

Storm Water Management – Protecting Water Quality

Lakes and Ponds are some of Moultonborough's most important resources, providing recreational opportunities, habitat for our wildlife and scenic beauty. Importantly these assets are also crucial to the town's economy, supporting tourism and our tax structure. One of the most significant threats to our water quality is stormwater runoff.

What is Stormwater Runoff?

Stormwater runoff is the water from a rain event or snow melt that doesn't soak into the ground. In forests, approximately 50% of precipitation soaks into the ground, 40% transpires or evaporates, and only 10% ends up in runoff. In developed urban areas, the result is almost opposite that of forests; only 15% of the precipitation soaks into the ground, with approximately 55% runoff. This runoff carries with it soil or sediment, nutrients and potential pollutants, such as, fertilizers and chemicals. Stormwater runoff is the leading cause of pollution in our water bodies. In New Hampshire it's estimated that over 90% of water quality impairments are the result of stormwater runoff.

A local example of the difference that forests make in water quality can be seen in the lake management plan being developed for Moultonborough Bay Inlet (MBI) Lake Winnepesaukee. Although the developed land only comprises 11% of the MBI watershed, it is contributing 88% of the watershed nutrient load to the lake.

What can you do to better manage Stormwater on your property?

To protect our water bodies will require all of us to become good stewards of our natural resources. Much of the improvement will come from individual home owners managing stormwater, maintaining their septic system and taking care not to use harmful chemicals that can eventually enter a water body. The town and business community also share a responsibility to take similar actions and in some cases should lead the way.

To determine what is happening on your property, take a simple first step and observe water runoff on your property during a rain event. Where is the water coming from and where is it going? Is it coming off a roof, a deck or a driveway? Is it running down a path or walkway into your waterbody? Is it being captured and absorbed in a natural vegetated area?

The key to managing stormwater runoff is to slow down the runoff and allow it to absorb or infiltrate as much as possible before it reaches a nearby water body. If you want to get technical you can calculate how much stormwater your property generates. The Winnepesaukee Gateway website www.winnepesaukeegateway.org/resources/phosphorus-calculator has a stormwater footprint calculator tool that allows users to calculate their current

stormwater runoff, and determine the impact changes to their property, such as new construction, land use change, or implementation of new stormwater treatment practices will have. In NH, capturing and treating the first 1-inch of runoff from a rain event is the equivalent of capturing 90% of the annual stormwater runoff volume allowing you to remove the majority of potential pollutants.

Soak up the Rain NH is a program that helps property owners who want to be part of the stormwater solution. By working with local Partner Groups and individual property owners, the SOAK Program provides training, coordination, and assistance to install rain gardens, rain barrels, and other stormwater practices to reduce stormwater runoff and pollution from homes and businesses throughout the state. The Lake Winnepesaukee Association is a local SOAK partner available to help individual property owners assess their property and suggest ideas for improving and managing stormwater. You can find out more about the SOAK program by visiting the website: www.soaknh.org or contacting the Lake Winnepesaukee Association at (603) 581-6632.

Basic strategies in managing stormwater runoff:

- Detention – holding back or slowing down the runoff, allowing for infiltration or in some cases evaporation.
- Diversion – diverting the flow of the water possibly into a vegetated area, reducing the potential for erosion and the transport of pollutants into a water body.
- Flow Spreading – spreading the flow of water reducing the rate and concentration of flow and allowing for infiltration
- Infiltration and absorption –allowing the water to be absorbed in the ground
- Plant Absorption - allowing water to be taken in by the roots of shrubs and trees helping to reduce water flow and the potential for erosion.

Basic Stormwater Projects to Manage Runoff

- Vegetated Buffers -plants, trees and grasses that help to slow down, infiltrate and filter runoff.
- Dripline or Driveway Trench – captures runoff from your roof or driveway allowing the water to soak into the ground
- Berm - a dirt mound that diverts the stormwater flow
- Rain Garden – a garden of natural plants that is designed to capture, absorb and treat stormwater runoff
- Swale – a trench or shallow channel that slows or captures runoff and enhances infiltration

- Water Bar – a bar that diverts runoff from a sloped walkway or path into a vegetated area helping to avoid erosion
- Pervious Pavers - Pervious pavers can be used for driveways, walkways or patios. The pavers have stone reservoirs under them that collect and infiltrate rain water into the ground.
- Rain Barrels – rain barrels collect rain from a roof and can be used to disperse the collected water into a vegetated area

Available Resources that define the steps, projects and resources to help you manage stormwater.

New Hampshire Homeowner's Guide to Stormwater Management provides do-it-yourself project plans that help to manage stormwater runoff on your property. <http://des.nh.gov/organization/divisions/water/stormwater/stormwater-mgmt-homeowners.htm>

Soak up the rain NH www.soaknh.org

Landscaping at the Water's Edge Hands on tools that define landscape designs that will support wildlife, reduce erosion and help to improve water quality, while adding value and character to your property. A step by step approach to managing stormwater on your property. Developed by NH DES and supported by the Lake Winnepesaukee Watershed Association. Making changes in the way we manage stormwater can make a big impact and help protect the waterbodies we depend on and enjoy. http://extension.unh.edu/resources/files/resource004159_rep5940.pdf