

Greenscapes Low Impact Development Techniques Help Homeowners Combat Crazy Weather

With the recent extreme weather we have been having (30 inches of snow in October, tornados in the western part of the state, record rainfalls and resultant summer flooding, 80 degree weekends in late fall, record winter snowfall, etc) it's hard to deny that Climate Change is not already upon us. Excessive rainfall and unusual rainfall intensity as a result of climate change certainly makes the need for smart stormwater management and control even more important than ever before.

Most people are familiar with the hydrologic cycle and water budget; of the rain that falls on a natural environment, 40% evaporates back up into the atmosphere, 50% infiltrates into the ground, and only 10% runs off into our streams and wetlands. Modern day land development activities, however, have changed all that, and as a result of increased impermeable surfaces, upwards of 60% -90% of the rainfall during a rainfall event may be running off the land surface as stormwater. Stormwater creates a multitude of problems, not the least of which is transporting harmful chemicals and debris from lawns, roadways, driveways, parking lots, etc. into our rivers, lakes, streams, and oceans. Stormwater from heavy storms also causes flooding of homes, road closures from flooding and washouts, sewer overflows, and scouring and erosion of our watercourses.

There are however, many practices that a homeowner can do to reduce the volume of rainfall runoff leaving their property as stormwater, thus reducing the volume of, and improving the quality of, the water that runs down their driveway and into the street. These practices are often referred to as **Low Impact Development** techniques or **LID**, and they constitute an innovative, ecosystem-based approach to stormwater management and land improvement.

Traditional landscape practices include the use of high water-using, non-native plants which have little ecological value and require significant inputs of pesticides and fertilizers to keep them alive....all this on a predominantly mowed grass lot with impervious walkways, driveways, and buildings. Generally there is little concern for where rain water runoff water flows on and off the property and how these flow patterns connect with other nearby water resources such as wetlands, streams, or ponds. Not only does this situation create excessive and toxic stormwater runoff, but it is also costly to maintain both in time and money. LID practices help reduce the destructive nature of stormwater and can also help save money spent on landscape maintenance.

One of the most effective ways of reducing stormwater on your property is to *not* alter the natural vegetation.....don't clear it out! **Leave some areas natural**. Nature does a very good job of managing water and getting it back into the ground and keeping stormwater runoff to a minimum. If you have large unused areas of your yard that you mow, simply stop, and let the grass turn to field grass and let the woody shrubs begin to fill in. Because of the constant activities occurring on lawns; playing, mowing, walking, etc. lawns tend to be fairly impervious to water infiltration and are not practical for reducing stormwater.

Or if you prefer a more landscaped look, another effective LID practice is to landscape with **native plants**. These varieties of plants are acclimated to our climate and pests (to some degree) and need nominal or no additional chemical treatments or water for them to thrive (saving you money)....and

native plants also provide excellent wildlife value in the form of food and habitat, as well as aesthetics to your property.

Collecting roof runoff in **rain barrels or cisterns** is an effectual and free way to water plantings around the foundation of your home and reduce rainfall runoff. Simple **Rain Gardens**, vegetated depressions in a natural low spot in your yard where water naturally collects, are another excellent way to purify water and keep stormwater runoff from leaving your property. Rain gardens are composed of wet and dry tolerant native plants in a base of permeable soils and collect water running off walkways, driveways, and lawn surfaces. There is a large selection of attractive native plants that can tolerate being dry most of the time but also can be submerged underwater during and immediately following a storm. **Dry swales**, long narrow, grassy channels that infiltrate and channel water toward rain gardens, are effective at absorbing and cleaning stormwater as well. Permeable paving materials such as **porous paving blocks** or even **porous asphalt** are another way to reduce stormwater. The water will infiltrate through or between the pavement or blocks into the ground below. It is important that the base material below the paving material be sufficiently absorbent to allow the water to dissipate.

Often, several of these LID practices can be combined together on your property, or even work in series such as the vegetated swale and the rain garden. The goal is to have as many LID practices in play on your property, working together, to disperse and disconnect rainwater from all impervious surfaces. LID practices can be quite simple such as reducing the area of lawn that you mow to redirecting roof downspouts on to vegetated surfaces away from walkways.....or LID actions can be more complex such as installing porous asphalt driveway and walkways or even a **roof garden**. Whatever practice you employ, every little bit helps to reduce your hydrologic footprint on the environment.

This article was created by the Greenscapes North Shore Program, a coalition of three non-profit organizations working to encourage environmentally-friendly landscaping and yard care practices. The Greenscapes North Shore Coalition is made up of Salem Sound Coastwatch, Ipswich River Watershed Association, and EightTowns and the Bay Committee. For more information and to sign up for the Greenscapes email newsletter, visit www.Greenscapes.org.