



RainScapes

Environmentally-Friendly Landscapes for
Healthy Watersheds

Overview

The RainScapes Program



RainScapes are watershed-friendly ways to reduce rainfall runoff. The County's

RainScapes Program provides information and guidance to County property owners who are interested in protecting the environment. When it rains in Montgomery County, some of the water soaks in the ground. Unfortunately, most of that stormwater flows across hard surfaces like driveways, roofs and patios collecting pollution along the way, and reaching our streams. Runoff from hard

surfaces can account for 60 percent of the stormwater runoff in some areas. Runoff enters the County storm drain (a.k.a. storm sewer) system, and then enters our streams causing damage to the streams and ultimately the Bay by causing erosion, and mixing in other pollutants such as trash, nutrients and pet waste.

RainScapes projects are designed to slow the runoff, and reduce the amount of runoff and pollutants entering our streams. Stormwater that soaks into the ground is filtered by the soil and replenishes groundwater and stream levels, and keeps our streams healthy and able to support a wide

range of functions. Additional environmental benefits of these projects include reduced energy and water consumption and improved air quality in our suburban landscape.

The Montgomery County Department of Environmental Protection (DEP) is offering rebates to encourage property owners (residential, commercial, and private institutional) to reduce runoff from their properties by using RainScapes techniques for natural drainage projects. RainScapes techniques are onsite stormwater management tools that reduce stormwater runoff, improve the County's water quality, and may add value to your property.

The RainScapes Rewards Rebate Program

The Montgomery County DEP RainScapes Rewards Rebate Program offers financial incentives in the form of rebates to property owners who install RainScapes techniques.

Eligible drainage projects include:

- Planting **rain gardens**
- Replacing turf grass with **conservation landscaping**
- Planting new **tree canopy**
- Replacing existing hard surfaces with **permeable pavers**

- Installing **rain barrels, cisterns, dry wells** or a **green roof** to replace an existing roof
- Removing **pavement**

A property is eligible for a rebate whether it is residential property or commercial, multi-family, or institutional property. Annual funds for the programs are limited, so rebates will be awarded on a first-come-first-served basis.

This manual provides planning and installation guidance for homeowners about the voluntary stormwater management practices

highlighted in the County's RainScapes Program.

The RainScapes Program is funded by the County's Water Quality Protection Program.

You must submit your project to DEP for approval prior to the construction of your project. After completion of an approved project, you will submit your receipts to receive your rebate check in the mail.

For more information or to submit an application, please visit www.rainscapes.org

Who is eligible?

To be eligible for a County RainScapes rebate, your residential or commercial property must be located in Montgomery County, **outside** of the municipal limits of the City of Rockville, the City of Takoma Park, or the City of Gaithersburg. Projects are **not** eligible if they are associated with permit approval requirements for new building construction, additions, or renovations.

Which RainScapes techniques can I easily implement on my property?

A variety of RainScapes techniques can help capture and soak up rainfall instead of allowing all of it to flow over rooftops, driveways, sidewalks, and roads as stormwater runoff. The techniques promote infiltration, reduce the volume of runoff leaving your property, and reduce the pollutants entering our streams. Eligible RainScapes techniques are described on the following pages.

Why are the RainScapes techniques beneficial?



RainScapes techniques are effective tools that we can use to capture stormwater before it runs off our property. Too much stormwater runoff can cause flash flooding, erosion, and other problems for our streams and the habitat that surrounds them.

The RainScapes Program promotes the use of innovative techniques to soak up or store rainwater, reduce runoff, and keep pollutants from entering our streams. RainScapes techniques are typically small-scale measures that can be implemented on residential, institutional, and commercial properties to manage stormwater onsite.

These techniques offer many environmental and community benefits, which include:

- Reduced stormwater runoff
- Improved water quality
- Improved air quality
- Reduced water usage during droughts
- Enhanced aesthetics
- Enhanced wildlife habitat
- Reduced energy costs to heat and cool your home
- Increased property values



Rain garden in mid-summer

These 8 techniques are eligible for RainScapes rebates:

Rain Gardens



Rain gardens are shallow gardens designed to capture and soak up stormwater.

Rain gardens:

- Retain stormwater and filter it on the property
- Are a good option if your property has sufficient space for the rain garden and overflow area
- Enhance the visual appeal of your landscape
- Need adequate space in your yard
- Need soils that drain well
- Budget can vary depending on the size and type of plants used, and how much of the installation labor can be done by the owner
- Have maintenance requirements that vary depending on plant selection

Conservation Landscaping



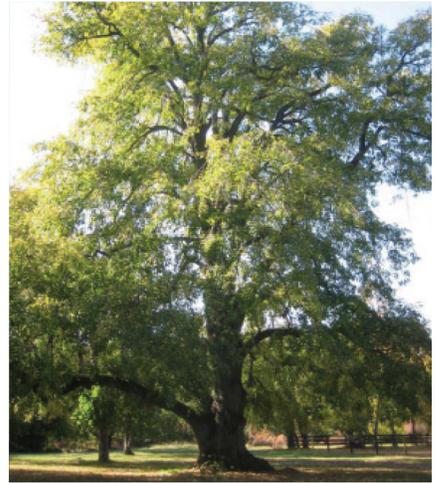
Conservation landscaping replaces part of your traditional lawn with native plants that

have adapted to Montgomery County's local rainfall and soil conditions.

Conservation landscaping:

- Improves water quality and provides wildlife habitat benefits
- Reduces the need for mowing, which results in energy and air quality benefits
- Reduces the need for fertilizing
- Reduces the need for watering
- Requires regular gardening/maintenance

Tree Canopy



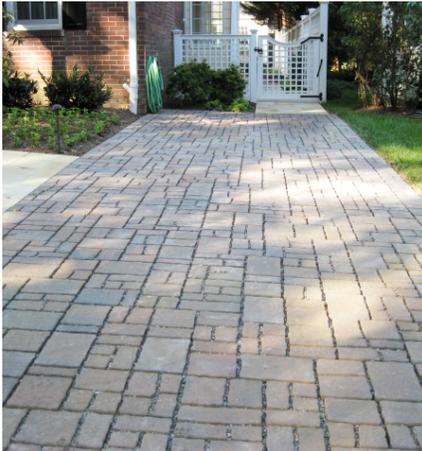
Trees absorb rainfall through their roots and collect rainwater on their leaves and branches. A

tree canopy is created when trees planted near each other create an "umbrella" or canopy of leaf cover that shades the ground.

Tree canopies:

- Reduce stormwater runoff by absorbing and collecting rainfall on leaves and branches and through the tree's roots
- Provide shade
- Enhance visual appeal and increase property values
- Save energy once the tree becomes large enough to shade the house or air conditioning unit
- Are a long-term investment
- Are relatively low cost
- Require little maintenance (e.g., mulching)

Permeable Pavers and Pavement Removal



Replacing the hard surfaces on your property with alternative materials allows rainwater to

soak into the ground below, and reduces the amount of runoff that leaves the property.

Permeable pavers:

- Reduce stormwater runoff by allowing infiltration
- Are a good option if there are large amounts of hard surfaces (concrete, asphalt)
- Are more expensive than some other techniques
- Enhance curbside appeal
- Require proper installation by a certified contractor
- Require annual maintenance with sweeping and gravel replacement

Pavement removal:



- Does the first 4 items listed above
- Decompacts the soil

Green Roofs



Roofs covered with vegetation to absorb and collect rainfall are called green roofs.

Green roofs:

- Capture rainfall and reduce stormwater runoff from the roof
- Save on energy bills
- Are expensive (the cost can be recouped if you plan to be in the building a long time, as they can provide a longer roof life and decrease energy costs, etc.)
- Need to be properly designed and installed by a certified contractor
- Have weight load restrictions (modular systems reduce this problem)
- Need a maintenance plan, which includes seasonal roof drain inspection and weeding

Rain Barrels and Cisterns



Rain barrels and cisterns collect and store rainwater from your roofs.

Rain barrels and cisterns:

- Are a good option if you want to re-use rainfall for irrigation of grass, plants, or garden
- Are a good option if roof downspouts currently discharge to a driveway or sidewalk
- Are relatively easy to install
- Can be inexpensive
- Require active participation; the rain barrel or cistern must be emptied between rain events from April to November
- Reduce the use of potable treated water for landscaping purposes

Dry Wells



A dry well is an underground rock-filled pit that collects stormwater from roof downspouts

or hard surfaces, such as driveways and filters the water through the ground.

Dry wells:

- Reduce stormwater runoff by capturing rainfall from roofs or driveways and allowing it to infiltrate through underlying soils
- Are a good option if space is limited (built underground)
- Need soils that drain well
- Need to be properly designed and installed by a certified contractor (except for driveway dry wells, which can be a do-it-yourself projects)
- Require minimal maintenance

What are the community benefits of implementing a RainScapes technique on my property?



RainScapes techniques provide community benefits in addition to the many individual property owners' benefits. At the individual level, you may feel a sense of accomplishment for your personal contribution to improving the environment. At the community level, RainScapes techniques can beautify neighborhoods, reduce local flooding and increase desirable wildlife habitat, which can increase property values. Remember that you can implement multiple RainScapes techniques on your property to increase the benefits!

By implementing these techniques community-wide, cumulative benefits can be achieved.

This program is a voluntary partnership effort that promotes individual actions to achieve a greater reduction in stormwater runoff to the County's streams.

What can I expect from this manual?

Each section describes a RainScapes technique; including benefits and incentives

- How to assess your property
- How to design, plan, and implement the technique
- Cost and maintenance needs
- Different applications of the RainScapes technique
- Additional resources
- Each property is unique and must be evaluated individually. The site evaluation for each technique is outlined for each section.



Conservation landscaping in Wheaton, MD

Planning guidance

The pre-installation planning guidance below is intended to help you determine which RainScapes techniques will be most effective for your property. The lists below identify things to consider before implementing a RainScapes technique. A variety of constraints such as setbacks, lot size, underground utilities, and drainage area should be considered to determine which RainScapes techniques are appropriate for a particular property. The completed “checklist” should be submitted as part of your RainScapes Rewards Rebate application.

Questions to Consider:

- What problem(s) are you trying to solve?
 - » Do you have areas of ponding water or soggy soil in your backyard?
 - » Does your basement flood?

- » Does your property have a significant amount of hard surfaces?
- » Does a lot of stormwater flow off your property and create a problem for a downhill neighbor?
- » Does a lot of stormwater flow onto your property from adjoining properties?
- What is your budget?
- Do you want to capture water to re-use it? If so, where?
- How much time do you have for maintenance?
- What is the landscaping look you want to achieve?
- Do you have the equipment needed to install the RainScapes technique?
- Do you want a do-it-yourself project, or would you prefer to hire a contractor?

RainScapes Technique	Ability to Reduce Stormwater Leaving Your Property	Level of Active Participation	Cost
Rain Gardens	Medium	Medium	Medium
Conservation Landscaping	Medium	Medium	Low
Tree Canopy	Medium	Low	Low
Permeable Pavement	High	Low	High
Green Roofs	High	Low	High
Rain Barrels	Low	High	Low
Cisterns	High	Med	High
Dry Wells	High	Low	High



Residential lot showing a variety of runoff management techniques

Site constraints

- Underground utilities: You must call “Miss Utility” to identify your underground utilities before installing rain gardens, trees, permeable pavers, conservation landscaping, dry wells, or anything else that requires digging
- Setbacks and right of way locations
- Size of drainage area
- Lot size relative to impervious area
- Slopes
- Tree root zones
- Shade
- Soil characteristics (permeability is important for RainScapes techniques)
- Local ordinance, deeds, or homeowners’ associations may have landscaping restrictions

Applying for a rebate through the RainScapes Program:

- Evaluate your property
- Select RainScapes technique(s) to implement
- Fill out the online rebate application
- Take “before” photographs of the proposed project area to include in the application
- Wait for approval before beginning the project (allow 3 weeks for processing)

If your application is approved:

- Contact MISS UTILITY to mark utilities near the project area if you intend to install rain gardens, conservation landscaping, permeable paver retrofit projects, dry wells, or trees.

- DEP will perform a preliminary site inspection (optional for rain barrel).

If your project is verified for eligibility after the DEP application review:

- Install your project within 6 months of the County’s preliminary inspection date.
- Call or e-mail the RainScapes Rewards Coordinator to schedule a final inspection, which typically occur within 10 business days of your call.
- DEP will conduct a final inspection.
- Submit project documentation including:
 1. Itemized receipts or contractor invoices.
 2. Sign and return the RainScapes Rewards property owner agreement.

If you are interested, you can participate in activities to encourage your neighbors and local businesses to install RainScapes techniques. For more information, visit www.rainscapes.org

To determine which watershed you live in, visit: <http://www.montgomerycountymd.gov/dectmpl.asp?url=/Content/dep/maps/welcometowatershed.asp> to search by zip code.



Newly installed conservation landscape with rain garden on the right side