

An Update on Low Impact Development (LID) Stormwater Requirements in Western Washington

By: Amie L. Broadsword, PE, LEED AP, CESCL

Stormwater Regulatory Background

Jurisdictions with urban areas that collect stormwater runoff in municipal separate storm sewers (MS4s) and discharge to surface waters are required to have a permit for discharge under the federal Clean Water Act. In the state of Washington, the Department of Ecology (Ecology) develops and administers these municipal stormwater permits as part of the National Pollutant Discharge Elimination System program. The US Environmental Protection Agency established two phases for implementation of these stormwater regulations, referred to as Phase I and Phase II Municipal Stormwater Permits.

Phase I permittees include jurisdictions with populations of more than 100,000 people. In Washington State, this includes Clark County, King County, Pierce County, Snohomish County, City of Seattle, City of Tacoma, and the Washington Department of Transportation for its stormwater discharges within the listed Phase I cities and counties. The current Phase I permits were issued on January 17, 2007, and were modified in June 2009 and September 2010.

Approximately 80 cities and portions of 5 counties are included as Phase II municipal permittees. Phase II permits apply to all regulated small MS4s in urbanized areas that serve more than 1,000 people but less than 100,000, as well as MS4s in nonurbanized areas that serve more than 10,000 people. The current Western Washington Phase II Permits were issued on January 17, 2007, and were modified in June 2009.

LID Modifications to the Existing Permits

In 2007, shortly after issuance of the Phase I and Phase II Municipal Stormwater Permits, those permits were appealed before the Pollution Control Hearings Board by local environmental advocacy groups People for Puget Sound and Puget Soundkeeper Alliance for failing to be consistent with the federal Clean Water Act. These appeals resulted in both permits being remanded to Ecology for modifications that would require implementation of Low Impact Development where feasible.

The Department of Ecology has undergone an extensive public process to complete this task. The final public comment period on the draft permits and revisions to the stormwater manual ended on February 3, 2012; the final permits and stormwater manual are expected to be issued in June 2012.

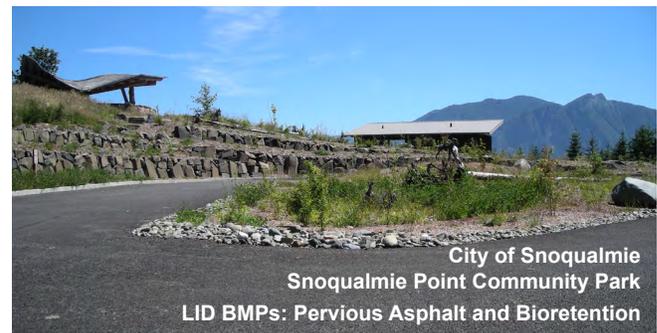
When Will the Updates Take Effect?

Ecology has been directed by the State Legislature (through Engrossed Substitute House Bill 1478) to reissue the current Phase I and Phase II Municipal Stormwater Permits without the new LID rules for the 1-year permit term starting August 1, 2012, and ending July 31, 2013. This 1-year delay was

implemented to provide fiscal relief to municipalities during periods of economic downturn by delaying or modifying certain regulatory and statutory requirements.

The LID changes are to be implemented as part of the 5-year permits that will take effect on August 1, 2013. As of the most current draft of the municipal permits, the 5-year permits will have a phased adoption for LID implementation, with Phase I jurisdictions required to adopt the new LID requirements by December 31, 2014, and Phase II jurisdictions required to adopt the new LID requirements by December 31, 2015.

Additionally, there are current challenges to the proposed timeline as well as content of the LID rules being considered in the State House and Senate.



How Are the LID Updates Applied to Projects?

A revision to the Ecology Stormwater Management Manual for Western Washington (Manual) is scheduled to be released in summer 2012. It is through adoption of this revised manual (or approved equivalent manual) that Phase I/II jurisdictions will meet their municipal permit requirement to implement LID where feasible.

The Manual provides guidance on how to apply the LID requirements across a range of projects types, sizes and locations. For example, smaller projects that trigger only Minimum Requirements #1 through #5 of the Manual (typically new and redevelopment projects with 2,000 to 4,999 square feet of new and replaced hard surfacing and less than 7,000 square feet of land disturbance) may choose from Mandatory List #1 for guidance on the required Best Management Practices (BMPs) or utilize the LID Performance Standard.

For larger projects that trigger Minimum Requirements #6 through #9 in addition to #1 through #5 of the Manual (typically new and redevelopment projects with 5,000 square feet or greater of new and replaced hard surface, or conversion of more than ¼ acre of vegetation to lawn, or conversion of 2½ acres or more of vegetation to pasture), LID requirements are governed by location relative to the Urban Growth Area

(UGA) and size of parcel. If the project is within the UGA or outside the UGA on a parcel of less than 5 acres, LID BMPs from Mandatory List #2 or the LID Performance Standard may be chosen. However, all projects triggering Minimum Requirements #1 through #9 on parcels larger than 5 acres outside the UGA must use the LID Performance Standard and do not have an option to utilize the prescriptive list.

Mandatory Lists and the LID Performance Standard

All projects, regardless of whether they are utilizing a mandatory list or the LID Performance Standard, must implement the Soil Quality and Depth BMP T5.13 for lawn and landscaped areas disturbed as a result of the project. This BMP requires a post-construction soil depth of 8 inches with 10% soil organic matter content in planting beds and 5% organic content in turf areas. Landscape and lawn areas that receive this treatment are better able to absorb stormwater and also remain healthier over time, requiring less irrigation, pesticides, and fertilizer.

The components of the mandatory lists are very similar, except that Mandatory List #1 is modified for smaller nonengineered projects. Both lists require the project applicant to use the first BMP that is considered feasible, in the order listed. Different BMPs are available for different types of surfaces. The following shows the required BMPs for roof areas and other hard surfaces under Mandatory List #1 and #2:

Mandatory List #1 – Roof area BMPs include:

1. Full dispersion across vegetation
2. Downspout infiltration
3. Rain garden
4. Downspout dispersion

BMPs for other hard surfaces such as driveways, patios, and decks include:

1. Full dispersion across vegetation
2. Permeable pavement
3. Rain garden
4. Sheet flow dispersion

Mandatory List #2 – Roof area BMPs include:

1. Full dispersion across vegetation
2. Downspout infiltration
3. Bioretention BMPs
4. Downspout dispersion
5. Vegetated roof or infiltration of roof runoff below adjacent pavement (this applies only to commercial buildings, and a cost estimate for the vegetated roof may be used to claim infeasibility)

BMPs for other (non-roof) hard surfaces include:

1. Full dispersion across vegetation
2. Permeable pavement
3. Bioretention BMPs
4. Sheet flow dispersion or concentrated flow dispersion

LID Performance Standard

This standard requires matching of the developed discharge durations to a range of predeveloped discharge rates from 8% of the 2-year peak flow to 50% of the 2-year peak flow.



Impacts of the LID Updates on Permittees and Design/Construction Teams

The design, construction, and maintenance of LID facilities such as permeable pavement and bioretention systems will take some additional training and skill development to implement effectively. Jurisdictions that review, inspect, and maintain these systems will need to provide additional training to staff in order to get everyone up to speed on the best practices associated with implementation. The municipal Phase I/II permits will include additional monitoring requirements for LID facilities that contribute to the achievement of flow control and water quality treatment performance standards. Municipalities will need to prepare for this added monitoring responsibility.

On the land development side, owners, design professionals, and construction teams will also need to stay current with the latest best practices. LID techniques tend to be highly integrative across disciplines due to their reliance on natural processes and existing soils and landscapes to attenuate and treat runoff. Successful projects will be required to implement a higher level of coordination between project owners, architects, engineers, geotechnical professionals, landscape architects, and contractors in order to maximize effectiveness while reducing cost impacts.

How PACE Can Help

PACE can support our clients' navigation through the complexities of the changing stormwater permit requirements. We have taken a proactive approach in using the proposed LID technologies where appropriate and have extensive knowledge of best practices in stormwater management under both existing and developing future rules. For more information on how PACE can help with any of your stormwater permitting, planning, and design needs, please contact us at 425.827.2014 or 206.632.2664.

