

When It Rains

When it rains, water runs off impervious surfaces—rooftops, roads, driveways, and parking lots—collecting pollutants and sediments along the way. This flows into catch basins and pipes that drain directly into local streams and ponds, reducing the quality of our local waters for swimming and boating, tourism and fishing, and drinking water.

Forests, wetlands, fields, and other open spaces act as natural filters, soaking up pollutants, reducing sediment, recharging groundwater, and keeping our waterways healthy. As more land gets developed, this natural “green infrastructure” is reduced. This is especially an issue in highly developed urban environments such as Worcester. About 75% of the phosphorus in the Blackstone River and significant amounts of nitrogen flowing into the Narragansett Bay are from stormwater runoff.







The Blackstone River watershed, which spans 545 square miles and encompasses thousands of acres of rivers, ponds, lakes, and reservoirs, begins here at the headwaters of Broad Meadow Brook. With that in mind, we redeveloped our parking lot and Education Center using “Low Impact Development” (LID) to provide areas for stormwater to be filtered before entering local waterways. Our rain gardens and other LID features, significantly improve water quality here. These types of improvements can protect our namesake Brook as well as the rest of the Blackstone River Watershed.

What is Low Impact Development?

Low Impact Development (LID) is an approach to land development and redevelopment that works with nature to manage stormwater as close to its source as possible. LID focuses on preserving the natural landscape as well as creating engineered landscapes that replace water filtration capacity lost to development. This approach treats stormwater as a resource rather than a waste product and offers both an effective and aesthetic solution for stormwater management.

Benefits of LID

-  **Cost Savings**
 - ☐ Reduced costs for infrastructure and maintenance
 - ☐ Reduced irrigation costs
-  **Public Health and Safety**
 - ☐ Reduced flooding
 - ☐ Improved water quality
 - ☐ Increased climate change resiliency
 - ☐ Reduced urban heat island effect
-  **Community Benefits**
 - ☐ Increased property values
 - ☐ Helps meet government regulations for clean and adequate water
-  **Habitat**
 - ☐ Native plants provide food and shelter for birds, butterflies and other beneficial wildlife
 - ☐ Protect and restore natural features for improved aesthetics



The Shaping program’s goal is to help communities in the fastest developing regions of the Commonwealth chart a more sustainable future. Learn more at massaudubon.org/shapingthefuture.

Broad Meadow Brook
414 Massasoit Road
Worcester, MA 01604
508-753-6087
massaudubon.org/broadmeadowbrook

This is part of a project on cost-effectiveness of LID, conducted in partnership with the Blackstone River Coalition, Central Massachusetts Regional Planning Commission, and Horsley Witten Group, Inc.

This project was funded by an agreement (CE96184201) awarded by the Environmental Protection Agency to the New England Interstate Water Pollution Control Commission on behalf of the Narragansett Bay Estuary Program. Although the information in this document has been funded wholly or in part by the United States Environmental Protection Agency under agreement CE96184201 to NEIWPCC, it has not undergone the Agency’s publications review process and therefore, may not necessarily reflect the views of the Agency and no official endorsement should be inferred. The viewpoints expressed here do not necessarily represent those of the NBEP, NEIWPCC, or U.S. EPA nor does mention of trade names, commercial products, or causes constitute endorsement or recommendation for use.

**NARRAGANSETT BAY
ESTUARY PROGRAM**



Get it in the Ground!

Managing Stormwater with Low Impact Development Practices



Broad Meadow Brook Conservation Center and Wildlife Sanctuary



LID in Action at Broad Meadow Brook

Some Examples of LID Practices You Can See at BMB and Try in Your Community



1

No-Mow Open Space Area

This area is kept more natural in order to decrease the amount of impervious surfaces in the parking lot and enhance infiltration of precipitation



2

Stormwater Capture

These grates at carefully placed areas of the parking lot allow any stormwater running off the pavement to be caught and diverted back into the rain gardens



3

Rain Gardens

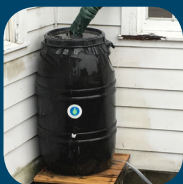
These gardens, built in shallow depressions, capture runoff and allow the plants and soil to filter the water and remove pollutants. The plants also provide habitat for birds, bees, and butterflies.



4

Permeable Pavers

These pavers have permeable material such as gravel between and below them to allow water to filter through and into the ground without running off. This also reduces ice buildup in winter, reducing the amount of salt needed on these areas.



5

Rain Barrel

Stormwater is diverted off the roof, through a downspout, and into this barrel. This collected water is stored and used for irrigation instead of using tap water, saving water especially in dry summer months.

What You Can Do

There are lots of ways you can help manage stormwater and keep local waters clean and healthy.

Simple ways to help

- ☑ Don't dump trash or oil on roads or in storm drains
- ☑ Clean up your pet's waste and dispose of it properly
- ☑ Avoid or minimize use of chemicals and fertilizers in your yard

Landscaping and home improvement

- ☑ Plant a rain garden
- ☑ Plant a tree
- ☑ Collect roof run-off in a rain barrel and use it to water your gardens
- ☑ Replace pavement with permeable surfaces

In your community

- ☑ Talk with your neighbors and friends about keeping local waters clean and healthy
- ☑ Encourage your public works department to install stormwater management features
- ☑ Advocate for local development rules that allow for Low Impact Development approaches
- ☑ Join your local planning board or conservation commission; get involved in municipal plans
- ☑ Support your local land trust and conservation organizations so they can protect more land

A Garden for a Rainy Day

