

LOW IMPACT DEVELOPMENT - PHASE 1

Section 5: Controlling Runoff from New Development, Redevelopment

S5.C.5.b.i: "Equal or similar" requirement

The draft permit states that the Department of Ecology determines Minimum Requirements, thresholds, and definitions in Appendix 1, and Minimum Requirements, thresholds, and definitions determined by Ecology to be equivalent to Appendix 1, for new development, redevelopment, and construction sites and instructs these requirements to be included in ordinances adopted by the local government. It also states that local requirements and thresholds shall provide equal or similar protection of receiving waters and equal or similar levels of pollutant control as compare to Appendix 1. **We request that Ecology provide guidelines that will help local governments determine what standards will be considered equal or similar protection outside of a determination by Ecology.**

S5.C.5.b.iii: Low Impact Development

In general Snohomish County supports the incentivized and/or voluntary use of LID techniques where feasible but have concerns about the requirements as currently drafted. In particular we are concerned that a "one size fits all" approach to LID requirements will not be feasible at many locations throughout the county. In areas where impermeable soils are located at or near the ground surface; portions of the county road network that are heavily traveled, maintain high average speeds and/or require frequent sanding, plowing and de-icing the technical feasibility combined with increase maintenance levels required may prove LID to be ineffective in function and cost. **We encourage DOE to take these concerns into account and revise the language to account for incompatible site conditions, long term maintenance and access.**

S5.C.5.b.iv: Proposed time schedule for revising codes and local stormwater manuals

The revisions required for the new requirements will have a significant effect on both technical revisions and governmental business process changes, including the necessity to implement extensive code revisions In Snohomish County this process may include initial staff review, Planning Commission, Agricultural Board and Snohomish County Tomorrow recommendations to council and county council review that includes significant public comment period timelines. Based on the code revision process experienced for the current permit and the significant new requirements for LID, the schedule set forth in the permit may not be achievable. **We recommend a schedule of at least 30 months from the effective date of the permit.**

S5.C.5.b.v: Inspection and maintenance responsibility for LID BMPs

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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.

S5.C.5.c: Watershed-scale stormwater planning

Stormwater planning

If a docket application for a UGA expansion or UGA infill that triggered the LID threshold were accepted by the county, an initial scoping by the County would be necessary to determine the extent of environmental review under SEPA. There would be a cost to the County to perform initial calculations to confirm, for example, if the proposal would trigger a 5% or greater increase of impervious surface to one or more watersheds.

Producing useful information from the SUSTAIN model would require a detailed and accurate inventory of the storm drainage system in the planning area. Currently a minority of municipalities have such information about their storm sewers. The generation of this information, which would be necessary prior to modeling.

S5.C.5.c.1: Hydrology and Water Quality Impact Analysis Requirement

Snohomish County is concerned that the proposed requirement mandating permittees to determine the total impervious surface area of each watershed, and maintain updated records of such will create a time burden with significant staffing implications, and consequentially increase costs to the County, absent state assistance.

The definition of "watershed" is not consistent with "basin plan" at 1 to 50 square miles (2005 Ecology Stormwater Manual). **We are concerned that the definition is not precise enough to prevent watershed delineation.**

It is presumed that any cumulative expansion of a UGA in a basin and subsequent zoning will take place within multiple drainage basins. **Will permittees be required to conduct separate analyses and predictions of impervious surfaces for each basin?**

S5.C.5.c.2: Analysis Requirements

We are concerned that the existing computer models are not adequately developed for use in a regulatory situation. We request that DOE share with permittees what specific computer modeling software will be required to document water compliance for LID projects.

Under the current draft NPDES permit requirement, the permittee will be required to predict the water quality impacts of a UGA expansion. **We are concerned about the financial impacts of increased staff time to compile such information without state assistance to carry out this requirement.**

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Snohomish County is also concerned that an applicant-driven UGA expansion process may mean a first-in penalty would occur requiring the first applicant to bear the full cost of an initial watershed study..

S5.C.5.c.2.a: Minimum performance Measures

This section is missing a number, causing the remainder of the section to be out of sequence.)

We also request clarification by Ecology on the following: Does “water quality” apply to ground and surface water?

S5.C.5.c.2: General Questions

Snohomish County also requests clarification on the following:

- Who determines what constitutes “Best Available Science”?
- How will new science be incorporated?
- Will the permit, supporting and referenced documents constitute BAS?
- Is it the intent that all private projects are to be subjected to an assessment of public benefits, a disclosure of private expense for each proposed action, and an evaluation of the social, environmental and economic benefits of a particular project?
- What social values are to be measured and described?
- Why are rezones specifically identified for this level of analysis?

S5.C.5.c.3: Reporting

Some legislative actions may take place after the report is submitted and will be unable to be included if they occur after the annual report. **Language should be amended to refer to actions completed within the reporting period.**

**Appendix 1 – Minimum Technical Requirements for
New Development and Redevelopment**

General Comments

Does Ecology intend to adopt all documents referenced in Appendix I as BAS and/or will local governments be required to adopt them?

Green roofs

To encourage the use of green roofs, we suggest that Ecology not treat them as a hard surface. Requiring flat roofs to be green roofs in the commercial big box store industry will require significant redesign of the structural elements of the long span light weight trusses that are currently used for these structures. The cost implications this change could be significant.

Section 2. Definitions Related to Minimum Requirements

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Porous pavement

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.

Section 2 – Definitions Related to Minimum Requirements

Bioretention BMPs

Snohomish County requests that to the greatest extent possible Ecology use existing standards and specifications for bioretention BMPs. In developing its 2010 Drainage Manual, Snohomish County made a considerable effort to incorporate standards and specifications that are commonly used by design professionals and the construction industry, first among them being the standards and specifications set forth by APWA and WSDOT.

In addition, Ecology must specify appropriate test methods for materials and construction practices.

Hard Surface

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The new definition uses the term “green roof.” The term “vegetated roof” is also used in Appendix 1, however neither term is defined. **We request that Ecology define these terms and set forth technical specifications for each, as use of such roofs is required by the draft permit for new commercial development.**

Highway

The definition and use of the term “highway” needs to be clarified to prevent confusion. The term is applied in section 4.6.3 (Enhanced Treatment, p. 24) with a reference to “Fully controlled and partially controlled limited access highways...” Counties do not own highways. The terminology should be changed to accurately reflect the intent of the section.

Maximum extent feasible

The term “maximum extent feasible” is currently undefined and inconsistent with those contained in federal regulations **Snohomish County requests a language change to “maximum extent practicable,” for consistency with federal regulations.**

Permeable pavement

The definition of “Permeable Pavement” should contain references to necessary aspects of engineering design, required infiltration rates, soil permeability, etc. The exclusion of such references implies that permeable pavement installation can be successful anywhere, which has been proven to be an incorrect assumption.

Receiving water

If “receiving waters” include both ground and surface waters, this will impact the criteria for down-stream analysis.

Vehicular use

We request clarification on this definition due to unclear text.

Section 3 – Applicability of the Minimum Requirements

3.1: Thresholds

The intention of Ecology in the second paragraph of Section 3.1 is not clear. We request clarification on this section.

3.2: New Development

The first sentence of Section 3.2 should specify that this requirement applies to exempt activities.

Figure 3.2:

In Figure 3.2 some changes are not identified in strikeout/underline format. Specifically two boxes on the left side are modified to apply Minimum Requirements 6-9 to replaced hard surfaces for new development, however there is not an explanation of the revision. **Please clarify and explain this revision in the next version of draft language.**

3.3: Redevelopment

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The inclusion of permeable pavements and green roofs in the term “hard surface,” coupled with the use of this term in the applicability rules and the existing area threshold triggers creates a disincentive for replacing existing impervious pavement or roofs with permeable pavement or green roofs.

For example, replacement of more than 2,000 s.f. of impermeable pavement or roof with permeable pavement or a green roof triggers the need for a stormwater site plan, for which a licensed engineer is required. **Snohomish County recommends exempting projects that result in a net reduction of impervious surface from the requirement to execute a full stormwater site plan, provided that engineering or other licensed practice is not otherwise required for the project.**

3.4: Additional Requirements for Redevelopment Project Sites

We request reinstatement of the variance/exception to flow control requirements for a severe economic hardship.

Section 4 – Minimum Requirements

4.1 Min. Req. 1 – Preparation of Stormwater Site Plan

Section 4.1 refers to “site-appropriate development principles” for use in stormwater site plans. **Will the referred to “site-appropriate development principles be included in the 2012 Stormwater Manual?**

4.2 Minimum Requirement 2 – Construction Stormwater Pollution Prevention Plan (SWPPP)

Element 12.b of the construction SWPPP requires that completed lawn and landscaped areas be protected from compaction during construction. In the scheme of a construction project, impacts to existing lawn and landscaping are avoided as much as possible but are a secondary concern. **Under the draft permit, will they now be considered a LID BMP to be protected along with the other BMPs?**

4.5: Minimum Requirement #5 – On-site Stormwater Management

In Snohomish County private property owners are currently responsible for the operation and maintenance of stormwater flow-control and treatment facilities that serve their property. The proposed requirement to infiltrate water in the road right-of-way to the maximum extent feasible could potentially affect the County’s right to enact this policy for developments in which a road is created to serve the development.

While road ownership in these developed is typically transferred to the County, historically the stormwater flow control and treatment systems are constructed in a separate property owned collectively by the individual property owners of the development. These systems are sized and designed to accommodate road runoff, which is routed to such facilities.

The current proposed language states that the stormwater mitigation system for rain falling on the road is the road right-of-way, thereby shifting responsibility for the long-term operation, maintenance and functionality to County government.

We are concerned about the legal and fiscal implications of this proposed policy shift.

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Project Thresholds

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. We currently allow an applicant to prove their compliance by hiring a professional engineer to show LID performance standard compliance.

The requirement that pavement for public walks and public roads must be permeable to the maximum extent feasible may not be practical or advantageous based on cost, increased maintenance and reduced durability. A more appropriate specified use would be low traffic volume roads with analysis and assurance that receiving waters are not impaired.

The requirement that all public road projects with new and replaced hard surfaces must incorporate “infiltration below pavement” would be a major alteration to standard road project design and construction impact. **We request that the feasibility criterion in Section 8 address the impacts on the road subgrade, underground utilities, etc.**

Until the specifications for permeable pavement “storage basins” are provided we cannot assess the feasibility or legality of this proposal.

We request the last bullet in Section 4.5, concerning vegetated roofs is confusing and we request that it be rewritten to clarify its purpose.

Snohomish County also requests an explanation for the methodology used by DOE to determine that “Bioretention BMPs should comprise at least 7.5% of the area for residential developments and 4% of the area for commercial developments,” and the basis behind the only alternative to a vegetated roof system that routs runoff to “below pavement.”

Section 8 – Feasibility Criteria for Selected Low Impact Development Best Management Practices

I.A – Bioretention BMPs and rain gardens are considered infeasible where:

The current proposed language under Section 8.I.A, bullet 11 states that when *“The drainage area is more than any of the above amounts, and cannot be reasonably broken down into amounts smaller than those designated above, and the minimum vertical separation of 3 feet of seasonal high water table, bedrock, or other impervious layer is not achieved”*, Bioretention BMP’s and Rain Gardens are considered infeasible. **We request that DOE specify the means by which a project applicant or local government shall determine whether a drainage area can be reasonably broken down into amounts less than those stated in the previous criterion.**

Bullet 12 states that Bioretention BMPs and rain gardens are considered infeasible where *“The field testing indicates potential bioretention/rain garden sites have an initial native soil saturated hydraulic conductivity less than 0.15 inches per hour. In these instances bioretention/rain gardens can be built with an underdrain”*. **As written this statement is ambiguous and unclear as to when an underdrain may or must be installed. Please clarify this criterion.**

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Bullet 14 states that when *“There is a lack of usable space for rain garden/bioretenion facilities at re-development sites”* bioretention BMPs and rain gardens are considered infeasible”. The criterion stating “The only area available for siting would threaten the safety or reliability of pre-existing underground utilities or pre-existing underground storage tanks” could apply to any bioretention/rain garden location adjacent to a public right-of-way. **We request that Ecology clarify how it intends for local governments to interpret and implement this requirement.**

Snohomish County also requests that the following criteria be tailored to match local jurisdictions’ critical area requirements: Slope stability, erosion hazards, aquifer protection, wells, on-site sewage, underground storage tanks and structural setbacks.

1.B – Permeable pavements are considered infeasible where:

(7, pg 35) The bullet at the top of the page 35 on native soils does not appear to be a true exception criterion because it contains the alternative in the Note. If the native soil is not suitable, then the media layer is required. **We request clarification from DOE on how this creates an exception to the requirement.**

(13) Traditionally Snohomish County experiences a small number of true snow events each winter that are often severe and last several weeks in certain areas. Also, during the winter frequent sanding and de-icing may be required on any county road with regular and heavy applications of sand. ***How will local agencies be expected to calculate the infeasibility criteria of “Regular, heavy applications of sand occur to maintain traction during winter”?***

Roads subject to extensive turning movements or high speed stops are inappropriate candidates for porous or permeable pavements.

1.C – Vegetated roofs are considered infeasible where:

Vegetated roofs for commercial structures will require significant changes in design and increases in cost. **We request that an economic feasibility criterion be added to ensure reasonable application of this requirement.**

II.– Competing needs

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

- c. 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.**

MONITORING – PHASE 1

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.

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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 reimbursements, and ensuring local government are utilized in the implementation of the program.