UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

April 3, 2009

MRP Tentative Order Comments
Attn: Dale Bowyer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Re: Draft MS4 Permit for San Francisco Bay Municipal Regional Stormwater NPDES Permit (Permit No. CAS612008)

Dear Mr. Bowyer:

The following are EPA Region 9's comments on the revised draft of the San Francisco Bay Municipal Regional Stormwater NPDES Permit (Permit No. CAS612008) dated February 11, 2009. In February 2008, we provided comments on the previous draft permit which was distributed for comment by the Board in December 2007. Consistent with our previous comments and discussions on reissuance of this permit, the revised draft permit needs additional, prescriptive requirements related to low impact development, trash control, and incorporation of TMDLs. EPA may consider objecting to the permit, if these issues cannot be addressed satisfactorily.

Our comments are informed by our review of other MS4 permits throughout our Region, and our review of the implementation of these permits via audits of nearly 50 MS4 programs. The audit reports repeatedly show the need for prescriptive requirements to clarify the permits and to ensure measurable, enforceable requirements.

1. Implementation of Low Impact Development (LID) Requirements

EPA is encouraged that the tentative order includes specific provisions to promote the implementation of LID, including site design, minimizing impervious surfaces, landscape-based treatment, and use of natural feature systems. However, while the permit encourages LID to the extent "practicable", the permit does not establish a clear, measurable performance standard to require landscape-based treatment, on-site retention, and/or storage for re-use.

As you are aware, EPA commented in February 2008 on the December 2007 draft permit that "to ensure adequate enforceability and clarity of the permit, we believe the permit needs to include a numeric value for quantity of runoff which would be directed to pervious areas." EPA's primary objective for incorporating LID into renewed MS4 permits, especially for those that represent the third or fourth generation of permits

regulating these discharges, is that the permit must include clear, measurable, enforceable provisions for implementation of LID. In our review of MS4 programs across our Region, we have found that it is common for permits to rely on the development of plans to achieve certain permit objectives, rather than including prescriptive requirements in the permits. While the permittees often make significant and sincere efforts in their development of these plans, the plans often result in a reliance on qualitative provisions rather than specific measurable criteria. As a result, we have found that there often is uncertainty among both the MS4 permittees and the permitting agencies as to specific permit expectations. The incorporation of LID techniques into MS4 permits provides an opportunity to establish clear, measurable performance standards for the implementation of LID.

In order to incorporate clear, enforceable LID requirements into the Bay Area permit, sections C.3.c.i.2.(a) through (f) should be revised to clarify that regulated projects must utilize LID design elements to ensure onsite management of stormwater. Provisions describing these design elements should be revised to remove qualifiers such as "to the extent feasible" and "as practicable."[1] The permit should stipulate that use of these design elements must result in the onsite management of the total section C.3.d specified runoff. Any runoff that is not managed via these LID design elements must be addressed via the means described in section C.3.c.i.2(g) and (h). However, the permit should be clear that the use of the conventional means in C.3.c.i.2(g) and (h) would not be counted in determining whether projects meet the permit's LID requirements. Sections C.3.c.(4) through (6), which allow regulated projects to avoid use of LID design elements in favor of vault-based treatment systems, should be deleted.

EPA agrees that it may be beneficial to apply less stringent LID requirements to specific types of preferred development (as the draft permit provides in section C.3.e.). We also recognize that there may be situations where achievement of specified volumetric criteria for management of stormwater via LID design elements may be infeasible due to physical site constraints. The permit should include a clearly defined, enforceable process for requiring off-site mitigation for projects where use of LID design elements is infeasible. We'd suggest consideration of the Alternatives and In-Lieu Programs approach in the MS4 permit for Orange County proposed by the Santa Ana Regional Board (NPDES permit No. CAS618030), or another means whereby the Executive Officer may ensure that projects that cannot practically meet the LID performance requirements provide appropriate mitigation in the project vicinity.

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[1]In addition, these qualifiers appear to allow self-regulation by the permittees rather than require oversight by the Regional Board on the issues of feasibility and practicability. See Environmental Defense Center, Inc. v. EPA, 344 F.3d 832 (9th Cir. 2003), and Waterkeeper Alliance, Inc. v. EPA, 399 F.3d 486 (2nd Cir. 2005)

EPA is today emphasizing LID (also called "green infrastructure") as a preferable approach to treating and reducing stormwater flow to MS4s[2] and its inclusion in provisions of MS4 permits. EPA believes that LID is an approach to storm water management that is cost-effective, sustainable, and environmentally-sound. The effectiveness of landscape-based treatment for stormwater is generally superior to the "conventional" treatment addressed in section C.3.d of the proposed permit because landscape-based treatment can remove a broader range of pollutants in a more robust and redundant fashion, and can achieve multiple environmental and economic benefits in addition to reducing downstream water quality impacts, such as enhanced water supplies, cleaner air, reduced urban temperatures, increased energy efficiency and other community benefits such as aesthetics, recreation, and wildlife areas.[3] The benefits of LID include:

- ***Stormwater Pollutant Reductions*** - Green Infrastructure techniques infiltrate runoff close to its source and help prevent pollutants from being transported to nearby surface waters. Once runoff is infiltrated into soils, plants and microbes naturally filter and break down many common pollutants found in stormwater.

- ***Maintenance requirements*** – Many conventional stormwater treatment systems are functional only so long as they are being properly maintained. For systems such as vaults that are underground and not readily accessible, maintenance requires specialized equipment and personnel and, without frequent maintenance, may re-suspend and re-release trapped pollutants. A benefit to landscape-based techniques is that maintenance requirements do not generally require specialized equipment or personnel, and maintenance is often consistent with the requirements of other landscaping (e.g., mowing, mulching, trash clearing, etc.).

- ***Reduced and Delayed Stormwater Runoff Volumes*** - Green infrastructure reduces stormwater runoff volumes and reduces peak flows by utilizing the natural retention and absorption capabilities of vegetation and soils. By increasing the amount of pervious ground cover, green infrastructure techniques increase stormwater infiltration rates, thereby reducing the volume of runoff entering our combined or separate sewer systems, and ultimately our lakes, rivers, and streams.

- ***Enhanced Groundwater Recharge*** - The natural infiltration capabilities of green infrastructure technologies can improve the rate at which groundwater aquifers are 'recharged' or replenished. This is significant because groundwater provides

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[2]EPA et al., Green Infrastructure Statement of Intent, April 19, 2007, available at http://www.msdgc.org/downloads/wetweather/greenreport/Files/Green_Report_Exhibit_A.pdf

[3]Managing Wet Weather with Green Infrastructure, Action Strategy, EPA, January 2008, available at http://cfpub.epa.gov/npdes/greeninfrastructure/information.cfm#greenpolicy

about 40% of the water needed to maintain normal base flow rates in our rivers and streams. Enhanced groundwater recharge can also boost the supply of drinking water for private and public uses.

- ***Reduced Sewer Overflow Events*** - Utilizing the natural retention and infiltration capabilities of plants and soils, green infrastructure limits the frequency of sewer overflow events by reducing runoff volumes and by delaying stormwater discharges.

- ***Increased Carbon Sequestration*** - The plants and soils that are part of the green infrastructure approach serve as sources of carbon sequestration, where carbon dioxide is captured and removed from the atmosphere via photosynthesis and other natural processes.

- ***Urban Heat Island Mitigation and Reduced Energy Demands*** - Urban heat islands form as cities replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat. The displacement of trees and vegetation minimizes their natural cooling effects. Additionally, tall buildings and narrow streets trap and concentrate waste heat from vehicles, factories, and air conditioners. By providing increased amounts of urban green space and vegetation, green infrastructure can help mitigate the effects of urban heat islands and reduce energy demands. Trees, green roofs and other green infrastructure can also lower the demand for air conditioning energy, thereby decreasing emissions from power plants.

- ***Improved Air Quality*** - Green infrastructure facilitates the incorporation of trees and vegetation in urban landscapes, which can contribute to improved air quality. Trees and vegetation absorb certain pollutants from the air through leaf uptake and contact removal. If widely planted throughout a community, trees and plants can even cool the air and slow the temperature-dependent reaction that forms ground-level ozone pollution (smog).

- ***Additional Wildlife Habitat and Recreational Space*** - Greenways, parks, urban forests, wetlands, and vegetated swales are all forms of green infrastructure that provide increased access to recreational space and wildlife habitat.

- ***Improved Human Health*** - An increasing number of studies suggest that vegetation and green space - two key components of green infrastructure - can have a positive impact on human health. Recent research has linked the presence of trees, plants, and green space to reduced levels of inner-city crime and violence, a stronger sense of community, improved academic performance, and even reductions in the symptoms associated with attention deficit and hyperactivity disorders. Additional information is available: http://www.lhhl.uiuc.edu/all.scientific.articles.htm

- ***Increased Land Values*** - A number of case studies suggest that green infrastructure can increase surrounding property values. In Philadelphia, a green retrofit program that converted unsightly abandoned lots into "clean & green" landscapes resulted in economic impacts that exceeded expectations. Vacant land improvements led to an increase in surrounding housing values by as much as 30%. This translated to a $4 million gain in property values through tree plantings and a $12 million gain through lot improvements.

2. *Trash Control*

EPA is encouraged that the tentative order includes requirements to address trash impairments in San Francisco Bay and its watersheds. However, EPA believes that the permit should include measurable and enforceable goals for trash reduction. For additional Federal regulatory support for the fact sheet, we suggest you also cite 40 CFR 122.26(d)(2)(iv)(A)(*1*) which requires the following for a stormwater management program:

> A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (*including floatables*) in discharges from municipal separate storm sewers (emphasis added)

Commenters on the December 2007 version of the draft permit frequently expressed concern about the costs of the trash control program. For example, BASMAA in its comments to the Board estimated costs of $8.6 to $265 million (average of $128 million) for member agencies to implement "full capture devices" for just the 5% of the Bay Area urbanized areas for which such devices would have been required by the previous draft permit. However, these cost estimates are not supported by the experiences of the City of Los Angeles, which as noted in the fact sheet, intends to install such devices in the entire City of Los Angeles (with an area roughly comparable to the area to be covered by the Bay Area permit) for $72 million.

We recognize that in Los Angeles the requirements are being driven by TMDL requirements and similar requirements have yet to be developed for the Bay Area. However, the fact sheet for the Bay Area permit provides good support for the need for additional controls to reduce trash in Bay Area waterways, and the regulatory basis for the additional controls. Further, the San Francisco Bay Regional Board's draft 303(d) list includes a long list of waters (the Bay shoreline and 24 tributaries) impaired for trash, which may well lead to TMDLs for trash in the near future. Given the accomplishments thus far in the Los Angeles area, and the data provided to the Regional Board that justified the draft 303(d) listings, we believe that setting a percent load reduction over each year of the permit life for all proposed listed waterbodies, at a minimum, would be necessary for compliance with the requirements for trash control to the maximum extent practicable (MEP) of section 402(p)(3)(B) of the Clean Water Act. We believe that the proposed "hot spot" identification and methodology in the draft permit language is

unnecessary and not based on already identified impairment. We encourage trash control efforts in commercial and industrial areas in addition to the waterbodies identified on the draft 303(d) list as impaired for trash.

Moreover, trash-control requirements in the previous MS4 permit were not completed, and thus it may be yet more compelling for the permittees to take more direct implementation actions to achieve reductions in loadings. This could be an optimal time to put in place already-tested methods from others and have a successful approach in place well before future trash TMDL adoption.

3. Total Maximum Daily Loads (TMDLs)

Pursuant to 40 CFR 122.44(d)(1)(vii)(B), Water Quality-Based Effluent Limits (WQBELs) in NPDES permits must be consistent with the assumptions and requirements of all applicable TMDL Waste Load Allocations (WLAs) approved by EPA. The fact sheet for the permit notes the EPA policy memo of November 22, 2002 which recommends BMPs as the effluent limits for most municipal stormwater permits when complying with TMDLs and the WLAs assigned to MS4 permittees. The policy memo stated that when using BMPs as the effluent limits, the fact sheet needs to demonstrate that the BMPs are expected to be sufficient to comply with the WLAs. However, given the uncertainties in the performance of many of the BMPs commonly used for stormwater pollution control, it is often difficult to make such a demonstration. As such, for WLAs such as those applicable to the Bay Area MS4s, Region 9 encourages the use of numeric limits because these will provide greater assurance of consistency with the WLAs and will enhance the enforceability of the permit with regards to the WLAs.

a. Mercury TMDL

It is our position that the permit should include the numeric 10-year and 20-year WLAs for mercury for the MS4s even though the compliance deadlines for these WLAs extend beyond the anticipated term of the permit. In a letter from Region 9 to the State Board and the Regional Board dated October 31, 2007, Region 9 included a guidance memo from EPA Headquarters dated May 10, 2007 which stated that to ensure enforceability of a compliance schedule, a permit must include the full schedule, even if it extends beyond the term of the permit. This will ensure the requirements of the schedule can be enforced even in the event the permit is not reissued in a timely manner.

We note the mercury TMDL was adopted by the Regional Board on August 9, 2006; as such, the permit should include a requirement to meet the 10-year and 20-year WLAs 10 and 20 years, respectively, following the adoption date.

The inclusion of the numeric WLAs would also provide greater assurance of consistency with the WLAs for urban runoff, and enhance the enforceability of the requirements, as noted in our general comments above.

b. Pesticides Toxicity Control

The basin plan amendment adopted by the Regional Board in 2005 includes numeric WLAs for the permittees for diazinon and toxicity. The basin plan amendment indicates the BMPs included in the permit will initially be considered sufficient to comply with the WLAs. However, the amendment also indicates that if the BMPs prove to be insufficient, the Board may require additional control measures. To cover this possibility, we recommend the permit include a reopener clause which would provide that if the initial BMPs prove insufficient to comply with the numeric WLAs, the permit may be reopened to include additional controls as necessary to ensure consistency with the WLAs. It is our position that the permit should include the numeric WLAs themselves, as this would provide greater assurance of consistency with the TMDL and would enhance the enforceability of the permit with regards to the WLAs.

We appreciate the opportunity to provide our views on the new draft permit. If you would like to discuss these comments, please contact John Tinger of the NDPES Permits Office at (415) 972-3518, or Eugene Bromley of the NPDES Permits Office at (415) 972-3510.

Sincerely,

Douglas E. Eberhardt
Chief, NPDES Permits Office