

DOE Requests for Reviewer Feedback

June 17, 2011

1. **(Page 4, Preliminary Draft Language Doc)**

Ecology is asking for comments on options and suggested alternatives for maintenance requirements for LID BMPs. The dispersed nature of many LID BMPs across a development site, many of which are on private property, may require a different approach to maintenance. Maintenance requirements must address maintenance standards for engineered facilities, inspection frequency and time interval for completing the maintenance action.

Options for maintenance standards include but are not limited to those in the *Stormwater Management Manual for Western Washington*, development of standards by Permittees, or adoption of standards already developed by another jurisdiction.

Options for inspection frequency include those already outlined in the permit language below (annual inspections) or alternatives that reflect issues of access to private property and the reduced consequences of failure for a small dispersed facility in comparison to a large, single facility.

Options for time intervals for completing the maintenance actions include those already included in the permit (6 months for typical maintenance) or alternatives that reflect accommodations for seasonal performance of specific maintenance actions.

Until the standards for inspection and maintenance are set forth it is not feasible to assess the practicability of inspection and maintenance of LID BMPs on private property. We appreciate Ecology's request in the draft permit language for comments on inspection and maintenance standards and trust that as these are developed, the proper degree of responsibility and liability for inspection and maintenance on private property will be crafted for the permit.

2. **(Page 8, Preliminary Draft Language Doc)**

The DOE is soliciting comments on the preliminary draft language in this document for reissuance of the Phase I Municipal Stormwater General Permit. The preliminary draft language in this section is intended to implement S8 Monitoring requirements.

The draft language for review in this document addresses only the implementation of monitoring requirements in S8. We ask that you limit your comments to the monitoring-related requirements in this section. Ecology will issue a complete draft permit with all proposed changes to permit language in October 2011 for formal public comment.

Snohomish County would request that Ecology consider additional option for monitoring which could include the following:

Dividing the Puget Sound area into three regional monitoring groups each with a regional project manager, technical staff, and field staff.

These regional monitoring groups would implement status and trends (both nearshore and wadable streams) and effectiveness monitoring. The regional monitoring groups could report directly to a regional monitoring project manager housed at Ecology. The Stormwater Work Group oversight committee could continue to provide review of the Ecology PM and the regional monitoring program.

Ecology should also consider allowing municipalities with qualified staff available to submit in-kind services in lieu of paying in. Ecology could review the resumes of staff being offered for in-kind services and use these local, qualified municipal staff to operate the regional monitoring groups. The staff would be paid by the municipalities, but would implement and report to the Department of Ecology. In addition, municipalities could get in-kind credits for the use of vehicles and equipment.

Those municipalities that do not have qualified staff, or needed equipment could still pay in to the system. These funds would be used to pay for additional equipment needed, laboratory costs, and other needed expenses. Ecology staff could manage these funds and have regional project manager's forward approvable invoices to Ecology for payment.

This approach would create a more regional, invested approach utilizing local staff with in each region. Additionally the regional staff would be able to coordinate on a Puget Sound wide scale to refine hypothesis, develop SOPs, troubleshoot issues and maintain a regional approach. Cost saving would also be realized by simplifying the contracting needs, reducing the need to manage funds through re-imbursments, and ensuring local government are utilized in the implementation of the program.

3. (Page 10, Preliminary Draft Lanquage Doc)

The proposed payment dates above correspond roughly with SWG recommendations. **How much time do local governments need to incorporate these requirements into their budgets? What month of the year works best for payment due dates for local governments?**

Snohomish County utilizes an annual budget process based upon a fiscal year start date of January 1. The annual budget process begins during the spring of each year, with department requests submitted to the County Executive in July, the release of the Executive recommended budget in September and County Council adoption by the statutory required date in November. **The County requests final permit payment cost be published no later than May 31, 2012.**

In response to the second question, we recommend that payment for monitoring be incorporated into invoices sent by Ecology for permit fees. This will minimize administrative time spent by both permittees and Ecology.

4. (Page 11, Preliminary Draft Lanquage Doc)

What do you think is the best method to equitably allocate monitoring costs among

permittees, and why? The costs proposed in the three options above were generated by:

- a. **Option 1: distributing all RSMP costs among Phase I and II permittees according to population;**
- b. **Option 2: evenly dividing half of the total costs of the Puget Sound receiving water monitoring among the permittees located in Puget Sound, and all of the southwest Washington receiving water monitoring costs among the permittees in southwest Washington, and then distributing costs among Phase I and Phase II western Washington permittees according to population; and**
- c. **Option 3: evenly dividing and distributing costs for effectiveness studies and the source identification information repository among all permittees and dividing the remaining RSMP costs according to population.**

We request additional information from DOE regarding the details of each option.

5. (Page 11, Preliminary Draft Language Doc)

The SWG recommended that there be an option for permittees to decline to participate in the regional effectiveness studies component of the RSMP, but not the other components (the status and trends monitoring and the source identification data repository). Ecology has not included an option in this preliminary draft permit for permittees to opt out of the effectiveness study component of the RSMP.

- a. **Do you think there should be such an option?**
- b. **If so, what would it look like?**
- c. **How would Ecology administer it?**
- d. **What would be the assurances that having some permittees opt out of the RSMP efforts would not compromise its chances for success?**

6. (Page 11, Preliminary Draft Language Doc)

The proposed payment amounts in S8.C.2 for Clark County include a placeholder for a receiving water monitoring program in southwest Washington. Ecology will work with Phase I and Phase II permittees and other stakeholders in southwest Washington to develop a receiving water monitoring program to include in the October formal draft permit. See the explanatory notes for more information.

N/A

7. (Page 21, Sec. 4.5- Minimum Requirement #5 On-site Stormwater Management: Appendix 1- Minimum Technical Requirements for New Development and Redevelopment)
Should permeable pavements be included in the above list of required on-site management BMP's that apply to projects subject only to requirements #1-#5?

We encourage DOE to reevaluate this requirement with an emphasis on voluntary or incentivized installations in parking lots, driveways and sidewalks where a deep soil profile above the groundwater regime exists.

Porous pavements are poor choices for arterials or for roadways with high speed where start stop braking is prevalent. It is more appropriate for parking lots, driveways and sidewalks where there is a deep soil profile above the groundwater regime.

Maintenance of the rock infiltration galleries placed under asphalt have also posed a problem over time as these areas silt in and require more frequent maintenance than standard storm infrastructure.

Requiring porous or permeable pavements on some existing roadways may introduce pollution sources that would discharge directly to a shallow groundwater or seasonal high water table condition in certain situations, creating a public health risk.

Road subgrade is required to be compacted to 95% compaction, thereby sharply reducing the ability of water to easily infiltrate and dissipate into the subgrade. On rural County roads that encompass ditches, water is likely to meet the compacted subgrade below the base course material, then move laterally to the ditch line with light flow attenuation in saturated subgrade conditions. In a majority of cases the existing roadway system in Snohomish County was not designed to accommodate saturated subgrades and thus the base course depth or reservoir of existing rock may be insufficient to bridge the required traffic loads.

In Snohomish County we have also seen a problem arise when water is discharge into infiltration trenches beneath the asphalt within roadways. When this occurs, we have seen increased reflective cracking and road surface failure due to normal winter freeze/thaw conditions or pumping of the subgrade during heavy rainfall events, rendering areas unfit for normal highway loading. Numerous systems installed on private roads within the county (Marysville area, within the Custer soil unit) have subsequently failed as a result.

Maintenance of the rock infiltration galleries placed under asphalt have also posed a problem over time as these areas silt in and require more frequent maintenance than standard storm infrastructure.

8. (Page 21, Sec. 4.5- Minimum Requirement #5 On-site Stormwater Management: Appendix 1-Minimum Technical Requirements for New Development and Redevelopment)
Should Ecology allow local governments to accept LID performance standard compliance as an option to the specific BMP requirements as listed below for projects in this size range?

For projects that result in less than 10,000 square feet of new and replaced hard surface, Snohomish County supports the proposal that allows local governments to accept either the LID performance standard or use of a mandatory LID BMP list as a means of compliance with this requirement if site

conditions are favorable for LID facilities. We currently allow an applicant to prove their compliance by hiring a professional engineer to show LID performance standard compliance.

9. (Page 34, Sec 8A– Feasibility Criteria for Selected LID BMPs: Appendix 1-Minimum Technical Requirements for New Development and Redevelopment)

Ecology would appreciate comments concerning a minimum initial saturated hydraulic conductivity of native soils for bioretention or rain garden use. Sites in soils with less saturated hydraulic conductivity could still use bioretention/rain gardens for stormwater treatment. But would gain only nominal flow reduction benefit that would vary with the location of the underdrain.

Setting a minimum saturated hydraulic conductivity of native soils for bioretention or gardening is one of numerous metrics that should be observed when determining the effectiveness of a bioretention facility or rain garden for stormwater treatment.

More importantly, ensuring sufficient depth of unsaturated soil above a seasonal high water table is important to protect the water quality of the groundwater regime, this is necessary to protect any drinking water supply from wells.

The minimum saturated hydraulic conductivity of a soil is not the only important factor to evaluate, since this is just the stacking or mounding function of the water above a particular soil layer; in this case, typically at the bottom of the base course and the top of the subgrade native soils. It is more critical to have sufficient unsaturated soil profile depth above a seasonal high water table. Shallow depths to water tables or groundwater render permeable pavement potentially infeasible where groundwater may even exfiltrate from the surface due to artesian or high water table conditions.

10. (Page 34, Sec. 8IB – Feasibility Criteria for Selected LID BMPs: Appendix 1-Minimum Technical Requirements for New Development and Redevelopment)

Road Type: Ecology would appreciate input concerning a basis for an infeasibility decision concerning any particular road category (e.g., arterials, highways), or roads exceeding a certain design Annual Average Daily Traffic (AADT) count.

Snohomish County appreciates and supports efforts to encourage porous pavement as an LID option. However, we have concerns regarding the practicability and long term impacts of requiring this method across the board. We encourage DOE to reevaluate this requirement with an emphasis on voluntary or incentivized installations in parking lots, driveways and sidewalks where a deep soil profile above the groundwater regime exists.

Requiring porous or permeable pavements on some existing roadways may introduce pollution sources that would discharge directly to a shallow groundwater or seasonal high water table condition in certain situations, thereby creating a risk to public health.

Road subgrade is required to be compacted to 95% compaction, thereby sharply reducing the ability of water to easily infiltrate and dissipate into the subgrade. On rural County roads that encompass ditches, water is likely meet the compacted subgrade below the base course material, then move laterally to the ditch line with light flow attenuation in saturated subgrade conditions. In a majority of cases, the existing roadway system in Snohomish County was not designed to accommodate saturated subgrades and thus the base course depth or reservoir of existing rock may be insufficient to bridge the required traffic loads.

In Snohomish County we have also seen a problem arise when water is discharged into infiltration trenches beneath the asphalt within roadways. When this occurs, we have seen increased reflective cracking and road surface failure due to normal winter freeze/thaw conditions or pumping of the subgrade during heavy rainfall events, rendering areas unfit for normal highway loading. Numerous systems installed on private roads within the county (Marysville area, within the Custer soil unit) have subsequently failed as a result.

Maintenance of the rock infiltration galleries placed under asphalt have also posed a problem over time as these areas silt in and require more frequent maintenance than standard storm infrastructure.

Finally, porous pavements are poor choices for arterials or for roadways with high speed where start stop braking is prevalent. It is more appropriate for parking lots, driveways and sidewalks where there is a deep soil profile exists above the groundwater regime.

11. (Page 34, Sec. 8IIB – Competing Needs: Appendix 1-Minimum Technical Requirements for New Development and Redevelopment)
Ecology would appreciate comments concerning the type of competing needs that can be considered as a defensible reason to forego use of an on-site stormwater management BMP.

Snohomish County requests the following paragraph be added to this section:

Where the placement of the LID BMP would result in the transfer of a private development drainage responsibility (or its cost) to the public, either directly or by default.