



The Northwestern Connecticut
**REGIONAL PLANNING
COLLABORATIVE**

Low Impact
Development
Standards for
**Stormwater
Management**



Photo: USEPA

A case study containing information and resources on managing stormwater and site development to protect water quality and natural resources.

March 2009

OVERVIEW

Many rural communities like ours in Connecticut's Northwest corner are concerned about protecting the water they drink and the lakes and rivers that support the natural, scenic, and recreational resources that define the region.

New techniques for stormwater management, called Low Impact Development (LID), can help, as described in this case study.

Stormwater runoff from impervious surfaces such as parking lots and roads has long been recognized as a significant threat to both surface and groundwater quality. Additionally, erosion and other impacts from development activity may threaten water quality as well as affect nearby properties.

Several new resources are available to help develop regulatory standards that avoid or mitigate these threats. This Case Study summarizes the key areas of concern, the resources available, and regulatory considerations to address potential development impacts.

A 2007 study by the US EPA (see "Resources" below) documented the potential savings from LID use in site development costs, as well as environmental and other non-monetary benefits such as protection of fisheries habitat.

For More Information
Contact Collaborative Staff
www.nwctplanning.org

- **Benefits:** Ensuring that development and redevelopment provide maximum protection to water quality; maintenance of groundwater recharge; potential cost savings.
- **Challenges:** Design and regulatory complexity; maintenance requirements.

KEY ISSUES TO CONSIDER

Impervious Surfaces

Stormwater management can begin by reducing the amount of water that must be managed. Alternative surface materials such as pervious pavers and porous asphalt, that are more permeable than asphalt or concrete, may be used to promote infiltration. Also, regulations can be amended to reduce the required size of parking lots and width of roads thereby reducing the overall impervious surface cover of a given area.

The Northwestern Connecticut Council of Governments has studied the amount of parking required for various land uses and developed practical model zoning regulations for parking lot size and parking lot design for water quality management. The model addresses surface area (number of parking spaces), location, and the physical design/landscaping of parking lots. See section below for a link to this resource.

KEY ISSUES (CONTINUED)

Management Techniques

The term “green infrastructure” is used to describe systems and practices that use or mimic natural processes to filter stormwater, return water to the atmosphere through evaporation or by plants, or reuse stormwater or runoff on the site where it is generated to reduce and manage the impacts of pollution.

There are too many different designs, systems, and techniques to detail here but the resources listed at the end of this case study provide descriptions and details. The basic categories are:

- Conservation Designs: cluster development, open space, reduced pavement width, shared access, landscaping;
- Infiltration and treatment: basins and swales, dry wells, rain gardens and bio-treatment, deep sump catch basins, oil-grit separators;
- Volume management: ponds, wetlands, swales, storage devices.

Treatment Options

Biofiltration systems such as rain gardens absorb excess runoff and can help remove impurities from the water before it reaches a stream or the groundwater. Infiltration systems allow

movement of the water through the ground, so that pollutants are removed before contact with ground water. Where collection of surface runoff is unavoidable, oil-grit separating devices may be installed between the collection system and the discharge point.

Erosion and Sediment Control

Most communities provide standards for managing erosion and sedimentation associated with construction activity. These techniques are well established and are detailed in the Connecticut DEP publication *Guidelines for Soil Erosion and Sediment Control*.

REGULATORY CONSIDERATIONS

Local Zoning

Zoning Commissions may consider regulations that require evaluation and, where feasible, implementation of low impact design techniques. Detailed standards can be incorporated into zoning regulations, or the guidelines published by the DEP may be incorporated by reference.

At least one Connecticut town (Tolland) has adopted its own comprehensive design manual for low impact development, which includes best management practices that are referenced in the zoning regulations.

RESOURCES

- [Northwestern Connecticut Regional Planning Collaborative](#)
- NW Connecticut COG [Model Regulations for Parking for NWCT](#)
- Center for Land Use Education and Research – Non-Point Education for Municipal Officials [Planning for Stormwater](#)
- Connecticut Department of Environmental Protection [Stormwater Quality Manual Guidelines for Soil and Erosion Control](#)
- US Environmental Protection Agency [Managing Wet Weather with Green Infrastructure Reducing Stormwater Costs through LID](#)
- Tolland Connecticut [Design Manual](#)
- Town of New Milford [Candlewood Lake Watershed Regulations](#)

If you are viewing a paper copy of this Case Study and wish to access any of the resources listed above, visit the Northwestern Connecticut Regional Planning Collaborative Website for the addresses or links.



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