

**Item 7. Municipal Regional Stormwater NPDES Permit –  
Municipalities and Flood Management Agencies in Alameda County,  
Contra Costa County, San Mateo County, Santa Clara County, and the  
Cities of Fairfield, Suisun City, and Vallejo in Solano County**

# **Appendix D**

## **Staff Report**



# California Regional Water Quality Control Board San Francisco Bay Region



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## Staff Report

### Significant Issues Associated with the Final Tentative Order for the Municipal Regional Stormwater Permit

In this report we summarize the most significant issues surrounding the Final Tentative Order for the Municipal Regional Stormwater Permit (MRP), and how we have addressed these issues.

The key issues include:

- Costs of Compliance with new requirements
- New and Re-Development Treatment Measures – Provision C.3
- Water Quality Monitoring – Provision C.8
- Trash Load Reduction – Provision C.10
- Mercury and PCBs Controls – Provisions C.11 and C.12
- Exempted and Conditionally Exempted (Non-Stormwater) Discharges – Provision C.15

#### *Costs of Compliance*

The overriding concern expressed by the Permittees is the cost of compliance with requirements in the MRP that different than those in their existing permits. We continue to acknowledge that new resources will be needed and recognize that even small increases in costs are a challenge in the current economic climate. Even under better economic circumstances, the Permittees' ability to generate additional resources is constrained by Proposition 218. We also acknowledge that effective urban runoff management will require federal and State assistance above and beyond the level of revenue that can be generated at the local level. We remain committed to assisting the Permittees in seeking such federal and State assistance.

In preparing the Final Tentative Order, we continued to balance cost concerns with (1) the legal mandate to reduce pollutants in urban runoff to the maximum extent practicable and to effectively prohibit non-stormwater discharges to storm drains, and (2) the need to implement adopted TMDLs that call on the Permittees to effectively manage their contributions to exceedances of water quality standards. Unfortunately, urban runoff is the most significant source (or pathway) of pollutants causing impairment or threat of impairment of waters in the Region.

We considered all the comments on the December 2007 Tentative Order and February 2009 Revised Tentative Order (previous tentative orders) and further eliminated or minimized any requirements in the MRP that may have limited water quality benefit relative to their costs. In response to comments, we also extended implementation timeframes to allow adequate opportunity to plan for any increased efforts and costs. Requirements that pose the most significant new costs are deferred for two to four years after permit adoption.

Nonetheless, as noted above, we recognize that all new requirements in the MRP will be difficult to meet without either new revenue sources or more efficient use of existing revenue sources. New revenue sources will likely never be pursued until there are permit requirements creating the need. The Permittees have been aware of aspects of all the anticipated new requirements for two or more years, but, until they have actually been “required”, have not necessarily pursued or been able to generate new revenue sources. While we are optimistic that recent and projected federal increases to the State Revolving Fund will be available to the Permittees via forgivable or subsidized loans and that State bond-funded grants will also be available to meet some short-term costs, we view this regionwide permit as an opportunity for all Permittees to more efficiently work together and with other stakeholders to use existing resources for effective urban runoff control.

### ***New Development and Redevelopment - Provision C.3***

**Low Impact Development** - Low Impact Development (LID) measures employ principles such as preserving and creating landscape features and minimizing imperviousness to mimic natural stormwater runoff and infiltration. This creates functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. LID measures include storing stormwater for reuse, conserving natural landscape hydrology by slowing and infiltrating runoff, and using biotreatment such as rain gardens, biotreatment swales, planter/tree boxes, and green roofs to remove pollutants, increase evapotranspiration and slow stormwater discharge.

LID is rapidly being established as the maximum extent practicable (MEP) standard for new and redevelopment stormwater treatment. Stakeholders are concerned about implementing LID measures, with questions about the limits of practicality on one end, and how far to “push the envelope” on the other. Two major municipal stormwater permits recently adopted in Southern California include extensive requirements for LID measures. The LID requirements in the Final Tentative Order become effective in 2011.

Current permits require comprehensive hydromodification control measures and treatment requirements based on hydraulic sizing design criteria, and have pushed the Permittees to rely primarily on landscape-based treatment measures. Unfortunately, we still find an over-reliance on treatment measures that do not meet the LID “maximum extent practicable” standard. To rectify this, and in response to robust stakeholder input, including that from the US EPA, the Final Tentative Order contains six key elements:

1. defines LID treatment measures, which includes biotreatment *only* when reuse, infiltration, and evapotranspiration are infeasible;
2. requires the Permittees to determine feasibility/infeasibility criteria for LID measures within the next 18 months. If infeasibility is demonstrated for reuse, infiltration, or evapotranspiration, biotreatment can be used;
3. requires that LID measures meet the hydraulic sizing standard;
4. requires 100% of stormwater runoff be treated with LID measures onsite in most instances;
5. allows an offsite mitigation and/or in-lieu fee system, called Alternate Compliance, for sites where LID measures onsite are infeasible; and
6. requires the Permittees to propose an LID treatment reduction credit system within one year for projects that have demonstrated environmental benefits (e.g., Brownfields, transit-oriented development, high density urban redevelopment) to allow a portion of the

stormwater runoff onsite to be treated by non-LID, or so-called “conventional”, treatment measures.

**Alternative Compliance** – In response to concerns raised by the Permittees that Alternative Compliance via an offsite project or contribution to a regional project should not be limited to infill and redevelopment, and is especially useful for road-widening projects, the Final Tentative Order allows the opportunity for Alternative Compliance to all new and redevelopment projects. Additionally, to provide maximum flexibility for projects such as road widening or dense urban core redevelopment, the Final Tentative Order allows offsite treatment or in-lieu fees for up to 100% of the design storm volume. To ensure “equivalency” between onsite treatment and offsite treatment: (1) all offsite projects must provide LID treatment; (2) offsite LID treatment measures must provide hydraulically-sized treatment of an equivalent quantity of both stormwater runoff and pollutant loads; (3) in-lieu fees paid must be enough to provide hydraulically-sized treatment of an equivalent quantity of both stormwater runoff and pollutant loads; and (4) offsite LID treatment must achieve a net environmental benefit.

One stakeholder, the Natural Resources Defense Council (NRDC), objects to the 1:1 ratio leading to an equal volume of stormwater treated offsite and prefers a higher ratio be applied when treatment will be offsite. However, experience to date is that there are many barriers to implementing offsite treatment, which is already allowed, though rarely used, under current permits. Also, many projects for which onsite LID measures are difficult or more expensive to install are located in dense urban and redevelopment areas where cities want to encourage growth rather than impose additional costs. Given these factors and the Permittees’ strong objections, we find a 1:1 ratio for offsite treatment to be appropriate.

**Special Projects** – Current permits contain an outright exemption from stormwater treatment for Brownfields, low- and moderate-income housing, senior housing, and transit-oriented development. In previous tentative orders, we preserved this exemption but added a requirement for minimum site design measures. In response to strong objections from NRDC, we have removed this exemption from treatment for these projects.

NRDC acknowledges that there is a subset of projects, referred to in the permit as “Special Projects,” that merit special consideration. When considered at the watershed level, these types of projects, which may include “Smart Growth”, high density, or transit-oriented development, can either reduce existing impervious surfaces or create less “accessory” impervious areas and vehicle travel-related pollutant impacts. For these projects, it would be appropriate to reduce the LID onsite treatment requirement to less than 100% of the site’s stormwater runoff, while still requiring full treatment with conventional treatment measures. We met numerous times with US EPA, NRDC, the Homebuilders Association of Northern California (HBANC), and the Permittees to try to define the parameters of such a reduction (e.g., project types, amount of LID onsite treatment reduction credit, and total credit allowed). We also asked for input, with supporting information, from the Permittees, but were ultimately unable to resolve this issue.

Because this issue is unresolved, the Final Tentative Order requires the Permittees to submit a proposal that identifies (1) types of Special Projects with an estimate of the number and cumulative area of the potential projects; (2) the institutional barriers and/or technical site-specific constraints that justify the allowance for non-LID treatment measures onsite; (3) specific criteria for each type of project, such as size, location, and minimum densities; (4) specific water

quality and environmental benefits provided by these types of projects that justify the allowance for non-LID treatment measures onsite; (5) the LID treatment reduction credit for each type of project and justification for the proposed credits, including an estimate of the specific water quality benefit provided by each type of project proposed for LID treatment reduction credit; and (6) the total treatment reduction credit for Special Projects that may be characterized by more than one category and justification for the proposed total credit.

Consideration and approval of the Special Projects categories will be a public process and we will solicit input from NRDC, HBANC, the Permittees and other interested stakeholders.

**Green Streets Pilot Projects** – The February 2009 Revised Tentative Order replaced the road re-construction treatment requirement with a requirement for ten “Green Streets Pilot Projects”. Properly designed and built “green streets” not only beautify the streets, have traffic calming effects, are safer for pedestrians and bicyclists, but can treat stormwater, reduce greenhouse gas emissions and increase carbon sequestration. The Permittees welcome the change but express the concern that it will be difficult to find ten projects that meet the proposed requirements. We expect Green Streets Pilot Projects eligible for funding via the Metropolitan Transportation Commission (MTC), State Revolving Fund loans, federal stimulus funding and other bond funds to meet the requirements.

In response to the Permittees’ comments, the Final Tentative Order contains the following changes: (1) requires the ten pilot projects, as a whole instead of individually, to contain all the key MTC Green Streets design elements; (2) allows parking lot projects to count as long as they also treat street runoff; (3) requires at least two pilot projects in each of the following counties: Alameda, Contra Costa, San Mateo, and Santa Clara; (4) allows the full permit term for completion of the ten projects but with a reporting requirement by the 4th year to inform development of the next permit. The pilot projects are required to be hydraulically sized for both street and adjacent private/public property runoff, in order for the treatment to be adequate.

### ***Water Quality Monitoring – Provision C.8***

**Monitoring Scope and Costs** – The primary purpose of monitoring is to gather quantitative information to identify water quality problems associated with urban runoff and to determine whether management actions are effective at controlling urban runoff pollution. Ideally, we want to show that management actions are producing measurable and meaningful results. The Permittees have expressed concern with the costs of meeting the monitoring requirements, whereas other stakeholders have challenged the adequacy of the monitoring requirements.

Water Quality Monitoring requirements encompass five areas:

1. Participation in the Regional Monitoring Program or its equivalent;
2. Assessment of water quality status in creeks and waterways within the Permittees’ jurisdictions on a rotating basis;
3. Assessment of long-term trends in water quality in representative creeks and waterways;
4. Identification of stressors or pollutant sources, investigation of treatment measures, and other special monitoring projects; and
5. Assessment of the loads of pollutants of concern to the Bay from urban runoff.

The status monitoring requirements are consistent with our own Surface Water Ambient Monitoring Program efforts to assess the physical, biological, and chemical conditions in creeks during the spring and dry weather. These monitoring requirements have been reduced with each tentative order. Water column sampling for metals and organic pollutants has been removed in favor of toxicity testing and sediment chemistry, which can integrate pollutant effects over time. Storm-event sampling was eliminated entirely from status monitoring. The total number of samples required has been greatly reduced, particularly for the more costly parameters, such as sediment toxicity. We also added flexibility to the selection of streams and monitoring locations and simplified pathogen sampling.

Similarly, we have added flexibility and reduced requirements for other monitoring elements, including the entire elimination of long-term monitoring for the smallest Permittees, Fairfield, Suisun City and Vallejo. The Permittees were most concerned about long-term trend monitoring, because of labor costs associated with sampling during rain events. We have combined long-term and pollutants of concern monitoring elements, as the Permittees requested, which should engender co-location of monitoring stations and reduce labor costs. We also adjusted monitoring reporting requirements to better reflect the timing and availability of monitoring results.

In short, we have looked at each monitoring requirement and reduced or eliminated as much as possible, while requiring adequate data to identify water quality problems associated with urban runoff. Overall monitoring costs, which we considered reasonable prior to these reductions, are further reduced in consideration of the severe economic conditions the Permittees face today.

**Collaboration and Integration** – The Final Tentative Order encourages and provides incentives to pursue regional collaboration that results in a comprehensive and consistent regional approach to monitoring. This also provides opportunity to coordinate and/or integrate the Permittees' monitoring efforts with those of others. For example, the Regional Monitoring Program is developing a strategy to monitor loads from local tributaries (including storm drains). By participating in a regional monitoring collaborative, the Final Tentative Order allows the Permittees more time and flexibility to implement monitoring requirements.

### ***Trash Load Reduction – Provision C.10***

In response to comments expressed at the May 2009 Board testimony hearing, we have clarified and simplified the trash reduction provision, and included a strong emphasis on trash load reduction. The revised provision requires each Permittee to reduce trash loading 40% by 2014, 70% by 2017, and achieve no trash impacts to receiving waters by 2022.

**Short-Term Trash Load Reduction** - The main thrust of this permit term is implementation of short-term trash load reduction actions to reduce trash loading 40% by 2014. The Permittees will have flexibility to meet load reductions using the most efficient, accountable measures of their choosing, including source control by adopting local restrictions on, for instance, single-use bags or litter-producing packaging. As long as the actions can be tied to an amount of trash prevented or removed from impacted waters, and the action is appropriately maintained, it can count towards the load reduction requirement.

**Baseline Trash Load** - A major challenge is the determination of the baseline trash load level that will serve as the basis of trash load reduction accounting. However, rather than mandating a specific method to determine baseline trash load levels, the Final Tentative Order allows the Permittees to self-determine them in a manner that is meaningful to them and reflects their knowledge of their drainage areas, including opportunity to exclude “clean” drainage areas that do not generate trash loads. We expect most Permittees will collaborate with others on development of standard methodologies that work for them and are acceptable to others.

**Trash Reduction Costs** – The Final Tentative Order substantially revises the initial trash reduction requirements in a manner that reduces overall costs and increases flexibility, while providing accountability. While many stakeholders want more trash capture and control in this permit term, we expect the phased load reduction approach will result in meaningful short-term reductions in trash discharges, and set the stage for efficient expansion of trash reduction actions, including trash capture, over the next permit term.

We recognize that trash reduction will require significant increases in stormwater management resources and, as noted above, that the Permittees’ ability to generate additional resources is constrained by Proposition 218 and other factors. For example, we estimate that trash capture device requirements will cost nearly \$28 million for installation, based on comparable efforts in the Los Angeles Region. Through the efforts of the San Francisco Estuary Partnership, working with the Permittees, \$5 million of American Recovery and Reinvestment Act of 2009 funds has been secured to pay for early trash capture device installation. We will continue to work with the Permittees to make trash reduction a high priority for federal and State resources. We also expect the regional nature of the MRP will generate regional or potentially statewide solutions and revenue generating and sharing mechanisms.

### ***Mercury and PCBs Controls– Provisions C.11 and C.12***

**Mercury and PCBs Control Actions and Costs** – The mercury and PCBs control requirements begin to implement the urban stormwater runoff wasteload allocations set forth in the San Francisco Bay mercury and PCBs TMDLs adopted by the Board. The implementation plans adopted with each of the TMDLs calls for a phased implementation strategy, which results in permit requirements that reflect the current state of knowledge on mercury and PCBs controls. The strategy calls for implementation of controls via an iterative, permit term-based approach that leads to attainment of the allocations within 20 years (i.e., four permit terms).

We are challenged by limited knowledge of mercury and PCBs controls at this time. We do not currently know which controls are technically feasible and cost-effective. Consequently, this first permit requires implementation of pilot projects to evaluate mercury and PCBs controls in four action areas: cleanup and abatement of sources of mercury and PCBs (five projects); enhanced sediment removal via storm drain system operation and maintenance (five projects); retrofit of stormwater treatment units into existing storm drain systems (ten projects); and strategic diversion of dry weather and first-flush flows in storm drains to municipal wastewater systems (five projects). The knowledge and experience gained through pilot implementation will be used to determine the scope of implementation in subsequent permit terms that will result in timely pollutant load reductions.

We recognize that mercury and PCBs control actions will also require significant increases in stormwater management resources. The pilot studies that likely will cost several million dollars collectively over this permit term are intended to answer the bigger question of whether the full costs of mercury and PCBs controls will be tens or hundreds of millions of dollars. Similar to our trash discussion above, we will work with the Permittees to make mercury and PCBs control implementation a high priority for grant resources. We also expect some redirection or focus of existing street sweeping and inlet cleaning actions, or resources associated with those actions, to mercury and PCBs controls.

**Collaboration and Integration** – The mercury and PCBs pilot projects are designed to be implemented via a regional collaborative effort, and mercury is expected to be included in PCBs pilot projects rather than addressed in separate projects. While the Permittees have requested that we reduce the number of pilot projects in each action area to four, we maintain that the current proposed numbers are more appropriate. There is sufficient information available to allow the Permittees to identify five suitable locations to implement pilot projects for cleanup and abatement, enhanced operation and maintenance, and routing to wastewater systems, and ten suitable locations to pilot test retrofit of stormwater treatment units throughout the Region. We also expect integration of the different types of pilot projects in the same drainage area. In other words, we expect and encourage that specific pilot projects be designed to address multiple action areas. There are several types of treatment retrofits, so it is particularly important to have multiple instances of these types of solutions to gain timely knowledge and experience. The number of pilot projects corresponds to our need to learn about technical details, costs, benefits and feasibility.

To allow the Permittees more time to seek funding sources, the Final Tentative Order provides an additional year for many of the early-action (year one) actions.

### ***Exempted and Conditionally Exempted (Non-Stormwater) Discharges – Provision C.15***

This provision allows exemptions to the prohibition of non-stormwater discharges for classes of discharges that do not adversely affect water quality, and allows conditional exemptions for classes of discharges that do not adversely affect water quality if they are properly managed. The Permittees have expressed considerable concern with these requirements, particularly with monitoring and reporting of discharges of potable water. The challenge is that unmanaged discharges of such waters can be acutely toxic to fish and other aquatic life due to residual chlorine or chloramines and can cause erosion and sedimentation in the local creeks.

To ease the burden on the Permittees, we have:

1. Exempted single family homes' foundation drainage because it tends to be unpolluted;
2. Exempted pumped groundwater from drinking water aquifers because we have data showing that it is unpolluted;
3. Deleted the requirements for non-water purveyor Permittees to oversee third parties for potable water discharges, because we have issued and intend to continue issuing individual NPDES permits for potable water discharges;
4. Reduced the monitoring and reporting requirements for the water purveyor Permittees who discharge potable water; and



5. Restored the conditional exemption for residential car washing because washwater control is best approached through public outreach.