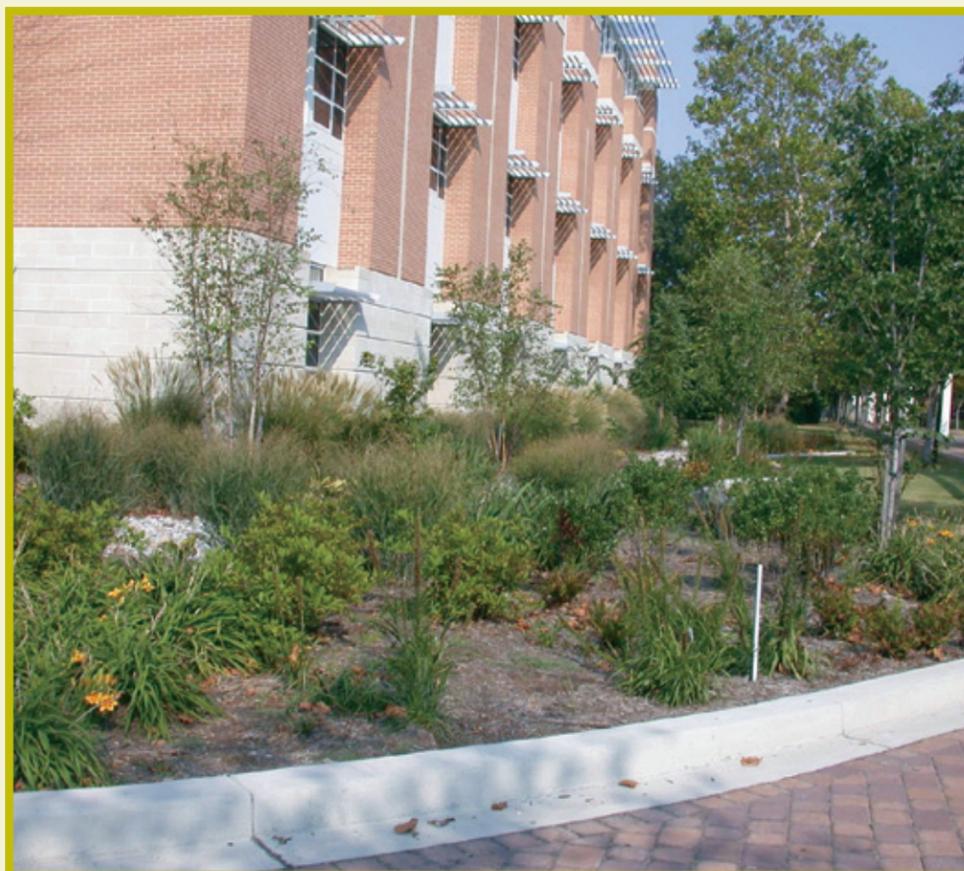


PREPARING THE BED

After Miss Utility marks the utility lines on your property, you can begin to dig. First, test how fast the water drains in the area where you wish to build your Rain Garden by digging a hole six inches wide and 18 inches deep. Fill the hole with water and observe how long it takes for the water to drain into the soil. If the water has not drained out in 48-72 hours, then you will need to amend your soil or choose another location for your Rain Garden. If the water has drained completely within 48 hours, you need only excavate six inches for water to pool and an additional three inches for a mulch layer. The addition of plants will provide sufficient drainage.

If your soil did not pass the drainage test, you must dig a deeper Rain Garden. It should be as deep as possible, not exceeding three feet. Be sure to dispose of the excavated soil properly to prevent runoff. Fill the hole with a blend of 50% sand, 25% leaf compost, and 25% clay-free topsoil. Ensure the soil you purchase has not been sterilized. Due to the popularity of Rain Gardens, some local garden centers sell this blend premixed. Be sure to leave room for a 3-inch mulch layer and a 6-inch pooling area on top. (If your drainage is really poor, you may also want to add several inches of gravel on the bottom.) The excavated pit should be flat, not bowl-shaped, so it will hold more water.



PLANT SELECTION

Native plants are ideal. They are easily grown and are a natural part of the ecosystem. Plants that are native to your particular region are well adapted to the natural rain and drought cycles. Choose moisture loving plants for the lower portions of your rain garden and plants with more moderate moisture needs as you move to its higher elevations. The publication below, offered through Virginia's Department of Conservation and Recreation, can help you with native plant choices for your rain garden. http://www.dcr.virginia.gov/natural_heritage/documents/cp_nat_plants.pdf

MORE INFORMATION

The Virginia Department of Forestry also produces excellent materials on Rain Gardens. Download a copy of their Rain Garden Technical Guide at http://www.dof.virginia.gov/mgt/resources/pub-Rain-Garden-Tech-Guide_2008-05.pdf

The Virginia Cooperative Extension is another valuable resource for rain garden information. This publication offers information on plant choices and design. <http://pubs.ext.vt.edu/426/426-043/426-043.html>



LYNNHAVEN River NOW

Rain Gardens

HELPING THE ENVIRONMENT WHILE ENHANCING THE BEAUTY OF YOUR YARD

Rainwater provides us with drinking water and maintains flowing streams and rivers. In urban environments, rain runoff from our roofs, patios, driveways and streets carries with it pollutants such as fertilizers, automobile chemicals, pesticides and animal waste. This runoff flows into our local waterways. The most pervasive pollutants in the Lynnhaven River come from our homes, neighborhoods, and commercial sites. The urbanization of Virginia Beach and the Lynnhaven watershed leaves us with less forested land and with an increase in impervious cover such as walkways, roads and roofs. This increases the amount of untreated storm water runoff that is being carried directly to the Lynnhaven and its tributary streams. Building a Rain Garden is one thing every home owner can do to intercept this contaminated runoff before it makes its way into our waterways. Rain Gardens help to landscape your home or business and also to improve environmental water quality.

Building a Rain Garden is easier than you may think. The goal is to enhance your present landscape design with an attractive bed of flowers and shrubs that also serves as a bioretention zone capturing rainwater and any pollutants hitchhiking along. This guide will help you design your bed with a location in mind that will collect rainwater

runoff, trap it for a short period, and filter its pollutants before they reach the Lynnhaven River. Compared to a conventional lawn, a Rain Garden allows about 30% more water to be soaked into the ground and filtered.

Rain Gardens help the environment while enhancing the beauty of your yard and neighborhood. They create habitats that attract birds, butterflies and other wildlife. What better way to improve your home or business?



THIS RAIN GARDEN DEMONSTRATION AREA, LOCATED AT THE VIRGINIA TECH/HAMPTON ROADS AGRICULTURAL RESEARCH AND EXTENSION CENTER IN VIRGINIA BEACH, VIRGINIA, IS OPEN TO THE PUBLIC. FOR MORE INFORMATION ON THE SITE, GO TO: WWW.LRNOW.ORG

WHAT IS A RAIN GARDEN?

A Rain Garden is a planting bed designed to temporarily store and treat rain water that runs off your roof, driveway, walkways and lawn. This runoff does not go to a treatment plant but into storm drains that empty directly into the Lynnhaven River. If you build a Rain Garden in a natural low-lying area of your yard, you will create your own private "treatment plant" and become a part of the river restoration process. A Rain Garden protects the river and the environment by:

- trapping excess nutrients from your fertilizer
- removing pollutants from, say, your driveway
- controlling erosion
- recharging the groundwater
- providing wildlife habitat
- converting an unsightly low-lying area in your yard to a beautiful flower bed.

WHERE SHOULD I PUT A GARDEN?

Wait for the rain and observe the natural drainage patterns of your property. The location of pooling rainwater may be an excellent location for a Rain Garden. Pooling indicates a natural low spot or an area of compacted soil. In either situation, a Rain Garden would improve drainage in your yard and water quality in the river. When choosing your site, think about the following:

TREE ROOTS: Keep your Rain Garden away from tree root zones, using the tree's canopy line as your boundary.

STRUCTURES: Keep your Rain Garden at least 10 feet from your home or any other structure on your property.

UNDERGROUND LINES: Before you break ground for any reason, call Miss Utility of Virginia to mark the buried lines on your property, 1-800-552-7001.

SOIL: You will want to test the soil at your proposed site for proper drainage and amend as needed. (See 'Preparing the bed' to the right for details)

ELEVATION: The proposed site you are considering for your Rain Garden should be below the areas you wish to drain or "treat." Additionally, the natural topography should direct rain toward your proposed site.

DESIGN

It's usually best to continue the look of your existing garden theme or expand an existing naturalized area within your yard. You can even extend a flower bed if you like. You can use a garden hose or some rope to outline the edges of your prospective garden and to help you calculate the amount of materials you will need.

RAIN GARDEN PLAN

RAIN GARDEN SECTION

SOME SUGGESTED PLANTS

TREES

CC	<i>Cercis canadensis</i>	Eastern Redbud
MV	<i>Magnolia virginiana</i>	Sweetbay Magnolia

SHRUBS

AP	<i>Adiantum pedatum</i>	American Maidenhair Fern
AF	<i>Athyrium filix-femina</i>	Lady Fern
CA	<i>Callicarpa americana</i>	American Beauty Berry
CP	<i>Caltha palustris</i>	Cowslip
CV	<i>Chrysogonum virginianum</i>	Golden Star
IV	<i>Itea virginicum</i>	Virginia Sweetspire
LL	<i>Lyonia lucida</i>	Shining Fetterbush
OC	<i>Osmunda cinnamomea</i>	Cinnamon Fern
OR	<i>Osmunda regalis</i>	Flowering Fern
SS	<i>Schizachyrium scoparium</i>	Blue Stem Grass
VO	<i>Viola oblique</i>	Sweet Violet

DESIGN AND RENDERING BY WPL, LANDSCAPE ARCHITECTS

HOW BIG SHOULD I MAKE MY GARDEN?

A Rain Garden's size varies with the amount of surface area you will be draining and the kind of soil you have. Those whose homes and driveways cover a large part of the yard will need larger Rain Gardens. Those with sandy soil that drains well can get by with smaller gardens than those with slow draining clay soil. But don't worry if you think your Rain Garden isn't big enough to make a difference, the addition of a Rain Garden of any size will improve your yard's ability to treat rain water runoff.

Begin by tabulating the total area of the impervious surfaces of your site. Examples of impervious surfaces include roofs, parking areas, walks, decks, patios, and driveways. Multiply total impervious surface by 0.07 (percent of Runoff) and then by 0.90 (Runoff Value). Formula: Contributing Area = Total Impervious Surface x 0.07 x 0.90.

Next, tabulate the total area of pervious surfaces on your site. Pervious surfaces include lawns, wooded areas, fields, planting beds, and gardens. Multiply total pervious surface by 0.07 (percent of Runoff) and then by 0.25 (Runoff Value). Formula: Contributing Area = Total Pervious Surface x 0.07 x 0.25.

Add these contributing areas together and this will be the area of your Rain Garden. To calculate these areas online, and receive an estimate of material quantity and cost, please visit www.lynnhavenrivernow.org to take advantage of this valuable tool.