
- Evaluate the effectiveness of urban runoff programs and associated BMPs

Ultimately, the results of the monitoring program must inform strategies for achieving reductions in pollutant loadings in urban runoff to help protect and enhance the beneficial uses of the receiving waters in the Dischargers' jurisdictions and the San Francisco Bay.

²⁵ For purposes of this Provision, monitoring year = fiscal year, July 1 - June 30.

b. Monitoring Responsibilities

b.1 Status and Trends Monitoring in Local Receiving Waters. Status and Trends monitoring is intended to answer the following management questions:

- Are conditions in local receiving waters supportive of or likely to be supportive of beneficial uses?
- Are conditions in local receiving waters getting better or worse?

b.1.a. Subject to section c below, each Discharger²⁶ shall conduct Status and Trends Monitoring of the types, frequencies, and intervals as described in Table C.6.b.1. Table C.6.b.1 also states the minimum number of locations/sites and/or stream miles at which each indicator must be sampled in a given year. Dischargers shall conduct sampling pursuant to Table C.6.b.1 in a manner which will address the water bodies that form the main receiving water²⁷ for each of their major watersheds²⁸ over the course of a ten-year rotation.

b.2 Long Term Monitoring. The Dischargers shall conduct monitoring with respect to long term trends in local receiving waters other than San Francisco Bay through the types, frequencies, intervals and locations of long term monitoring achieved through their participation, via the special surcharge attached to their annual NPDES permit fees, in the Surface Water Ambient Monitoring Program (SWAMP).

b.3 Assessment. At the conclusion of the fourth year of the term of this permit, in lieu of conducting monitoring required by paragraph b.1 above, during the fifth year of this permit's term, the Dischargers shall assess status and trends in local receiving waters by evaluating the data available pursuant to paragraph b.1 and any data/information made available based on their contributions to the SWAMP pursuant to paragraph b.2 above and submit a report on the results of the assessment to the Executive Officer by no later than 180 days prior to the expiration of this Order.

b.4 Bay-Wide Monitoring. Bay-wide monitoring is intended to answer the following management questions:

- Are conditions in San Francisco Bay supportive of or likely to be supportive of beneficial uses?
- Are conditions in San Francisco Bay getting better or worse?

²⁶ It is acceptable and standard practice for Stormwater Programs to conduct Status and Trends Monitoring on behalf of all the Dischargers within their Programs, supported by contributions from Dischargers.

²⁷ To keep highly urbanized creeks as the major focus of Status and Trends monitoring, the following criteria define the main receiving water of a major watershed: 1) at least 50% of surrounding land uses are urban (e.g., commercial, industrial and/or residential, 2) surrounding agricultural land uses are very limited, and 3) surrounding impervious area is greater than 65%.

²⁸ The major watersheds associated with each of the Dischargers have been defined by their submissions under prior permits. See 40 C.F.R. 122.26(d)(1) and (2).

Dischargers may address their responsibilities for Bay-wide monitoring through participation in monitoring conducted in the types, frequencies, intervals and locations as set forth in the San Francisco Estuary Regional Monitoring Program for Trace Substances (RMP), which is incorporated herein by reference. Any Discharger that elects not to participate in the RMP shall request, within 3 months of such election, Water Board approval of an alternative program for conducting monitoring with regard to water quality in San Francisco Bay. The proposal submitted to the Water Board for approval shall set forth the types, frequencies, intervals, and locations of monitoring of Bay waters.

Table C.6.b.1 Status and Trends Monitoring Elements

Monitoring Categories/Indicators (Type)	Method ²⁹	Level of Implementation			Trigger for Potential Follow-up ³⁰
		Minimum Sampling Frequency ³¹	Minimum Sampling Interval ³²	Minimum # Sample Sites/Year ³³	
Local Watersheds					
1. Aquatic Life Use Indicators					
a. Biological Assessment – Fish ³⁴	EPA RBP ³⁵	1/yr (Fall Sampling)	Grab sample	5/3/0	N/A (no IBI, for conditions only)
b. Biological Assessment – BMIs (Includes Qualitative Physical Habitat Measurements and General Water Quality Parameters)	CSBP ³⁶ [group Triads together]	1/yr (Spring Sampling)	Grab sample	25/15/5	Triad: IBI score that indicates substantially degraded community

²⁹ Refers to field protocol, instrumentation and/or laboratory protocol.

³⁰ See e.g., Table C.6.b.2. With respect to triggers based on the Triad approach (Chapman, PM (1990). The Sediment Quality Triad approach to determining pollution-induced degradation. Science of the Total Environment. Vol. 97-98, pp. 815-825), a single line of evidence is not sufficient and a weight of evidence approach based on the three lines of evidence to be considered shall be employed.

³¹ Refers to the number of sampling events at a specific site in a given year.

³² Refers to the duration of sampling event (e.g., grab sample or every 15 mins. for 1 hr/24hrs/1 week).

³³ Provisional number of sampling sites is tiered based on the relative population in each Stormwater Program. Labeling system: Santa Clara Valley & Alameda Countywide / Contra Costa & San Mateo Countywide / Vallejo & Fairfield-Suisun Programs

³⁴ Only conducted in creeks that are not known to contain threatened or endangered species.

³⁵ EPA Rapid Bioassessment Method for Fish, Macroinvertebrates and Periphyton (Barbour et al. 1999).

³⁶ California Stream Bioassessment Procedure (California Department of Fish and Game, 2003).

Municipal Regional Permit

Monitoring Categories/Indicators (Type)	Method ²⁹	Level of Implementation		Minimum # Sample Sites/Year ³³	Trigger for Potential Follow-up ³⁰
		Minimum Sampling Frequency ³¹	Minimum Sampling Interval ³²		
c. General Water Quality ³⁷	Multi-Parameter Probe	1/yr (During the Most Relevant Time of Year)	15 minute intervals for 1-2 weeks	3/2/1	Water consistently or repeatedly exceeds one or more water quality standard or established threshold ³⁸
d. Temperature	Hobo Temperature Logger or equivalent	1/yr (During the Most Relevant Time of Year)	15 minute intervals for either: a) 1-year or b) 1-2 weeks	3/2/1	Water consistently or repeatedly exceeds applicable temperature threshold ³⁹
e. Diazinon- Water	Applicable SWAMP or Comparable Method	2/yr (1/Dry Season & 1 Storm Event)	Grab or composite sample	3/2/0 (subject to regional plan)	Consistent and repeated evidence that concentrations of diazinon in water are in excess of target identified in Basin Plan
f. Chemistry – Bedded Sediment ⁴⁰	Applicable SWAMP or Comparable Method Inc. grain size	2/yr (Beginning and End of Dry Season)	Grab Sample	6/4/0	Consistent and repeated evidence of adverse freshwater effects are related to concentrations of POCs in sediment
g. Toxicity – Water Column	Applicable SWAMP or Comparable Method	2/yr (1/Dry Season & 1 Storm Event)	Grab or composite sample	3/2/0 (subject to regional plan)	Greater/= to 20% decrease in survival compared to control in at least one sampling event

³⁷ Includes Dissolved Oxygen, Temperature, Conductivity, and pH.

³⁸ e.g., if dissolved oxygen repeatedly falls below threshold in warm months, or spikes with no obvious natural explanation are observed

³⁹ i.e., if temperatures repeatedly or consistently exceeds applicable threshold at various seasons or times or day, or spikes with no obvious natural explanation are observed

⁴⁰ Could include : Cu, Ni, Hg, PCBs, DDT, Chlordane, Dieldrin and other contaminants of interest (e.g., environmentally significant pyrethroid pesticides)

Municipal Regional Permit

Monitoring Categories/Indicators (Type)	Method ²⁹	Level of Implementation		Minimum # Sample Sites/Year ³³	Trigger for Potential Follow-up ³⁰
		Minimum Sampling Frequency ³¹	Minimum Sampling Interval ³²		
h. Toxicity – Bedded Sediment	Applicable SWAMP or Comparable Method	1-2/yr (Beginning and End of Dry Season)	Grab sample	3/2/0	Triad: Greater/= to 20% decrease in survival compared to control in at least one sampling event.
i. Chlorine (Free and Total)	Field Test Strips or Equivalent	In conjunction w/ other sampling events	Grab sample	25/15/4 (to be performed with BMIs)	After immediate re-sampling, concentrations remain > 0.1 mg/L
2. Recreational and Multiple Use Indicators					
a. Pathogen Indicators ⁴¹	Applicable SWAMP or Comparable Method	1 yr (During summer)	Follow EPA protocol	5/5 (but Fairfield: 5 sites twice in permit period)	Exceedence of EPA/Basin Plan criteria resulting in level or human exposure of concern
b. Trash	Most recent protocol per Trash component of ICID Program	Implement before & after management actions have been implemented per Trash component of ICID program	N/A	12/8/2	Take action on sites with high concentrations of trash via Trash Component of ICID Program
c. Stream Survey	USA ⁴² or equivalent	1 watershed/yr	N/A	Stream miles/yr: 9/6/1	N/A

⁴¹ Includes Fecal Coliform and *E. Coli*.

⁴² Center for Watershed Protection, Manual 10: *Unified Stream Assessment: A User's Manual*, February 2005

Table C.6.b.2 Possible Follow-up to Status & Trends Monitoring

Monitoring Category	Examples of potential follow up actions
General Water Quality, Temperature	Evaluate the data and (a) conduct appropriate follow-up action, or (b) design and implement of a more refined spatial or temporal follow-up monitoring project, or (c) conduct a more integrative limiting factors analysis. ⁴³ Re-evaluate all follow-up actions.
Triad Results (Pollutants of Concern – in bedded sediment, benthic community alteration, toxicity in bedded sediment)	Develop and conduct focused studies based on Triad results to determine the extent and magnitude of the potential impact. Determine sources of POCs and take management action regarding high priority sites. ⁴⁴ Evaluate effectiveness through follow up assessment.
Toxicity in Water Column	• Toxicity tests at higher dilutions to better quantify toxicity. • Use TIE to identify contaminants of concern. • Determine spatial & temporal extent of the toxicity.
Chlorine (Free and Total)	Resample, notify applicable potable-water agency and/or other possible sources such as nearby chlorine-using businesses, and attempt to determine the source of chlorine discharge. Refer discharger to illicit discharge program.
Pathogen Indicators	Identify source using sanitary survey methodologies or microbial source tracking and recommend management action; Resample using increased spatial intensity and at greater frequency during high-use periods; Evaluate existence of exposure pathways, level of likely exposure (if any)
Trash Assessment – Baseline & Trends	Determine sources of trash and take management action regarding high priority sites. ⁴⁵ Evaluate effectiveness through follow up assessment.
BMP Effectiveness Studies	Assess effectiveness of specified best management practices through appropriate studies, literature reviews, etc.

⁴³ A limiting factors analysis is a process of data analysis conducted to determine the factors that may be affecting aquatic species in a water body.

⁴⁴ See Provision C.3.

⁴⁵ Discharger personnel familiar with trash sites through the Discharger's jurisdiction, such as municipal maintenance personnel, shall prioritize trash sites for management action. See Trash component of ICID Performance Standard.

Municipal Regional Permit

c. Implementation of Monitoring Responsibilities

c.1 Each Discharger is responsible for ensuring that the monitoring required by this Provision is completed. To meet a monitoring requirement, a Discharger may support (financially or otherwise) another entity that will conduct the monitoring in accordance with the requirements specified herein. Other entities may include the Regional Status and Trends Monitoring group described in sub-provision c.2, the Bay Area Stormwater Management Agencies Association, and/or a Municipal Stormwater Program or a combination of Stormwater Programs as appropriate for the type of monitoring conducted. Dischargers may fulfill requirements of this Provision using data collected by citizen monitors or other non-discharger governmental and non-governmental entities provided the data are demonstrated to meet the data quality objectives described in sub-Provision f.

c.2 Option for Regional Collaboration in Status and Trends Monitoring

c.2.a.1 In order to foster an approach to Status & Trends monitoring that is statistically stronger, more cost efficient, and/or that has cross benefits with the Regional Monitoring Program and/or the Surface Water Ambient Monitoring Program, the Dischargers may form a collective group to conduct Status and Trends Monitoring on a regional basis. This group would develop and implement a Regional Status and Trends Monitoring Plan that produces at least the level of information as that generated by sub-Provision b herein. This group could include representatives from Bay Area Stormwater Programs, environmental and other NGOs, and non-Discharger governmental agencies, such as resource agencies and Board staff.

c.2.a.2 The Regional Status and Trends Monitoring Plan must be submitted to the Executive Officer, for Board approval, within 12 months of the date of this permit and must be implemented beginning in the second year of the permit term. If such Regional Status and Trends Monitoring Plan is not submitted within 12 months of the date of this permit, then all Dischargers must conduct the Status & Trends Monitoring contained in sub-Provision b commencing in the second year of the permit term. Discharger Status and Trends Monitoring may be replaced by Regional Status and Trends Monitoring in a subsequent year following approval of a Regional Status and Trends Monitoring Plan by the Water Board.

c.2.a.3 In the case that some, but not all, Dischargers participate in Regional Status and Trends Monitoring, then the nonparticipating Dischargers shall conduct monitoring as set forth in sub-provision c.1 herein.

d. Citizen Monitoring & Participation

d.1 Dischargers shall encourage Citizen Monitoring.

d.2 Dischargers shall demonstrate at least annually that they have encouraged citizen and stakeholder observations and reporting of water body conditions.

e. Data Analysis

Dischargers shall evaluate all monitoring data they collect pursuant to this Provision during the reporting period. Such data should include reasonably obtainable water and/or sediment

Municipal Regional Permit

quality data of good quality collected since the last evaluation. Such data could include that collected by a Program as a whole; individual Dischargers; Publicly Owned Treatment Works; Flood Control Districts; Regional Water Quality Control Board; citizen and non-governmental organizations, and Regional Monitoring Programs.

In conjunction with sub-Provision b.2, Dischargers shall conduct, and discuss in their Annual Monitoring Reports, data evaluation, potentially including the following, as allowed by the type and completeness of the data collected:

- Evaluate the effectiveness of existing control measures;
- Develop hypotheses to investigate ;
- Identify and prioritize water quality problems;
- Identify potential sources of the water quality problems;
- Recommend future monitoring; and
- Identify management measures to address water quality problems.

f. Monitoring Protocols and Data Quality

All data must be SWAMP comparable, i.e., minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Management Plan for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent Standard Operating Procedures.

g. Reporting

g.1 Dischargers shall submit monitoring reports as shown in Table g.1.

g.2 With the exception of Electronic Data Reports, all monitoring reports shall include the following:

- a. An executive summary;
- b. A description of monitoring station locations by latitude and longitude coordinates or other appropriate descriptor, frequency of sampling, quality assurance/quality control procedures and sampling and analysis protocols;
- c. All QA-QC'd available data/results, with graphical summaries where appropriate;
- d. A discussion of compliance with and deviations from the Data Quality Assurance / Quality Control Plan and Sampling and Analysis Plan;
- e. Comprehensive interpretations and conclusion as contemplated under sub-Provision e;

g.3 Based on sub-provision g.2, the report shall identify potential sources of the problems, and recommend future monitoring and future actions; and

g.4 In cases of regional or Program-wide collaboration, a single report may be submitted on behalf of all collaborating Dischargers.

g.5 Dischargers shall begin submitting Electronic Data Reports in a format compatible with the SWAMP database.⁴⁶ Dischargers shall make electronic reports available to the general public.

⁴⁶ Data are submitted on a standard spreadsheet.

Table g.1 Monitoring Reporting Requirements

Monitoring Report	Submittal Date	Contents and Format
Status and Trends Electronic Data Report	By May 1 each year (for each previous fiscal year)	Electronic data that have been QA.QC'd and in formats consistent with SWAMP formats where such SWAMP formats have been established
Status and Trends Report	By May 1 each yr (for each previous fiscal year)	○ All items required in sub-Provision g.2; and ○ Discussions of how reporting period results relate to previous years' data, if any exist. ○ Submit 2 paper and 1 electronic copy.

7. Hydromodification Management

BMPs	Level of Implementation⁴⁷	Reporting
Municipalities ⁴⁸ shall implement a Hydromodification Management Plan ("HMP")	Management Standard for HMPs – post-project runoff peak rates and durations shall not exceed pre-project rates and durations over an established range of flows,⁴⁹ where such increases would cause increased erosion or other impacts to beneficial uses of streams. Threshold of 1 acre or more of impervious surface is established for meeting HMP requirements at new and redevelopment projects in land use categories specified	For each project approved and made subject to hydromodification control requirements, include, in addition to the information reported concerning treatment controls, the following in Annual Report: • Site design measures BMPs that accomplish flow reduction. • Post-construction flow control BMPs onsite • Flow control measures offsite or instream • Hydraulic sizing criteria

⁴⁷ The level of implementation specified below is subject to the following as set forth in the performance standard for new and redevelopment: 1) limitations on use of infiltration measures, 2) alternative compliance based on impracticability, 3) alternative certification of adherence to numeric design, and 4) operation and maintenance of treatment measures.

⁴⁸ Vallejo shall be given 24 months from the approval of this Order to adopt and implement a HMP meeting the criteria set forth in this section, as applicable.

⁴⁹ The range of flow rates for which post-project runoff durations shall not exceed pre-project runoff durations shall be based on what is determined to be protective of local streams in the municipality's approved HMP. Integrated management practices using the design procedure, criteria, and sizing factors equivalent to those specified in the Contra Costa Clean Water Program's *Stormwater C.3 Guidebook* (IMPs) may be utilized to meet the requirements.

⁵⁰ The exemptions from treatment measures specified in the new and redevelopment performance standard also are deemed to apply with respect to implementation of these HMP requirements.

BMPs	Level of Implementation ⁴⁷	Reporting
	for treatment measures in new and redevelopment performance standard ⁵⁰	used • Operation & maintenance responsibility mechanism In addition, include in Fourth Annual Report: • Discussion of effectiveness of program • Proposed changes to improve program

8. Watershed Management

The Permittees shall implement watershed management measures based on identification of relevant watershed characteristics (land imperviousness, conditions of creeks, land uses, etc.) and identification of control measures and other actions that are appropriately implemented on a watershed basis with the recognition that there may be unique values, problems, goals, and strategies specific to individual watersheds. Watershed management measures also seek to develop and implement the most cost effective approaches to solving identified problems and to coordinate these activities with other related programs.

a. To help inform the implementation of watershed management measures, the Dischargers shall conduct Water Body Assessments (sometimes referred to as watershed assessments) as set forth in paragraph 8.b below. A Water Body Assessment involves the collection and analysis of information from multiple sources and focused on a single water body to draw conclusions concerning the historical, current and potential future condition and functions of that water body to support decision-making and watershed management actions. The scope of a Water Body Assessment is the stream/water body as a whole and includes both urban and upland reaches to the extent necessary to assist with the determination of urban-related water quality issues.

b. Dischargers shall complete the Water Body Assessments shown in Table 8.1 by the conclusion of the fourth year of this Permit's term. These Water Body Assessments shall be conducted to determine causes of problems in water bodies; what reaches should be protected; and what reaches can be restored.

Municipal Regional Permit

Table 8.1 Required Water Body Assessments

Program to Conduct the Water Body Assessment	Water Body to be Assessed	Watershed Area (mi²)
Alameda Countywide Clean Water Program		
Contra Costa Clean Water Program		
Fairfield-Suisun Urban Runoff Management Program		
San Mateo Stormwater Pollution Prevention Program		
Santa Clara Valley Urban Runoff Pollution Prevention Program		

c. Based on the Water Body Assessments conducted pursuant to Paragraph 8.b above, each Permittee shall evaluate its implementation of watershed management activities and outline steps needed for improvement in addressing priorities within each watershed assessed. Such evaluation shall be submitted in conjunction with the Annual Report due following four years following adoption of this Permit.

9. Initiation of Modifications

It is anticipated that the requirements specified in this Permit may need to be modified, revised, or amended from time to time to respond to new information or changed conditions and to incorporate more effective approaches to pollutant control. Requests for changes may be initiated by the Executive Officer or by the Permittees. Any such changes shall be made in accordance with applicable State and federal regulations for permit modifications. Minor changes may be made with the Executive Officer's approval and will be brought to the Regional Board as information items and the Permittees and interested parties will be notified accordingly. If proposed changes imply a major

Municipal Regional Permit

revision, the Executive Officer shall bring such changes before the Regional Board as permit amendments and notify the Permittees and interested parties accordingly.

10. Modifications to this Order

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

- a. To address significant changed conditions identified in the technical reports required by the Regional Water Board that were unknown at the time of the issuance of this Order;
 - b. To incorporate applicable requirements of statewide water quality control plans adopted by the State Water Board or amendments to the Basin Plan approved by the State Water Board; or
 - c. To comply with any applicable requirements, guidelines, or regulations issued or approved under Section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order. The Order as modified or reissued under this paragraph shall also contain any other requirements of the CWA then applicable.
11. Each of the Permittees shall comply with all parts of the Standard Provisions contained in Appendix A of this Order.
 12. This Order expires on **[DATE]**, five years from the date of adoption of this Order by the Regional Water Board. The Permittees must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.
 13. Order Nos. **[insert numbers for all BASMAA member permits]** are hereby rescinded.