

## What is LID?

Low Impact Development (LID) is a site design and stormwater management strategy that maintains, mimics, or replicates pre-development hydrology through the use of numerous site design principles and small-scale structural stormwater practices distributed throughout a site to manage runoff volume and water quality at the source. LID includes the use of both non-structural site planning and design techniques, which are addressed in this chapter, and the use of distributed, small-scale structural stormwater BMPs, which are addressed in [Chapter 13 - Structural Stormwater BMP Design Guidance](#) and other sections of this Manual.

The fundamental objective of LID is to *avoid, reduce, and manage* the adverse impacts of development or redevelopment sites while still enabling the intended use of the site and enhancing the development relative to conventional development. The over-arching goals of LID and associated principles for achieving these goals are as follows:<sup>51</sup>

### 1. Avoid Impacts

- a. Protect as much undisturbed open space as possible to maintain pre-development hydrology and allow precipitation to naturally infiltrate into the ground.
- b. Maximize the protection of natural drainage areas, streams, surface waters, wetlands, and jurisdictional wetland buffers.
- c. Minimize land disturbance, including clearing and grading, and avoid areas susceptible to erosion and sediment loss.
- d. Minimize soil compaction and restore soils that were compacted due to construction activities or prior development
- e. Preserve the natural water cycle.

### 2. Reduce Impacts

- a. Provide low-maintenance, native vegetation that encourages water retention and minimizes the use of lawns, fertilizers, and pesticides.
- b. Minimize new impervious surfaces.
- c. Match as closely as possible the pre-development or natural site runoff characteristics in terms of volume and timing of runoff (mimic the natural water cycle).

### 3. Manage Impacts at the Source

- a. Break up or disconnect the flow of runoff from impervious surfaces by directing it to adjacent pervious, vegetated surfaces (disconnect).
- b. Infiltrate precipitation as close as possible to the point it reaches the ground using multiple, small-scale structural stormwater BMPs distributed throughout a site (decentralize and distribute).

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<sup>51</sup> Rhode Island Department of Environmental Management (RIDEM) and Coastal Resources Management Council (CRMC). 2011. Rhode Island Low Impact Development Site Planning and Design Guidance Manual.

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- c. Utilize less complex, non-structural methods for stormwater management that are lower cost and lower maintenance than conventional structural controls.
- d. Provide source controls to prevent or minimize the use or exposure of pollutants into stormwater runoff at the site in order to prevent or minimize the release of those pollutants into stormwater runoff.