

**Comments Received on draft Ventura County MS4 Permit
December 27, 2006**

**From: Vaikko Allen II, CPSWQ
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To: RWQCB-LA

Date: February 26, 2007



February 26, 2007

Dr. Xavier Swamikannu
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

RE: DRAFT VENTURA COUNTY MS4 PERMIT (NPDES PERMIT No. CASOO4002)

Dear Dr. Swamikannu,

Congratulations on this first draft of the Ventura County NPDES Permit. It is an ambitious effort that clearly took a lot of insight and effort to bring to fruition. Thank you for the opportunity to comment. My comments are mainly directed toward the post construction stormwater management elements of the plan and are divided into two sections. First, I'd like you to consider some general comments about the Permit's approach. Second, I have provided comments and suggested changes for specific sections of the permit. For ease of reference, I have included Section numbers, page numbers and a brief subject in dark blue font before each comment.

General Comments:

The complexity of this permit is easy to understand given two factors; a desire on the part of the regional board to measurably improve water quality and a consensus that numeric effluent limits are not feasible to include in a municipal permit. The result is a permit that is overly prescriptive in that it requires specific protection measures to be undertaken on a site level, but gives little to no discussion of the intended water quality impact that is assumed to result from implementation of those measures. In my opinion this permit strays too far from establishing specific performance objectives and is unnecessarily complex and prescriptive.

A simpler, more effective approach would be to require that specific water quality and quantity objectives be met and to establish a process whereby the performance of various BMPs could be qualified related to these performance objectives. For example the Municipal Action Levels as included in Attachment C could be considered to be performance objectives. The permit could require that a BMP manual be developed to identify BMPs that meet or contribute to meeting those objectives. The manual would ideally focus on the fundamental unit processes active in various BMPs with a discussion of the performance impacts resulting from changes to basic BMP design characteristics.

This unit process based BMP design process was specifically recommended by the panel of experts convened by the State Board to comment on the feasibility of numeric effluent limits. Without such an explicit consideration of the performance of various BMPs it is impossible to judge what constitutes treatment to the "maximum extent practicable". In fact, this permit substitutes a performance and feasibility based hierarchy of approaches with an "order of preference" for mitigation approaches that does not necessarily favor more effective BMPs.

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This hierarchy is one example of a prescriptive requirement that constrains a stormwater mitigation system designers options without necessarily providing a water quality benefit. Other examples are requirements that all BMPs drain down within 72-hours, that sites be limited to 5% effective impervious area, and that trash excluders be installed at all drain inlets. In my specific comments I will discuss these and other issues, and provide suggestions that more specifically address the intended water quality benefit without limiting design options.

Specific Comments:

Findings F.11

Page 23

Municipal Action Levels - On or after (first October in year 3 after permit adoption), two or more exceedences of a MAL will be construed as a failure to implement adequate control measures and will be considered a violation of the MEP provisions of this Order.

This approach implies that there is a framework for establishing the relative level of effectiveness of various BMPs. For example the permit states that if MALs are exceeded, current controls will be considered ineffective and more rigorous BMPs will be required.

Since no disclosure of performance expectations is required for BMPs initially, and no assessment of BMP performance is required except for MAL compliance monitoring, there is no assessment of baseline BMP performance. Without that, how would we know what we're to be improving on? What criteria will be used to ensure that corrective BMPs are more effective?

Part 1, Table 1

Page 28

72 hour drain down requirement

Please add to this section a provision allowing for the use of BMPs with a permanent pool volume if access to suitable breeding habitat for mosquitoes is eliminated.

A 72 hour draindown requirement eliminates many effective treatment BMPs from consideration. It seems to leave only two types of BMPs as viable options: those that store pollutants on top of a filtering or infiltrating surface such as bed filters or bioretention cells; and those that include a drainage orifice at the bottom of the structure such as a dry detention basin.

On all but the cleanest sites the first option is problematic. Infiltrating or filtering surfaces will become plugged with sediment if it is allowed to accumulate on the surface. Pretreatment should be provided so that the majority of pollutants can be removed prior to filtration or infiltration. Many of the pretreatment technologies that provide trash, sediment and oil and grease removal include sedimentation sumps and underflow baffles to remove floating materials. These are useful tools that would be prohibited by this requirement. They can also be isolated so they do not provide breeding habitat for mosquitoes.

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BMPs with orifices at or near the bottom may not effectively treat low and nuisance flows and will not remove floating pollutants. This makes them poor choices where spills or heavy oil and grease loads are expected. Trash and sediment accumulation may also plug the outlet orifice causing standing water. These devices also benefit from pretreatment.

Part 3 Section A.3.2

Page 31

BMP based implementation of wet weather limits

This section requires that BMPs will be selected that are likely to meet numeric TMDL limits. A process must be established for identifying such BMPs on the basis of performance.

Part 4, Section E.1.b

Page 50

5% Effective Impervious Area threshold

While it is true impacts of development typically become significant once a threshold of imperviousness somewhere between 3-10% is reached it is not realistic to expect that all sites should remain below this level. In many retrofit applications this will not be possible. It is also likely that mandating 95% pervious cover on new development will encourage sprawl. This requirement seems unnecessary since a net increase in runoff volume, peak discharge and runoff duration is prohibited for sites less than 50 acres in Part 4, Section E.II.1.e.1. On projects greater than 50 acres a detailed hydraulic analysis is required to demonstrate that receiving streams and tributaries are not adversely altered.

If this section remains in the final version, please state the specific runoff reduction objective that is assumed to be met and provide for the use of BMPs other than swales that will meet those objectives. For example a retail center with a large impervious parking area that includes infiltration chambers below the parking lot would not be allowed under this section even if that design reduces runoff volumes by >95%. This type of development should be allowed assuming that it adequately reduces runoff rates and volumes.

The requirement that impervious areas be drained through a "properly designed" swale in order to be considered effectively pervious does not guarantee any runoff volume reduction or quality improvement. It also does not encourage pretreatment before pollutants are introduced to a visible, natural area. It is likely to result in swales being overloaded with flow and pollutants as engineers struggle to meet the 5% requirements since no reference is given for what constitutes "proper design".

Part 4, Section E.1.e

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Provide 72 hour drain down
See previous comments on Part 1, Table 1

Part 4, Section E.1.f
Page 50

Mitigation approach in order of preference:

- (1) Low Impact Development Strategies.
- (2) Integrated Water Resources Management Strategies.
- (3) Multi-benefit Natural Feature BMPs.
- (4) Prefabricated/ Proprietary Treatment Control BMPs.

The directive given by the Clean Water Act and echoed in all State NPDES permits is to reduce discharge of pollutants of concern to the maximum extent practicable. That would seem to require that best performing treatment devices are considered first and lesser performing BMPs should only be considered if the better performers are technically or economically infeasible. Although it's not unprecedented in California, a standard that requires consideration of land based BMPs first and relegates manufactured BMPs to sites where "green" BMPs are infeasible seems to violate the MEP standard.

For example, a recent report from the International Stormwater BMP Database and the CASQA manual shows that grass swales and detention basins are typically the poorest performing public domain BMPs. They are also likely to export phosphorous and bacteria. Vegetated swales or grass filter strips usually require irrigation to support vegetation which not only unnecessarily consumes water, but may contribute to dry weather runoff. Most integrated management practices, which are the building blocks of low impact development, are essentially miniature grass swales and detention basins distributed around a site. Some manufactured, end of pipe BMPs like media filters are consistently more effective for virtually all pollutants, yet they are to be considered only as a last resort under this section.

It would make more sense from a water quality protection perspective to eliminate the hierarchy of implementation approaches and replace it with a simple requirement that the most effective treatment controls be considered first on all sites regardless of whether they are green, grey, natural or manufactured. If engineers are accurately assessing the pollutants of concern and weighing other land use priorities they will necessarily be designing integrated, multi-benefit strategies. They must be given them freedom to use innovative devices as long as performance expectations are justified and disclosed. For example this may include commercial media filters which can be among the most effective BMPs and able to target specific constituents with custom media options.

In many urban areas, particularly at those "hot spots" like convenience stores, bus stops, and heavy traffic areas pollutants can accumulate quickly. There is also a greater potential for spills, or other events that might disrupt vegetated BMPs. For aesthetic purposes, safety reasons and ease of maintenance it is wise to capture and store pollutants in manufactured BMPs where they are contained out of contact with humans and the natural environment. The discretion to make these decisions should be retained by engineers.



Part 4, Section E.I.2
Page 51
LID manual development

LID is a term that is used to mean many different things. Sometimes it is used synonymously with "integrated management practices" (IMP) to describe actual site design BMPs. LID is more accurately used to describe set of design principles that when implemented correctly, maintain predevelopment hydrologic balance and pollutant export levels on a particular site. IMP are the specific practices or site elements that are utilized to reach the low impact goal. This distinction is important because the permit requires an LID manual, not an IMP manual.

We strongly support development of an LID manual, but with the caveat that in addition to including design and construction guidelines for integrated management practices, there must be a thorough discussion of pollutant and runoff reduction expectations and ongoing operation and maintenance responsibilities associated with these practices. The manual should include all established technologies that provide useful benefits. Allowance for use of innovative technologies that can be shown to provide similar performance and operational burden should also be allowed even if they are not explicitly listed in the manual.

Without defining these key parameters it is impossible to establish which BMPs constitute treatment to the "Maximum Extent Practicable".

Generally it is important that the permit stresses implementation of LID principles rather than prescribing specific integrated management practices. This accomplishes the following key goals which are not met by including prescriptive design criteria in a permit:

- Technological innovation is stimulated instead of stifled as engineers seek to meet performance objectives in more cost effective ways.
- BMP design manuals can and should include prescriptive design standards for BMPs that if followed will result in performance standards being met. However, they must be clear about the expected performance these BMPs.
- BMP design manuals should also include a provision for innovative BMPs to be allowed if they can be proven to meet those same levels of performance.
- Engineers must undertake a more rigorous design process that shows a specific runoff volume reduction and a quantifiable water quality benefit.
- BMPs can be tested to see if they are in fact attaining the level of performance that they are credited with.

Part 4, Section E.II.1.e.1
P 53

Projects disturbing land area of less than fifty acres - Matching the Hydrograph for the 2-year post development peak flow, volume, and duration to the pre-development peak flow, volume, and duration for the 2-year 24 hour storm event.



For clarity, please remove the requirement to match hydrographs for pre and post development. For all practical purposes matching hydrographs is impossible. A requirement that predevelopment peak flow and volume not be exceeded would be more appropriate. Restricting runoff duration as well may constrain the design and placement of integrated management practices that collectively may increase the time of concentration on a site. This would be unfortunate.

There is also a reference to "hydrograph matching" on page 61.

Part 4, Section E.III.2.a

Page 55

Mitigate (infiltrate, filter or treat)

Similar language appears in the Los Angeles County SUSMP and is the subject of current confusion. The Regional Board issued a letter of clarification of part 4.D. of the Los Angeles Permit dated December 15th which has been interpreted by some copermittees to mean that all sites must infiltrate the first 3/4" runoff.

The language in this section seems to hold infiltration, filtration or treatment as equivalent mitigation strategies. This is inaccurate. Infiltration is superior to treatment by filtration or any other conventional method in that it eliminates runoff and pollutants from overland flow. The term "treat" is confusing when appearing with "filter" since filtration is one method of treatment. The current language implies that "treating" runoff is different than "filtering" runoff, yet there is no definition of what it means to "treat" runoff.

This would be a perfect opportunity to insert some language referencing a specific treatment objective. For example it would be more fitting to say that the design storm must be treated by a BMP or series of BMPs that are likely to result in effluent concentrations below the MALs listed in Attachment C. The possibility of marginally effective treatment practices being used to satisfy the requirement is opened by leaving "treat" undefined.

Part 4, Section E.III.6.b

Page 59

Enforcement action will be taken for inadequate BMP implementation.

What are inadequate or ineffective BMPs? What criteria will be used to decide? Is it intended that the definition of inadequate BMPs is those that do not prevent two or more exceedences of the MALs or that do not meet TMDL requirements?

Part 4, Section E.III.8

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Mitigation Funding

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This is a critical section of the Permit that I strongly support. Maximum flexibility must be given to Permittees to meet water quality goals from TMDLs or MALs. For some pollutants like pathogens, advance treatment may be required which is far more practical on a regional basis.

This provision will alleviate pressure on redevelopment projects where it is infeasible to meet the 5% effective imperviousness target by allowing municipalities to require a mitigation fee in lieu of on site treatment. This fee could then fund a regional mitigation project.

Part 4 Section 4.G.6.e

Page 78-

Each Permittee shall install trash excluders

Trash excluders installation essentially keeps trash in the streets where it must be recovered. The only sweeping requirement in the Permit, on page 80, requires that curbed streets in commercial areas be swept twice monthly. Minimum sweeping requirements should be set for all areas where excluders are installed.

Trash excluders should not be required where "full capture" trash removal BMPs are installed. For example it may be determined that a single screening system installed at an outfall with many upstream inlets provides more economical and aesthetic litter control.

Summary:

Thank you again for the opportunity to comment. If you have any questions about these comments, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Vaikko", is written over a horizontal line.

Vaikko Allen II, CPSWQ
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