



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

April 15, 2011

Mark Smythe
Santa Ana Regional Water Quality Control Board
Attn: Coast Stormwater Unit
3737 Main Street, Suite 500
Riverside, CA 92501

Re: Orange County MS4 Permit Model Water Quality Management Plan and Technical Guidance Document

Dear Mr. Smythe:

The following are EPA Region 9's comments on the updated, March 22, 2011 Model Water Quality Management Plan (WQMP) and Technical Guidance Document (TGD) submitted by Orange County. These comments are focused on how the procedures the WQMP and TGD describe for implementation of the Santa Ana Regional Water Quality Control Board's (SARWQCB's) South Orange County Municipal Separate Storm Sewer System (MS4) permit.

As you know, beginning in January, 2010, EPA representative have been participating on Orange County's "NPDES Land Development Technical Advisory Group (TAG)" to discuss implementation of provisions in the Orange County MS4 permits issued by the SARWQCB and the San Diego Regional Water Quality Control Board.

We continue to have significant reservations with many aspects of how the updated WQMP and TGD propose implementing the SARWQCB's Orange County MS4 Permit (the Permit). As described in the following comments, the SARWQCB should make revisions to the WQMP and TGD before approving these documents.

Regional/Sub-Regional Projects

The Permit requires the use of LID "as close as feasible to the source of runoff." These requirements are contained in section XII.C. of the permit, entitled, "Low Impact Development to Control Pollutants in Urban Runoff from New Development/Significant Redevelopment." Using LID to control runoff at its source is consistent with EPA's view that an important advantage of LID is that stormwater is controlled before it has an opportunity to flow over areas (roads, parking lots, etc.) where runoff entrains pollutants.

The Permit lays out a hierarchy for considering alternatives if site conditions do not permit the use of LID as close to the source as possible. (section XII.C.7, page 56 of 93) The WQMP and TGD create an entirely new approach inconsistent with the permit for the utilization of regional and sub-regional projects. Under this new approach regional projects may be utilized without a determination that it is technically infeasible to use LID at the source. It's our view that implementation of this new approach would require modification of the permit.

There are numerous locations in the WQMP and TGD which describe approaches for using regional projects that do not reflect the Permit. The following is not an exhaustive list of where regional projects are described in a manner inconsistent with the Permit.

- WQMP, section 2.4.3.2, page 2-13 – It's asserted that "it may be most appropriate" to implement LID BMPs beyond the boundaries of the specific development" without first determining the feasibility of LID BMPs at the project site.
- This same section mentions a "WIHMP Plan or Master Plan" and notes that these documents may demonstrate that regional BMPs are preferred. Section XII.D. ("Hydrologic Conditions of Concern (Hydromodification)") of the Permit requires that permittees must address hydrologic conditions of concern by preparing "Watershed Master Plans." These plans must "specify hydromodification management standards." It would not be appropriate for these plans prepared pursuant to section XII.D of the Permit to modify the LID requirements of the Permit contained in section XII.C.
- Page 2-16 of this section includes two sets of bullets which redundantly lay out criteria for how watershed-based plans approved by the Executive Officer must document the effectiveness of regional plans. Should the SARWQCB decide to modify the permit to allow for this new approach, we'd recommend that the second set of four bullets would be the appropriate set of criteria.
- Page 2-17 notes that regional BMPs not part of approved plans can also be considered if they meet listed criteria. Again, this would be inconsistent with the Permit, and is seemingly contradictory of previous text in the WQMP stating that an approved "WIHMP or Master Plan" must exist for regional projects to be considered ahead of onsite LID. We agree with the statement that regional projects would be appropriate for use as mitigation projects.

Treatment Control

Finding 63 of the Permit discusses SWRCB Order WQ-2000-11 requiring treatment control. Page 2-12 of the WQMP correctly discusses the interrelationship between LID BMPs and treatment control BMPs. As the WQMP notes, "full compliance with LID requirements onsite inherently results in compliance with treatment control requirements." Page 2-43 of the TGD contains an accurate description of how treatment control BMPs must be used to address runoff when LID BMPs are not able to fully capture the DCV. Unfortunately, elsewhere these documents contain erroneous discussion of treatment control requirements.

The following are examples of incorrect descriptions of treatment control requirements in the WQMP.

- Page 3-6 describes applying water quality credits to treatment control performance criteria. Use of these credits is described in section XII.E. of the Permit. Section XII.E. includes Alternatives and In-Lieu Programs for situations when LID BMPs are not feasible. This concept does not apply to treatment control BMPs.
- Page 3-8 describes the use of an economic basis for waiving treatment control BMPs based on cost considerations. Again, the Permit's consideration of costs in BMP implementation is contained in provisions applicable to LID BMPs.
- Page 3-10 refers to payment into a runoff fund as an alternative to treatment control BMPs. This is another concept that is provided for LID BMPs, not treatment control BMPs.

Water Quality Credits

The water quality credit volume (WQMP, page 3-6) provided for redevelopment projects that reduce the overall impervious footprint of the project is excessive. Under this approach, a project could conceivably receive a credit of up to 50%, and meet their LID obligations by only addressing half of the DCV. This is equal to the maximum credit for a project that reflects multiple categories qualifying for credits. We'd suggest that the maximum credit provided for these redevelopment projects should be 25%, the maximum amount provided for any other single type of project qualifying for credits.

Given that the water quality credit program details were left out of the previous version of the WQMP and TGD, it's not surprising that the March 22, 2011 documents contain an inadequate level of detail explaining this program. For the additional categories of projects for which credits are assigned, more detailed explanations are needed for the types of projects receiving credits and the percentages they are provided. For example, there should be a justification for what specific water quality benefits will be provided for the listed projects. It's unclear for example, what water quality benefit will be realized from reducing the use of LID for projects in a historic development. There should also be a justification for the percentage value provided for specific project type, reflecting the degree to which the project type provides water quality benefits. It's also necessary to provide definitions of the specific listed project categories. For example, criteria should be provided for "mixed use development, transit oriented development or live-work development." Transit oriented development must be more than simply a development in close proximity to a bus stop. We'd suggest that such development should be located in close proximity (walking distance) from a bus, rail, light rail, or commuter rail station.

Determining the Feasibility of Infiltration

We disagree with the conclusion in TGD Appendix VII.1.6 (page VII-4) that infiltration may be infeasible due to uncertainty over determining an infiltration rate when

development is constructed on fill. Please clarify why the infiltration rate of fill cannot be determined. For example, if necessary, characterization of infiltration feasibility may be conducted after fill is placed. The presence of fill material is not a valid reason for ruling out the use of infiltration.

We disagree with the text in Appendix VII.2 that a minimum safety factor of 2.0 is necessary in all cases. See pg. VII-34 which mentions the use of a safety factor of 1 in some circumstances. In the discussion on Safety Factors selected in calculating infiltration rates, the discussion should focus on the different types of methods used and the journal established safety factors associated with each method. In some cases, it may not be appropriate to include a FS if sufficient detailed soil characterization and hydrology is evaluated by multiple tests and ground-truthing. In addition, the language in VII.1.1 should support that the intent of the investigation is to identify the overall feasibility of on-site retention and thus provide a best estimate of the infiltration capacity. This should also be reflected on page 2-33 of the TGD.

Appendix VII.2.1 discusses Use of Regional Maps and "Available Data" in determining the feasibility of infiltration. Throughout the TAG process we've made the point that regional maps are not precise enough to be relied on for making project-specific infeasibility determination. In order to conclude that infiltration is infeasible, site specific geotechnical data must be used. This section should be revised to clarify that if a small project is claiming that onsite retention is infeasible, it should be based on onsite sampling or available data. If available data are being relied on for an infeasibility determination, such a determination must be supported by the judgment of a professional engineer, or registered geologist licensed in California, that the available data is representative of the project site and supports the conclusion that infiltration is infeasible on the project site. This should also be reflected on page 2-32 of the TGD, which describes projects that may use regional maps and not be required to provide site-specific geotechnical investigation.

Page VII-8 – The fourth bullet on this page, stating that no more than five tests are required, should be deleted. If in the judgment of the professional overseeing the testing, there would be value in testing more than five sites to characterize the project area, this should not be prohibited.

Biofiltration

Pursuant to the Permit, biofiltration is considered an LID BMP that can be used to satisfy the Permit's LID requirements when onsite retention cannot be feasibly be implemented at the project site. Biofiltration was included with the LID BMPs as a result of assertions during permit hearings by the permittees and other commenters that biofiltration achieves LID objectives, and by definition is an LID BMP. Given the lack of clear criteria for biofiltration systems, the adopted Permit requires that specific design, operation and maintenance criteria for biofiltration systems be part of the model WQMP. The WQMP has not provided details on how biofiltration will be properly designed, operated and maintained to meet LID objectives, i.e. reducing runoff to the maximum extent

practicable. We recognize that the TGD and appendices contain more details on the use of biofiltration, but find that these documents do not consistently document that biofiltration will be designed, operated and maintained to truly reflect the Permit's characterization of it as an LID BMP that promotes LID objectives.

The TGD includes expectations for biofiltration that fall short of demonstrating how design operation and maintenance will meet LID objectives. Page 2-41 of the TGD lays out steps for meeting the Permit's LID provisions when biofiltration is used. An additional step is needed after demonstrating the retention BMPs have been provided to the MEP. When biotreatment is used in this process, it is necessary for the biotreatment system to be designed, operated and maintained to maximize infiltration and evapotranspiration and minimize discharges to the MS4. A treat and release system that doesn't achieve these LID objectives does not meet the criteria for "biotreatment" systems established by the Permit.

Similarly, on page 2-42 of the TGD, in the step of "Demonstrating that retention plus biotreatment has been provided to the MEP," it should be clarified that in order for biotreatment to be used to meet LID requirements, it must meet infiltration and evapotranspiration criteria, not just "sizing" criteria.

On page XI-3, as noted below, the Threshold Incremental Benefit Criterion approach should be deleted, and therefore the paragraph describing this approach on this page should be removed.

On page XII-1, given the context of biotreatment in this Permit, the definition of biotreatment BMPs should be revised to reflect that LID BMPs include design features to maximize retention via infiltration and evapotranspiration. The list of goals in this definition should add, "As an LID BMP, it must be designed, operated and maintained to maximize infiltration and evapotranspiration and minimize discharges to the MS4." The next to last complete sentence on this page should be revised to state "Biotreatment BMPs must be designed to promote infiltration and ET because they are classified as LID BMPs under these permits." Given this requirement to specifically design these systems to promote infiltration and ET, the last complete sentence in this paragraph should be deleted.

Threshold Incremental Benefit Criterion

Appendix XIII should be deleted, and the 40% Threshold Incremental Benefit Criterion should not be a component of LID implementation under the Permit.

Under this approach, if it is feasible to retain 1/3 of the DCV at a project site, the project proponent can choose to forego retention and implement biotreatment BMPs. This is contrary to the permit's LID provisions and the Clean Water Act's requirement to control pollutants to the maximum extent practicable (MEP).

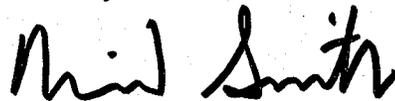
The conclusions in Appendix XIII are apparently made in part based on unsubstantiated assertions that biofiltration is more cost effective than onsite retention. This has not been supported. In fact, infiltration methods such as raingardens will be more cost effective than the construction of underdrains included in biotreatment systems.

The justification for this approach focuses on harvest and use systems where storage cannot be recovered. This is a consideration for the feasibility of harvest and use systems, and should not be used to justify eliminating all retention requirements if total retention is less than 40% of the DCV.

Instead of establishing this threshold, conclusions on the feasibility of retention should be made on a case-by-case basis taking into account all the available options for retention. The WQMP and TGD provide many avenues for evaluating the feasibility of retaining stormwater to meet the Permit's objective. It is not necessary to include this arbitrary and unsupported threshold as an avenue for avoiding onsite retention.

Please let us know if you'd like to discuss any of these comments in more detail.

Sincerely,

A handwritten signature in black ink that reads "David Smith". The signature is written in a cursive style with a large, prominent "D" and "S".

David Smith, Manager
NPDES Permit Office