



Department of Public Works/Engineering  
PO Box 1307/Issaquah, WA 98027  
(425) 837-3400 Fax (425) 837-3409

January 31, 2012

Municipal Permit Comments  
WA Department of Ecology  
Water Quality Program  
PO Box 47696  
Olympia, WA 98504-7696

**RE: 2012 Draft Municipal Stormwater General Permit Comments**

Thank you for this opportunity to provide comments on the 2012 draft Western Washington Phase II Municipal Stormwater Permit (Permit). The City of Issaquah strongly supports the municipal stormwater permit program and the goal of preventing and controlling pollution in waters of the State of Washington in accordance with the Clean Water Act. We support the overall purpose of the Permit to set a uniform regulatory framework for stormwater management throughout the State.

However, the City is concerned with a number of the proposed changes to the Permit due to an inadequate process being followed to develop the permit, economic hardships the new permit would create, and vesting issues. The City feels that existing stormwater regulations that were implemented during the 1<sup>st</sup> term of the Permit are adequately protective of the environment and efforts to improve water quality in the Puget Sound basin should rely less on regulations and more on investing in improvements that will clean up pollution sources.

**Phase II Permit Development Process**

The process for developing the revised Phase II Permit provides very little time for affected agencies to review and comment on the large volumes of technical manuals being incorporated into the permit outside of the State's normal rulemaking process. The amount of time being provided to review these technical manuals has been inadequate (in the case of the LID manual, less than one month). To allow meaningful review and the ability of affected parties to participate effectively, large regulatory changes of this nature should go through a rulemaking process prior to implementation as required by the State's Administrative Procedure Act (Chapter 34.05 RCW). This Act defines a rule (or regulation) as a written policy or procedure by a state agency that is generally applicable to a group of people, industries, activities, or circumstances. Under the Permit revision process, the Department of Ecology is by-passing the required rulemaking processes and implementing new regulations and voluminous technical manuals under the auspices of a "permit condition".

In addition to the need to follow the rule-making process Ecology needs to provide SEPA review, and also perform an Economic Impact Assessment as required by the Regulatory Fairness Act (Chapter 19.85 RCW) if an action will impose more than minor costs on businesses. The proposed modified Permit will impose significant costs on business.

Currently Ecology proposes to issue the new Permit in June 2012 and make it effective in August 2013 under the premise of an expedited and inadequate review time for the Draft Permit and its two new supporting Technical Manuals (draft 2012 Ecology Stormwater Manual, and the LID manual).

**Economic Hardships**

While the review of the draft Permit and supporting manuals is not complete, it is clear that requirements contained within them will create economic hardships for private as well as public entities. The additional requirements are unsubstantiated as Ecology has not performed a review the effectiveness of the current Permit conditions to protect the environment associated with stormwater. Without this evaluation, Ecology is proposing

to increase regulatory requirements without basis which increases cost to everyone. This increase in regulations is coming without funding to support the additional requirements in a time of an economic downturn.

### Vesting

The proposed permit contains language that precludes stormwater code vesting at the local level. This language creates conflicts with existing vesting regulations and State Codes that provide for long term development agreements which vest large scale projects for periods of time of 20 – 30 years as well as Master Site Plans and other major projects that may be phased over a time period of greater than 5 years.

### Additional Comments

The City also opposes several other significant proposed changes to the Permit:

- Participation in the regional stormwater monitoring program should be optional and the Opt-Out provision should be revised to allow a cost effective and locally controlled program, without the strict conditions Ecology is proposing to place on Opt-Out,
- The 1-acre threshold should be retained, as it relates to retrofitting flow control at small sites in urban areas, as removing it would significantly impact redevelopment and economic recovery, and
- The mandatory LID requirement should be deleted or revised to allow significantly more local flexibility and engineering judgment in applying LID to factor in local conditions that may or may not be feasible for LID.

Attachment A to this letter are additional detailed comments related to the above as well as other areas within the draft permit.

### Recommendations

The City of Issaquah recommends that:

- Ecology delay the issuance of the permit to allow for rule-making to occur on the supporting technical manuals and more thorough review (technical, SEPA, and Economic Impact) of the draft Permit,
- The State provide substantive funding to local agencies to support the additional requirements,
- Ecology remove the language pertaining to not allowing vesting to stormwater regulations at the local level, and
- Recommendations contained within Attachment A to this letter be implemented.

Thank you for your consideration. If you have any questions, please contact Kerry Ritland at (425) 837-3410.

Sincerely,

CITY OF ISSAQUAH



Sheldon Lynne, PE, PG  
Public Works Engineering Director

cc Kerry Ritland, Surface Water Manager  
Bob Harrison, City Administrator

## ATTACHMENT A

### City of Issaquah Comments on 2012 draft Western Washington Phase II Municipal Stormwater Permit

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#### 1. Ecology's Public Review Process is Rushed and Inadequate, and New Development Regulations are Inappropriate in the Current Economic Downturn

Ecology plans to issue the Permit in June 2012 with an effective date over a year later (August 1, 2013). ESHB 1478 requires an updated permit to become effective August 1, 2013, but does not include a deadline for when the permit should be issued.

Ecology has a deadline next month for comments on the draft 2012 Phase II Permit, the draft 2012 Ecology Stormwater Manual, and the LID manual. The technical manuals are very lengthy, technically complex, and incomplete. This schedule for modifying the permit is far too aggressive, especially given the trend of reduced staffing in local governments.

Many cities have also raised the issue of Ecology issuing these new development regulations during a downturn in the economy.

##### **Recommendation:**

- Delay issuance of permit for one year, until 2013, to allow additional time to review technical documents that are referenced by the permit.
- Ask the legislature to delay updating the permit to beyond August 1, 2013, to address negative economic impacts of issuing major new regulations during a down economy and the fact that Ecology is seeking major regulatory changes so soon after the last round of code updates in 2010.

#### 2. No Lessons Learned From the First Permit Term

Ecology has not evaluated the successes and failures during the first permit term. Meanwhile, Phase II permittees, engineers, developers, and many others are being challenged with additional regulatory requirements and associated costs without having adapted to the current Permit.

New stormwater standards under the Phase II Permit have been in effect only since early 2010, but Ecology is proposing to add increasingly strict development requirements only two years later. Little development has occurred since 2010, so it is too early to tell whether the new standards are working. The administrative burden on City staff to maintain records and report annually on many permit requirements is high, but we have not heard anything about whether the Phase II permit program is effective at meeting water quality goals and is economically sustainable by permittees. Also, Phase I permittees have been monitoring stormwater for 10 years under the existing permit, but this is being ignored by the new permit. Monitoring data

from countless studies have been done in the past, but the regional program is starting over rather than building upon past work.

Fundamentally, the proposed Permit language requires jurisdictions to divert focus and limited resources from correcting known water quality problems that aren't addressed by the Permit. Stormwater from large areas of urban areas are untreated and will remain so. The Permit places the burden of cleaning up stormwater on costly stormwater flow controls that will be built only under future development, but this occurs at a very slow pace (around 2%/year). Advancement in treatment technologies that remove pollutants from stormwater runoff is also proceeding at a very slow pace, making it difficult to make real progress on cleaning up existing stormwater.

**Recommendation:**

- Delay implementation of new permit conditions until Ecology document how the current Permit is performing.
- Conduct a cost-benefit evaluation of current and proposed stormwater regulations, to see what works and what doesn't.
- Delay implementation of new stormwater standards, including LID, until an evaluation of both existing and proposed regulations demonstrates their value and effectiveness.

### **3. S5A5b - Reporting of Department and Staff Information**

The Permit states that permittees shall provide detailed information in the First Year Annual Report identifying all departments that conduct stormwater-related activities, including roles and responsibilities, and an organization chart identifying key personnel. The Fact Sheet states this is to improve internal and external coordination and communication. Internal coordination mechanisms have already been put in place under the existing Permit. Citizens and others who are not City staff are already able to contact the appropriate staff with minimal effort. This requirement burdens jurisdictions with an extra administrative task that provides no additional benefit in most cases.

**Recommendation:**

- Delete the new language in S5A5b. The original language clearly requires coordination within jurisdictions through a permit coordinator.

### **4. S5C1c - Measuring Effectiveness**

The draft language states that "no later than February 2, 2015, each permittee shall begin measuring the understanding and adoption of one **new** targeted audience in at least one **new** subject area, with the resulting measurements being used to direct education and outreach resources most effectively." While the City agrees that public education programs should target as many of the audiences and subject areas listed in the Permit as possible, this language is too restrictive and should be revised. For example, the City of Issaquah is beginning a pilot project in a typical residential neighborhood that targets homeowners and pet waste, including monitoring and measuring effectiveness. If this pilot study is effective, it will be expanded to other neighborhoods. The Permit language as written does not allow existing successful

programs to be expanded. The City does not currently have the resources to implement multiple programs that include effectiveness monitoring.

**Recommendation:**

- Add the following language to S5C1c: The continuation or expansion of successful public education programs that measure the understanding and adoption of targeted behaviors for targeted audiences meets this requirement.

## **5. S5C3 - Illicit Discharge Detection and Elimination**

**S5C3bi Allowable Discharges:** This paragraph lists non-stormwater discharges that are allowed under the Permit. The most significant change to this list is that discharges from emergency firefighting are proposed to be allowed only **during** emergency firefighting operations. It is not clear what the impacts of this change will be to firefighting operations. Also, routine dye testing for maintenance and IDDE activities should be allowed.

**Recommendation:**

- Provide clarification on the following language: Discharges that occur during emergency firefighting activities in accordance with S2 Authorized Discharges.
- Add dye testing to list of conditionally allowed discharges.

**S5C3c Field Screening:** This requires field screening of 20% of the city's municipal separate storm sewer (MS4) each year. For Issaquah, depending on how this is interpreted, this means field screening 2.3 square miles, 36 miles of storm sewer, or 1120 MS4 catch basins. This would require the hiring of significant additional staff resources for a low priority activity, or significant expense for contracting of TV inspections. Typically, storm drains need to be inspected only every 10-20 years to address maintenance and replacement of failed pipe. Only very rarely are illicit connections detected during these activities, as illicit connects are typically found through other means such as observance of dry weather flows, complaints, and detection through periodic catch basin cleaning.

The goal of the IDDE program is broad: to prohibit non-stormwater discharges into the MS4. To accomplish this Ecology should not prescribe one single approach such as field screening for IDDE, but rather allow municipalities to use a variety of ways to get from detection to elimination. Local jurisdiction knowledge plays a significant role in which path to take. Issaquah currently uses several methods which maximizes the efficiency of the IDDE program and has been successful with this multi-system approach.

- Operations field staff who are routinely inspecting and maintaining the City's MS4 are trained to look for and report illicit discharges and connections for follow-up. For example, all catch basins are clean on a four year cycle (or more frequently) and staff make observations at that time.
- The City responds quickly to all complaints and reports of illicit discharges or connections.
- The City works with businesses through the local source control program to identify and address illicit discharges.

- The City has a private stormwater conveyance rehabilitation program that includes inspecting for illicit discharges and connections.

All of the above are the most cost effective and efficient way to use current staff resources to reduce illicit discharges and connections. Annual field screening of 20% of the MS4 requires a significant increase in staff resources with little additional benefit to water quality.

**Recommendation:**

- Revise the language in S5C3i to state "Permittees shall prioritize conveyances and outfalls and prioritize and complete field screenings at a level that is appropriate to the characteristics of the MS4 and water quality concerns."

## **6. S4C4- Removal of 1 Acre Threshold**

The draft Permit proposes to increase stormwater standards over the current Permit, creating a significant disincentive to redeveloping urban core areas. Elimination of the 1-acre threshold is one example of this. The current Permit regulates public and private development projects greater than 1 acre. Eliminating the 1 acre threshold is particularly hard on small redevelopment projects, where flow control must be retrofitted for all **replaced** impervious surfaces (in addition to **new**), local development patterns didn't anticipate the need for future stormwater detention, and hooking up to existing stormwater infrastructure to drain deep ponds or vaults can be very difficult unless pumps are used. This will discourage redevelopment on smaller parcels in urban core areas that don't have the luxury of a direct discharge to receiving water. It also expands Permit regulatory oversight to many more projects, requiring additional staffing.

Certain communities are hit hard by the proposal to eliminate the 1 acre threshold. Most large urban communities have the capability to "direct discharge" to large receiving bodies of water without providing flow control. Thus, there is no burden on redevelopment to provide flow control in many urban areas and thus won't raise the issue with Ecology. However, Issaquah has no such advantage. Our downtown is flat, has shallow groundwater, an old stormwater infrastructure, and no direct discharge option (except at very high cost). It is extremely difficult and costly to construct underground detention vaults in areas of high groundwater, and tying those vaults into stormwater pipes that are only two feet underground makes it necessary to install pumps. This places a significant economic disadvantage on redeveloping our urban core, as well as urban areas in other "landlocked" communities. Meanwhile, the environmental benefit of these small but very costly retrofits within high density developed areas is minimal at best.

There are a number of other impacts associated with eliminating the 1 acre threshold, including a substantial increase in the number of sites requiring annual private stormwater facility inspections, and a substantial increase in plan review and recordkeeping requirements.

**Recommendation:**

- Exempt the requirement for retrofitting flow control for replaced impervious surfaces on redevelopment projects less than 1 acre within the UGA. This addresses the primary concern that retrofitting stormwater detention is difficult, expensive and often infeasible in small urban sites.

## **7. S5C4a - Vesting of Stormwater Standards**

New Permit language states that vesting under local permits may not be extended to stormwater regulations. That is, requirements shall apply to all applications submitted after January 1, 2016 **and shall apply to projects approved prior to January 1, 2016, which have not started construction by January 1, 2021.** The proposed language (above) is not clear on vesting for master site plans, development agreements, or other phased projects.

### **Recommendations:**

- Ecology should remove the language pertaining to not allowing vesting to stormwater regulations at the local level. Vesting rules for stormwater must be consistent with other vesting rights that pertain to land use development regulations to ensure that previously approved plans for long-term or phased projects remains vested. A 5-year cutoff is far too short for major projects that could take 20-30 years to complete.

## **8. S5C4g - Revision of local development-related regulations to require Low Impact Development (LID) principles**

The Permit requires jurisdictions to perform a comprehensive review of all codes to incorporate LID principles. This creates a significant burden on staff, and the need for consultants, just to implement what is already required by the Permit. Many jurisdictions have already voluntarily reviewed their codes for LID and thus it seems redundant or unnecessary to make it a Permit condition to do it again. Issaquah has already adopted several LID concepts into the municipal code. Such requirements should remain voluntary because the approach in the LID Guidebook addresses a broad range of long term land use policies, codes, and requirements that require significant internal staff resources to review and change. Such evaluations should be addressed by State comprehensive planning rules or a similar regulatory framework, not under a stormwater discharge permit.

### **Recommendation:**

- Delete the requirement for LID planning from the Permit. It provides no additional value because the Permit already defines what is required in local codes and local process ensures adequate review of proposals.

## **9. S5C4h - Watershed Planning**

The goal of the watershed scale planning requirement in the Phase I Permit is to "develop a watershed scale stormwater basin plan ....with the goal of accommodating growth and maintaining beneficial uses." The list of required actions indicates that this involves a lengthy and very expensive planning effort.

Watershed planning is not appropriate as a condition of the Permit. The NPDES Municipal Stormwater Permits are focused on eliminating and preventing discharges of pollutants into the surface waters of Washington State. Planning efforts on a watershed basin scale are more related

to land use planning as the stormwater regulations for runoff control and treatment are expected to address the potential impacts due to development and other activities. Also, having to "participate and cooperate" with the Phase I jurisdiction on a watershed plan is a vague requirement that places Phase IIs at a disadvantage with no control over the process and outcomes.

**Recommendations:**

- Delete the requirement for watershed planning in the permit.

## **10. S5C5 - Municipal Operations and Maintenance – Catch Basin Cleaning**

The existing Permit requires that all catch basins be cleaned once during the permit term. The City met this requirement through the present maintenance program. Known problem areas are also cleaned more frequently. The new Permit says that catch basins should be cleaned every two years, unless maintenance records justify otherwise. Hiring additional staff just to generate maintenance records to say that a 2-year frequency is justified is an unjustified expense. There is no technical basis for this requirement, and the current permit provides adequate levels of service for maintenance.

**Recommendation:**

- Keep the existing Permit requirement that all catch basins be cleaned during the 4-yaer permit term. There is no technical basis that points to the need to clean all catch basins in a city every two years.

## **11. S7 - Total Maximum Daily Load (TMDL)**

The City recommends that the Mountain Park Outfall monitoring site be replaced by the Lewis Lane Outfall monitoring site. This change has already been discussed with the Permit Coordinator. This is because the data collected by King County and used to select the Mountain Park Outfall is now considered flawed, and the Lewis Lane Tributary has reported data that needs to be further assessed.

## **12. S8 - Regional Stormwater Monitoring**

This expensive monitoring program (\$12 million) pays for regional water quality monitoring and effectiveness studies. Proposed monitoring is in rivers and streams in a wide-ranging but sparse network. In response to a strong lobbying effort by proponents of monitoring, Ecology has changed the plan that was originally proposed in the 1<sup>st</sup> Permit term. Instead of locally based programs, Ecology now strongly favors a costly regional monitoring program (“buy in”) that provides no local benefits to most jurisdictions.

As a result most jurisdictions won't get any data on their local conditions. The actual amount of data collected by the regional program is actually relatively small, and doesn't include parameters important to stormwater such as toxic metals or pesticides. The “opt out” provision, to do monitoring on our own, is not a true local option because it is much more costly (over two times

more expensive than buying in). It is also just an extension of Ecology's regional program because Ecology mandates very prescriptive requirements that mirror the regional program's monitoring design and reporting, thus preventing local control, innovation, and cost efficiency.

The intent and purpose of the regional monitoring program has no relevance to local municipal operations. It is scientific research, developed by interest groups whose goal is to collect more data given the prospect of a stable and long-term funding source. It is fundamentally flawed in terms of the actual amount of data being collected, and whether that data has any real value to Ecology or the permittees for helping understand stormwater issues.

This program will also end up being much more costly than advertised. Costs proposed by Ecology are modest in the 2<sup>nd</sup> Permit term, probably to get buy-in to the program to get it started. However, costs will likely increase substantially in the 3<sup>rd</sup> Permit term because the program is only ramping up in the 2<sup>nd</sup> Permit term and many monitoring "gaps" were left out to make the regional program economically attractive to permittees.

### **Recommendations:**

- Delete the regional monitoring program from the Permit. This research effort is expensive (with costs increasing in the future), does little to improve our understanding of stormwater issues, does nothing to improve or regulate local municipal operations, and is more appropriately funded by the State.
- If a requirement for monitoring is retained, Opt Out must be scope and cost-equivalent to the regional program with complete local flexibility on monitoring program design and implementation. This returns the monitoring concept to that proposed in the 1<sup>st</sup> Permit term, to a level that is affordable. The cost discrepancies between the Pay In and Opt Out choices are unacceptable. Revise the Opt Out options to be equivalent to the Pay In option.
- Provide clarification on the legal authority that protects permittees from third party lawsuits if they choose the Pay In options (thereby having no monitoring occurring within the jurisdiction).
- Clarify the reporting requirements for outfall monitoring conducted in accordance with the required Effectiveness Studies for monitoring that exceeds water quality standards.

### **Additional Comments on Regional Monitoring Program**

The proposed scope of the program far exceeds the expectations of the EPA Phase II rules, where Permittees would conduct limited ambient monitoring for relatively few pollutants of concern. Phase II permittees are being asked to contribute \$6.4 million to fund the regional program. The entire program over this Permit term will cost \$12 million. The cost is far too high for the limited benefits provided. This \$12 million is spent entirely on monitoring and studies, and does not provide any actual water quality improvements by the end of the Permit term.

The problems with urban runoff for the pollutants to be monitored in this program are already well known and well documented. Countless studies and reports have been generated in the past including stormwater monitoring data and information. For example, recent monitoring studies include the outfall monitoring conducted by the Phase I permittees during last Permit term. This data is included in the Fact Sheet and includes monitoring results for a comprehensive number of

pollutants by land use type. A comprehensive regional program will provide no information to the City to know where problems are that need to be addressed, as the City has been conducting a small scale and cost effective monitoring program for years. What is lacking are funds to be able to retrofit water quality treatment into the ground now. This \$12 million program does nothing to change that, in fact it siphons money away from being able to construct water quality retrofits.

The Permit language as currently drafted would have jurisdictions divert focus and limited resources from the greater priority emphasis on correcting known toxic problems and retrofits where stormwater is untreated. Most development in the Puget Sound region predated any level of water quality and flow control treatment requirements. The focus should be on repairing past damage (via retrofits) while ensuring minimal further impacts due to future development.

#### Status and Trends Monitoring:

- The Opt Out choice (Option 2) requires status and trends monitoring to begin no later than July 1, 2014, however the Pay In choice (Option 1) does not begin to collect data until 2017. Option 1 needs to be equivalent to Option 2.
- The regional data monitors 20 sites annually and 100 sites every 5 years. The status and trends monitoring is not focused on stormwater, for which our municipal system is responsible. There are no metals, PAH, or TPH or other constituents that are typically needed to characterize stormwater impacts on streams. The *2012 Status and Trends Stormwater Monitoring and Assessment Strategy for Small Streams, An Addendum to the Quality Assurance Monitoring Plan (October 2011)* lists additional the key parameters that should be collected as “additional” if funding becomes available. This leads to the conclusion that the program’s cost will need to be significantly increased.
- Even before the regional program has begun the budget remains the same but the work plan has already begun to scale back (November 4, 2011 Fact Sheet) due to costs and setup timing. Thus, the only recourse is for Ecology to request additional funding in the future.
- Locally-controlled programs can be much more efficient at conduction monitoring because it avoids the huge overhead of a state program with associated consultant costs. The City of Issaquah collects 1,368 data points annually (9 stations) for the cost of \$11,000 plus minimal staff time. This data is directly applicable to the programs that are provided within the City related to education and community involvement. The opt out choice (Option 2) would only provide the City 480 data points (4 stations) of constituent data that still remain of little value for the issues we know should be the focus.
- The regional program will not begin collecting actual data until near the end of the Permit term, with the results of that data not clearly assessed and relayed until after the permit cycle ends. Where does this leave the jurisdictions in the future permit cycle, with no data realized, and likely another expense that will continue to grow?
- Under **S3 Responsibilities of Permittees**, each permittee is responsible for compliance with the terms of this permit for the regulated small MS4s that they own or operate. Where does it say a permittee is responsible for surface waters not within their jurisdiction, and not connected to the MS4s for which they are responsible?

## Effectiveness Studies:

- Many of the recommended effectiveness study topics included in Appendix 10 are overly simplistic. For example, the number one priority is monitoring of BMPs at construction sites to demonstrate that BMPs are effective at reducing turbidity. Any construction inspector already knows this to be the case. The issue is not a lack of understanding of the effectiveness of BMPs, but a lack of staff resources available to do adequate plan review, inspections, and enforcement. Additional staff resources are needed (and are not forthcoming in the current economic climate), not more data.
- The Opt Out choice (Option 2) for the Effectiveness Studies is also not equivalent to the Pay In choice (Option 1), costing approximately 2½ times more by City estimates. Option 1 and Option 2 need to be equivalent.
- The Pay In Option 1 will include up to 15 effectiveness studies throughout the Puget Sound which may or may not be relevant to Issaquah depending on scale, demographics, and geographic criteria. The Opt Out choice (Option 2) prescriptively dictates what will be required to fulfill this choice. Rather than having the choice of conducting an effectiveness study that is relevant to the jurisdiction, the prescription is based on a Stormwater Discharge Monitoring program (Appendix 9), which is outfall monitoring at two locations. This discrepancy in requirements is unacceptable. It is recommended that the jurisdiction choosing to Opt Out conduct its own effectiveness study of their choice and relevance.

## 13. Minimum Requirement #5- Mandatory LID

A new significant and costly requirement is for LID to be required on all sites. While LID (i.e., dispersion, pervious pavement, rain gardens, and green roofs) holds promise in helping manage stormwater runoff, the proposal is overly prescriptive and does not allow for engineering judgment to be considered for the many variables that determine whether LID is appropriate for a site.

In particular, Ecology is proposing a LID Performance Standard that would increase the amount of water to be managed onsite by 300% relative to current standards. The use of LID by all development and redevelopment projects to mimic forested pre-developed flow durations for all site discharges between 8% and 50% of the 2-year discharge is a far too aggressive approach that expands regulatory authority to unproven and ineffective technologies. Ecology's expectation is that urban landscapes can be engineered to mimic the hydrology of an old growth forest. This ignores the huge costs that would be involved and the large amount of future maintenance that would be required to sustain this delicate system.

In general, Ecology's approach is too prescriptive, too inflexible, and too complicated to apply to every single permit. The benefits of LID are theoretical at this time, with no economic or benefit/cost analysis to support the regulations, but Ecology nevertheless wants to scale up the use of LID from a few pilot projects to the entire development landscape in Western Washington. Mandating LID without consideration of feasibility or effectiveness also has no technical basis for its use. Should the proposal be enacted, substantial increased staff time will be required for technical assistance to engineers and developers to explain the confusing LID requirements, plan review, recordkeeping, construction inspections, and maintenance.

Inspection and maintenance costs by public agencies will also increase dramatically if they will be required by Ecology to include all the new LID facilities accepted into the public infrastructure. Inspections of both public and private LID facilities would have to be done much more frequently than conventional facilities, and maintenance of public facilities would also have to be done much more frequently. Maintenance and inspection standards are also incomplete, if available at all.

Many LID requirements are already included in codes and manuals for use as appropriate when conditions are conducive to LID (e.g., soils amendments, downspout BMPs at small developments, and dispersion). Encouraging these through incentives makes sense, as does requiring LID in certain situations where there is consensus that it does work, such as where soil conditions are favorable (as was done in Issaquah), or as alternatives to conventional flow control and water quality treatment BMPs

The inclusion of mandated Low Impact Development (LID) techniques for all projects down to 7000 sq ft of disturbed land or 2000 sq ft of new or replaced hard surfaces cannot be justified from a feasibility basis. In particular, the proposed project thresholds are too difficult for typical small project construction. Although the use of LID has occurred regionally, it has done so only on a limited basis or for larger projects where control of site design is much more flexible. LID still has many unresolved issues regarding effectiveness in unfavorable soil conditions, land use conflicts in urban applications (especially redevelopment), and long-term maintenance and effectiveness.

LID as a tool to manage stormwater runoff is still very much in the experimental stage. Design, maintenance, inspection and performance standards are still being developed. Plus, LID primarily promotes techniques for low density development, not for high density urban landscapes. LID standards are increasing in complexity. Of particular concern are the increased requirements for site characterization, especially related to groundwater, including requirements to complete a groundwater mounding analysis and to install monitoring wells to locate the ground water table and establish its gradient, direction of flow, and seasonal variations, considering both confined and unconfined aquifers. Monitoring through at least one wet season is required unless historical data is available. This increase in complexity in site characterization will significantly increase the costs of development and is of particular concern to Issaquah due to the prevalence of shallow groundwater in much of the City.

#### **Recommendations:**

- Either delete the mandatory LID requirements, or allow significantly more local flexibility and engineering judgment in applying LID to factor in local conditions that may or may not be favorable to LID.
- Eliminate the proposed LID performance standard. This standard will result in a huge increase (300%) in the amount of stormwater management needed at a site. LID was supposed to be simple BMPs, not engineered systems that require detailed analysis using sophisticated models that only trained engineers can use.
- Ecology should continue the evaluation of LID techniques to gain experience on effectiveness and maintenance. A track record is needed before many LID techniques will be considered acceptable in the variety of land uses that local jurisdictions deal with.

### Additional Comments on Mandatory LID:

Fundamentally, LID should only be required where the site geology, hydrology, and soil conditions, as well as other site constraints, are evaluated and are shown to support LID techniques for addressing stormwater runoff and it is shown that infiltration of stormwater provides a benefit. While Section 8 contains a long list of feasibility exemptions, the decision on whether LID is technically appropriate for a site should be left to the engineer, not to the Permit. Attempting to list all possible exceptions to LID would be impossible since LID is dependent on a variety of site conditions that differ at every development site. (See below for additions to the list of feasibility exemptions in Section 8).

The proposed LID performance standard extends the lower limit of the range of flows whose duration currently must be matched under Minimum Requirement #7 to a rate that is exceeded approximately 10% of the time and less frequently (compared to 1% currently). This standard requires projects to retain on-site the runoff from smaller storms. However, this percentage is measured in terms of total time of the year. What is missing is the fact that it rains only 15% of the hours in a year. Thus, Ecology isn't controlling runoff 10% of the time, but rather 67% of the time it rains. Increasing the amount of stormwater control to accommodate the 10% exceedance level of rainfall runoff will increase the amount of runoff volume that must be managed by 300%.

### **Design Criteria for Permeable Pavements and Water Quality Treatment**

Minimum Requirement #5 requires that permeable pavement follow the design guidance of Appendix III-C of the Manual. Many conflicts between the design guidance, where permeable pavements tend to have very high infiltration rates but infiltration rates must be limited to quality for water quality treatment.

Design guidance must be provided on how permeable pavements shall meet water quality treatment standards. Address the apparent conflict between the slower infiltration rates necessary for treatment soils with the higher infiltration rates associated with permeable pavements, and the need to avoid having saturated conditions in the permeable pavement base course. If the Manual is going to require that permeable pavement be used for access roads and parking lots as proposed, it is imperative that water quality treatment be provided to avoid moving the pollutants associated with vehicles from surface water to ground water.

### **Section 8 - Feasibility Criteria for Selected Low Impact Development Best Management Practices**

The list of exemptions is not comprehensive, and should not be limited to these cases. At a minimum, the following should be added to what is considered infeasible:

Bioretention BMPs/Rain Gardens:

- Where seasonal high groundwater, bed rock or till soils, or other impervious layer is within three feet of the base of the bioretention facility, regardless of project size.
- Other conditions determined by the engineer that would preclude safe and effective infiltration of stormwater.

Permeable Pavements:

- Where the amount of hard surface to be paved with pervious pavement is too small to obtain at reasonable cost from local asphalt or concrete suppliers.
- Where seasonal high groundwater creates saturated soil conditions within three feet of the base of the gravel base course.
- Other conditions determined by the engineer that would preclude safe and effective infiltration of stormwater.

Vegetated roofs. The use of vegetated roofs is far from being a common and accepted practice in this region, and should not be mandated by the Permit. The fact that in Western Washington the rainy season does not coincide with the growing season means that there is minimal, if any, hydrologic function of a vegetated roof other than being a dirt “sponge” on the roof whose function can be much more effectively performed by a vault or pond. If Ecology continues to see some benefit in vegetative roofs, it should not request in an excessively costly requirement. Here are additional exceptions that would accomplish this:

- Any roof design that is not flat
- Roof areas occupied by HVAC, electrical and other utilities, access doorways and hatches, structural or architectural members, and other necessary building features typically located on roofs.
- A building cannot technically or economically be designed to accommodate a structural load of a vegetated roof.
- Other conditions or code requirements determined by the engineer that would preclude safe and effective construction of vegetative roofs.

## 14. Definitions (Page 75)

In Permit definitions and acronyms, on page 75, the State includes the following statement in the definition for Illicit Discharge; “ Illicit discharges include, but are not limited to, spills, discharges associated with illicit connections and infiltration and exfiltration of non-stormwater which takes place in pipe bedding.”

The City is concerned that “infiltration and exfiltration of non-stormwater which takes place in pipe bedding” could be interpreted as leakage from underground pipes of any kind, including sewer and water, gas and electric, petroleum, etc. Inflow and infiltration (I&I) is very common in sewer lines, as is leakage of chlorinated water from waterlines; these would be automatically classified as Permit violations if this definition is not clarified to mean only stormwater lines. Also, “infiltration and exfiltration of non-stormwater which takes place in pipe bedding” could also mean groundwater (which isn’t stormwater) that often seeps into a storm line. How could groundwater be considered an illicit discharge?

### **Recommendation:**

- Do not revise the definition. Adding infiltration and exfiltration of water as an illicit connection creates confusion over what it applies to and may cause many unintended consequences and liabilities. The current definition of an illicit connection is already very clear.