DESIGN AND CONSTRUCTION OF A RAIN GARDEN

A rain garden can be your personal contribution to cleaner water, healthier wildlife, and an improved environment for you and your community.

What is a Rain Garden?

Rain Gardens are shallow, saucer shaped depressions that temporarily hold and treat runoff, and recharge groundwater. They are suitable for any land use—residential, commercial, or industrial. Pollutants such as fertilizer, pesticide residue, oil, and heavy metals can be trapped by the rich soil and root systems in the rain garden, permitting cleaner water to slowly soak down through the soil and rocky subsoil until it recharges groundwater supplies.

Like our roofs and driveways, turf often prevents rainwater from soaking into the ground.

BENEFITS:

Each rain garden may seem small, but collectively they produce substantial environmental benefits, such as:

- Increasing the amount of water filtering into the ground. This recharges groundwater and helps reduce the amount of pollutants washing off into lakes and streams;
- Helping to sustain adequate flows in streams during dry spells;
- Providing valuable wildlife habitat;
- Enhancing the beauty of your yard and the neighborhood;
- Protecting communities from flooding and drainage problems;
- Protecting streams and lakes from damaging flows that cause bank erosion;
- Reducing the need for costly stormwater treatment structures.

CONSTRUCTING A RAIN GARDEN

Key steps in the process include choosing a location, sizing, designing the garden, checking for utility lines, installing the garden, and maintenance. You might decide to do all or some of the steps yourself, or you might select a professional landscaper to help.

Choose a location.

The rain garden should be located about 10-15 feet from buildings. Low-lying areas that collect water or areas that stormwater usually travels across can become rain gardens. Other options include constructing a garden that collects runoff from a parking lot or redirecting flow from gutter downspouts. ***Continued on next page.***

Determine soil type, size, and depth.

Soil Type: Determine whether your soil is clay, silt, or sand based on its texture. For clay soils in particular, you will probably want to use an amended soil in your garden consisting of 50-60% sand, 20-30% topsoil, and 20-30% compost.

Size: If you use amended soil, your garden should be 20- 30% of the size of the drainage area. To determine drainage area, multiply the length by the width of your roof, driveway, or other surface draining into your rain garden.

Depth: Rain gardens can range from 3-12" in depth, depending on the size of the garden. A deeper depth can allow for a smaller area garden. The most important factor to consider is making your garden deep enough to hold rainwater while it soaks into the ground.

Create a site design.

Your rain garden can be any shape that you want.

- Rain gardens installed in Frederick County will need to be adapted to either the Piedmont or Mountain region of the Chesapeake Bay Watershed.
- Use native plant guides to select plants appropriate for your garden, based on sun exposure, soil type, soil moisture retention, and drought resistance. Native plant species that can tolerate the extremes of wet soils and dry periods are preferred for use in a rain garden.
- Many native plants are sold by local nurseries, where experienced horticultural staff can help match suitable plants with your rain garden needs. You will need to consider when selecting plants.
- If your garden is on a slope, make sure to create a berm, or raised section of ground, on the downhill side of the garden.

Check for utility lines and pipes.

Call 811 to contact Miss Utility at least one week prior to digging or visit www.missutility.net.

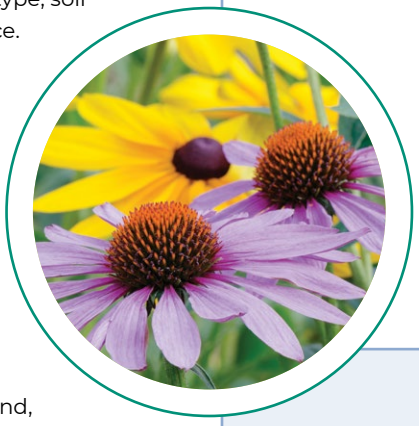
Installation.

1. Use a hose or rope to create an outline of your rain garden.
2. Excavate by hand or machine to your pre-determined depth and build a berm using excavated soil if necessary.
3. Fill the area with soil amendment, leaving a few inches for mulch.
4. Remove plants from containers, loosen their roots, and plant them in the amended soil.
5. Follow with a layer of mulch and watering.

Maintenance.

Maintenance for rain gardens is essentially the same as that for other landscaping.

- Water your garden about one inch per week during dry spells.
- Replace soil or mulch if it gets washed out by heavy rains.
- Trim plants, remove dead vegetation, and remove weeds if needed.



(Top) Incorporate brightly colored native plants into your rain garden. Native plants are preferred for use in a rain garden.

(Bottom) This garden directs downspout water to a simulated stream bed.

Resources //

Rain Garden Design:
Chesapeake Ecology Center
University of Maryland Extension

Native Plant Guides:
U.S. Fish & Wildlife Service
Maryland Native Plant Society
University of Maryland Extension Bay-Wise BayScapes Program

Tips for Green Leaders in Frederick County is a publication of the Frederick County Office of Sustainability and Environmental Resources, Office of the County Executive. For more information on this topic and about our programs, visit sustainablefrederickcounty.org, email us at sustainability@frederickcountymd.gov, or call 301.600.1416. Sustainable Frederick County is on Instagram, Twitter, and Facebook.