



FEMA

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FAQ: When does a community have to apply Low Impact Development techniques?

Q: What is Low Impact Development (LID)?

A: LID is a storm water management strategy that emphasizes conservation and the use of existing natural site features by integrating them with distributed, small-scale storm water controls to mimic natural hydrologic patterns. LID is more than on-site infiltration of storm water (e.g., through rain gardens and pervious surfaces). LID also captures and stores water for later reuse, filters out pollutants, and reduces water velocities during storm events. Thus, even where infiltration is not feasible, other LID techniques are still able to be used.

Q: When does a community have to apply LID techniques?

A: The Reasonable and Prudent Alternative (RPA) requires communities to incorporate Low Impact Development (LID) techniques as an element of their storm water management in the Special Flood Hazard Area (SFHA). LID methods are required to treat and infiltrate runoff as described in the Low Impact Development Technical Guidance Manual for Puget Sound (PSAT 2002). These methods generally include various practices for infiltrating stormwater to provide water quality treatment, match historical runoff durations, and preserve base flows.

However, the document referenced in the RPA – the Puget Sound Action Team 2005 LID Technical Guidance Manual for Puget Sound (PSAT 2005) - acknowledges that there are limitations to using infiltration techniques when there are high ground water levels. See PSAT 2005 Technical Guidance Manual, at pages 12, 119, and 153. The PSAT 2005 describes other techniques that do not rely on infiltration in order to effectively mimic the pre-development flow conditions. These other techniques include soil amendments for landscaped areas, vegetated roofs, minimal excavation building techniques, and roof rainwater collection techniques. See Chapters 6 and 7 of the same guidance.

Q: What LID techniques work best?

A: LID techniques that primarily focus on infiltration may not be feasible in portions of some floodplains due to factors such as high groundwater soil quality, slope, drainage, and vegetative cover type. In recognition of this fact, FEMA is providing the following additional guidance on the use of LID techniques.

In some floodplains, LID techniques that are focused on water quality (rainwater collection and reuse, vegetation retention, and bioswales) are more likely to be successful in meeting habitat goals than techniques that attempt to increase infiltration rates.

LID works best when used throughout a community or watershed, not just in the floodplain. The 2012 Stormwater Management Manual for Western Washington (SWMMWW) issued by the Washington State Department of Ecology is required to be used by communities in Western Washington that have obtained a NPDES permit. The SWMMWW requires the use of LID techniques throughout communities for all new development with some limited exceptions. Where infiltration is not feasible, techniques that contribute to water quality should still be required. FEMA will consider communities that have adopted the 2012 SWMMWW compliant with the LID performance standards contained in the Biological Opinion. For more information regarding the use of Low Impact Development please visit these sites:

<http://water.epa.gov/polwaste/green/index.cfm>

<http://water.epa.gov/polwaste/green/bbfs.cfm>

<http://www.lowimpactdevelopment.org/publications.htm>

http://www.psp.wa.gov/downloads/LID/LID_manual2005.pdf

<http://www.ecy.wa.gov/programs/wq/stormwater/manual.html>