

Thurston County Stormwater Solutions

Frequently Asked Questions about LID

Low-Impact Development (LID) is now the preferred approach to managing stormwater in Washington, presenting new opportunities and challenges. Below is a list of questions and answers regarding the regulations, draft changes to the Thurston County Codes, and impacts on residents, developers and other local stakeholders.

Q: *How is stormwater runoff generated and regulated?*

A: Stormwater runoff occurs when rainfall is unable to infiltrate fully into the soil and instead flows over the ground to a point of discharge. Runoff increases when impervious surfaces such as streets, sidewalks and parking lots prevent water from infiltrating into the soil. Such runoff is a major source of water pollution because it picks up oil, sediment and debris as it flows toward lakes, streams and Puget Sound.

The federal Clean Water Act requires municipalities in urbanized areas to manage stormwater under a National Pollutant Discharge Elimination System (NPDES) permit in order to collect and discharge stormwater into surface waters. The state Department of Ecology administers two municipal stormwater permits: one for Phase I permittees, including big counties such as King, Pierce and Snohomish, and cities such as Seattle and Tacoma; and one for Phase II permittees — smaller communities including Olympia, Lacey, Tumwater and urbanized parts of Thurston County. The smaller communities of Yelm, Tenino, Rainier and Bucoda are not required to be covered under an NPDES permit.

Q: *What is LID, and when will we see more of it?*

A: Early stormwater-management approaches focused on reducing local flooding risk by conveying runoff into streams and Puget Sound — ultimately degrading water quality and eroding streams. Subsequent approaches, such as building centralized ponds for subdivisions and shopping centers, reduced the peak flows from those areas and provided some treatment of polluted runoff but did little to reduce the increased volume of runoff resulting from land development.

LID is an approach that targets runoff volume using a more distributed approach — employing rain gardens, swales, pervious pavements, native plants and other tools to filter and infiltrate stormwater on site. Washington’s recently revised municipal stormwater permit requires that city and county drainage manuals include LID best management practices (BMPs) to meet a water flow performance standard. The permit also requires that local codes make LID the “preferred and commonly used” approach to site development, where feasible. Thurston County and other Phase II permittees must adopt and make effective such changes by the end of 2016, in coordination with state Growth Management Act updates. To learn more about the LID requirements and view an interactive map of LID projects amid Thurston County, visit: www.trpc.org/LID.

Q: *How are Thurston County municipalities complying with the permit?*

A: Thurston County, Lacey, Olympia, and Tumwater are reviewing and amending their development codes and technical drainage manuals to support LID approaches. Draft LID revisions to the Thurston County Code (TCC) will apply to unincorporated parts of the county. The TCC will also incorporate each city's LID provisions, which may vary, within its respective urban growth area.

Q: *What are some of the benefits and limitations of LID?*

A: According to the Puget Sound Partnership, LID can surpass conventional approaches by reducing environmental impacts and, in some cases, may even reduce development costs. Benefits include:

- Reduced impact to streams and other surface waters by controlling the volume of water that channels into them when it rains;
- Added aesthetic and financial value to developments;
- Protection of water quality that supports local jobs in shellfish and other aquatic industries;
- Increased habitat areas via planting and retaining native vegetation.
- In some cases, reduced infrastructure costs compared with traditional catch basin, pipe, and pond strategies;

LID techniques that rely on infiltration are not the right approach for every site, however. For example, the state permit and county drainage manual recognize that LID approaches may be infeasible in areas that have high groundwater, drain poorly or are adjacent to steep slopes.

Q: *How much does LID cost compared to conventional stormwater-management approaches?*

A: The cost of designing and planning a site may rise with the need to evaluate the feasibility of LID approaches, according to the Association of Washington Cities (AWC).¹ However, when factoring in construction and maintenance costs, incorporating LID may be cheaper than conventional stormwater-management approaches. The AWC cites the following examples:

- Distributing bioretention areas, disconnecting roof downspouts and retaining vegetation eliminates the need to install stormwater conveyance pipes and large storage ponds that take up land and require significant construction and maintenance investments.
- Having businesses share parking lots, as well as integrating interior swales and shrinking automobile stall sizes, reduces the need for pavement, curbs and gutters.
- Designing compact residential lots and retaining vegetation reduces clearing and grading costs and can add aesthetic and financial value to projects.

Q: *Would LID be required at every development site?*

A: Soil and topography can be limiting factors for some kinds of LID practices. The state permit and Thurston County development code and drainage manual recognize that meeting the LID standard may be infeasible in areas that have high groundwater, drain poorly or are adjacent to steep slopes.

¹ Barrier Busters (June 2013). Association of Washington Cities E-Newsletter #2.

Q: *What are the maintenance considerations with LID?*

A: LID approaches can have lower life-cycle costs and generally perform better than conventional stormwater-management approaches, according to the Association of Washington Cities. That said, LID facilities with amended soils will need debris removal to ensure they're able to continue to support stormwater infiltration as designed. LID facilities with small trees, bushes and other vegetation will also need weeding, pruning and other maintenance. Property owners and occupants should be aware of how and when to maintain such LID facilities. In cases where LID facilities are located in a public right-of-way, cities may need to enter maintenance agreements with property owners or homeowners' associations. For tips on maintaining LID facilities and reducing stormwater runoff, visit Thurston County's website: <http://www.co.thurston.wa.us/stormwater/utility/utility-help.html>.

Q: *Would streets and parking lots be smaller?*

A: Proposed Thurston County Code changes would not reduce the width of streets, which could potentially inhibit the maneuverability of fire trucks and other emergency vehicles. The proposed code changes do, however, affect parking lots and stalls. Below are some of the key changes proposed:

- Specify maximum (in addition to existing minimum) parking requirements for new buildings
- Reduce standard parking stall length (not width); allow some stalls to be oversized
- Allow pervious surfaces on infrequently used parking spots

Q: *I live in an existing home, so would I be required to do LID on my property?*

A: The proposed LID code changes apply to new construction only. Residents who wish to build an LID project on their property may still do so, however. A good resource is the *Rain Garden Handbook for Western Washington*, which can be downloaded from the state Department of Ecology's website (www.ecy.wa.gov/programs/wq/stormwater/). The Puyallup-based Washington Stormwater Center (www.wastormwatercenter.org/) is another good resource for learning about installing and maintaining LID projects on existing or new commercial and residential development sites.

Q: *What incentives are there for property owners to build LID facilities?*

A: Thurston County sponsors a competitive rain garden incentive program annually for rural property owners. Approved property owners will qualify for a reimbursement up to \$400 for plants and/or compost used in the construction of a County-approved rain garden. Rain garden applications are scored on various criteria such as: appropriate rain garden location, site feasibility, and long-term maintenance. For more information visit:

www.co.thurston.wa.us/stormwater/utility/utility-rain-garden-incentive-program.html.



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