Low Impact Development for Your Community:

Better site design to conserve land, protect water quality, and reduce development costs

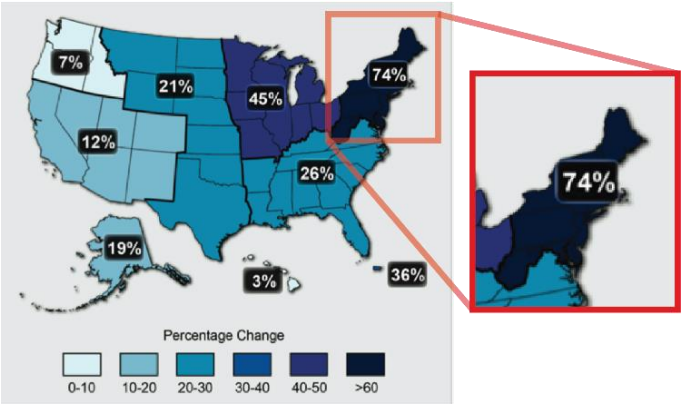
What Is Low Impact Development?

Low Impact Development, or LID, is a comprehensive approach to managing stormwater runoff. Through its use of innovative site planning, design strategies, and nature-based treatment practices, LID protects water quality and habitat from development impacts more effectively than traditional stormwater management techniques.

Why Do We Need It?

When rain lands on pavement it picks up all the oily spills, pet waste, and lawn chemicals and carries them directly to local waters without treatment. The upper Bay is cleaner than ever due to improved sewage treatment, but overall water pollution across the state continues to increase due to stormwater runoff. This is affecting our drinking water supplies, beaches, and fishing areas—once considered pristine. The need for better development practices is urgent.

Additionally, climate change is causing larger rainstorms nationwide, with New England projected to experience the highest increase by far. All that rain needs a better way of being managed than conventional development has allowed.



LEFT: Climate change is causing the percentage of precipitation to increase, especially in New England (Office of the New Jersey State Climatologist).

How Does Low Impact Development Work?

LID seeks to **avoid**, **reduce**, and **manage** impacts from development on local water resources and natural landscapes.

Avoid

Avoid impacts by preserving and protecting as much of the natural site condition as possible. Compact development paired with protected open space is one of the most effective strategies.

LEFT: Preserving even single mature trees reduces runoff, adds character, and provides cooling shade (CWP).

RIGHT: The conservation development outlined in white with nine 1/2 acre lots retains trees on lots and preserves 13 acres of forested open space. The conventional development in yellow with nine one-acre lots has a much longer road and lots clear cut for lawns, resulting in much higher runoff and no open space (RIDEM Environmental Resource Map & South Kingstown Web GIS).

Reduce

Reduce impacts by minimizing the amount of impervious surfaces (such as pavement, rooftop, and compacted soil) which don't allow rainfall to soak into the ground.

This permeable paver parking lot in Charlestown, RI, reduces runoff and uses the minimum number of parking spots.

The swale in this North Kingstown plaza accepts and infiltrates runoff from the parking lot, reducing of the impervious surface of a conventional raised bed.

Manage

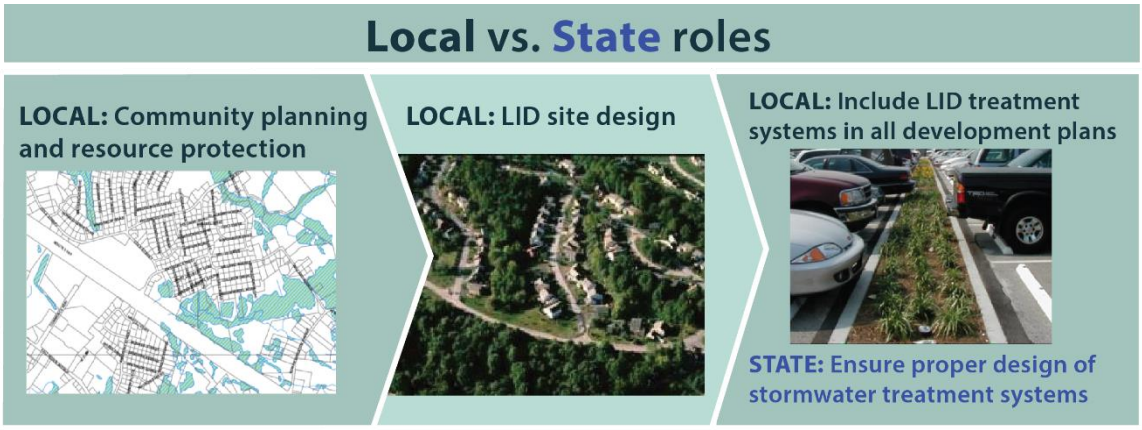
Manage impacts by treating stormwater runoff as closely as possible to the point where it reaches the ground. LID uses small, often vegetated, treatment systems rather than managing stormwater through pipes or large drainage systems which are costly to build and maintain.

LEFT: On Wickenden Street in Providence, RI, planting areas in the median accept runoff to manage stormwater in an urban environment.

RIGHT: Cottages on Greene in East Greenwich, a compact development in the downtown East Greenwich historic district integrates bioretention systems and swales into the landscaping to manage runoff.

Doesn't DEM Oversee This?

Although developers are required to apply LID stormwater practices, municipal ordinances often either prevent the use of LID designs or favor conventional practices. Because municipalities have primary authority over land development, they are responsible for implementing LID early in the site planning and design process. RIDEM does *not* have the authority to override local land development regulations; it focuses on standards for the design of engineered stormwater systems. Even updated stormwater treatment systems do not capture or eliminate all pollution.



Protecting natural areas and reducing impervious cover are essential to reduce runoff. Stormwater treatment systems are not enough. Municipalities are responsible for implementing LID.

Getting to Better LID: What Help is Available?

The 2011 *Rhode Island Low Impact Development Site Planning and Design Guidance Manual* was developed to provide examples for local planning officials of how their ordinances may be amended to avoid and reduce the impacts from development and encourage more effective use of LID practices.

RIDEM now offers the *LID Site Planning and Design Techniques: A Municipal Self-Assessment*. The assessment is designed to guide you through a systematic comparison of your local development rules against current model development principles. The questions identify specific methods to reduce runoff from new construction and redevelopment. They cover topics ranging from open space and land disturbance to impervious surfaces and soil erosion control. The goal of the self-assessment is to identify standards that need to be changed in order to meet LID goals and to help you begin the process of updating zoning ordinances and subdivision regulations.

The long-range goal of the assessment, like LID itself, is to help your municipality protect and restore the quality of local waters while becoming a greener, more attractive, and more livable community.

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