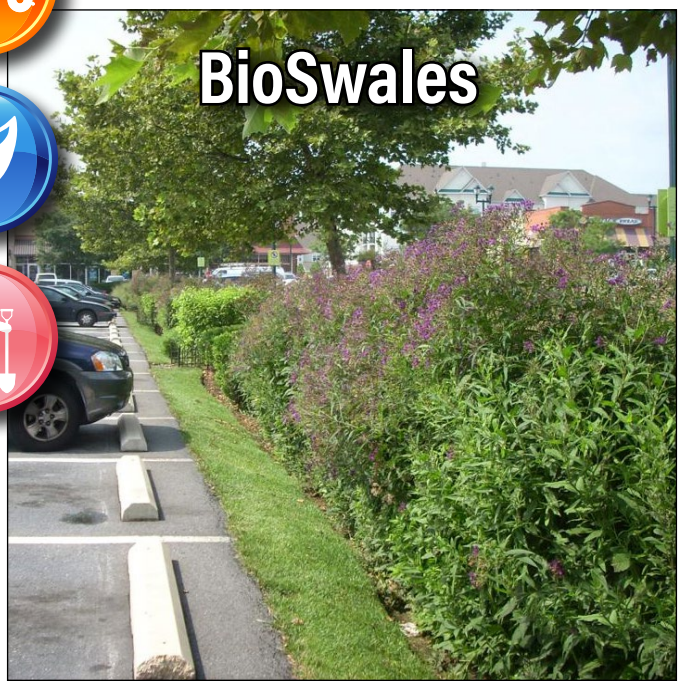
DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

Caring for Your Vegetated Stormwater Facilities

STORMWATER FACILITY MAINTENANCE PROGRAM

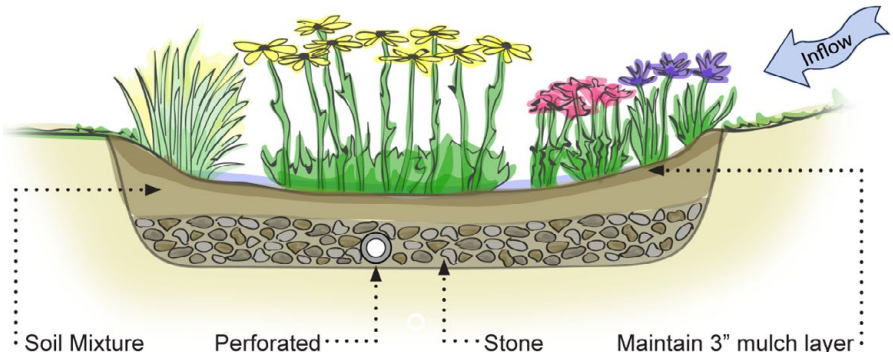
Caring for Your Vegetated Stormwater Facilities...



www.montgomerycountymd.gov/stormwater

Introduction

This document provides simple landscaping guidance for property owners in Montgomery County who maintain vegetated stormwater facilities.



Typical cross section of a vegetated stormwater facility

Included in this guide are tips for:

Debris Removal | **Weeding** | **Mulching** | **Plant Care** | **Other Landscaping Tasks**

What are vegetated facilities?

Vegetated stormwater management facilities use plants and soil to slow down, filter, and absorb stormwater runoff on your property after it rains. Vegetated facilities include bioretentions, curb extensions, tree boxes, dry swales, wet swales, bioswales, and rain gardens.

By maintaining your vegetated facility you are contributing to the protection of local streams and rivers.

How are these different from my lawn and gardens?

Vegetated stormwater facilities are part engineering, part landscaping. They are more than a garden—they are designed to treat stormwater runoff. The plantings in your facility are selected to survive both wet and dry conditions.

These facilities need care that may be different from your garden beds—make note of the specific tips in this guide to best care for your facility.

As the property owner, YOU are responsible for the maintenance

The next few pages provide information on seasonal landscaping and maintenance activities you should perform to save money, keep your facility looking good, and avoid potential violations. Vegetated facilities require routine care to ensure plants survive and water drains into and out of your facility properly. You are responsible for this care.

Have questions?

Contact the Montgomery County Department of Environmental Protection (DEP) at: askdep@montgomerycountymd.gov

Types of Vegetated Stormwater Facilities

There are many different designs for vegetated stormwater facilities. This document provides maintenance advice for all vegetated facilities, but you may only need to perform some activities. The examples below may help determine what sort of maintenance you may need to perform.

If your facility looks like this small rain garden, you might expect to do the following:

- Weeding
- Mulching
- Mowing and edging
- Dividing plants

If your facility looks like this, with some pipes or drainage outlet structures, you might expect to do the following:

- Trash, leaf, and debris removal
- Weeding
- Mulching
- Mowing and edging

If your facility looks like this, or collects drainage from a parking lot or road, you might expect to do the following:

- Sediment, debris, leaf, and trash removal
- Cleaning of inlets
- Weeding
- Mulching, and raking mulch into place

You may live near facilities in the right-of-way along the roads, or at parks or community buildings. These are maintained by the County, but you can always assist with the following:

- Trash, debris, and leaf removal
- Weeding (confirm with DEP which plants should stay)
- Raking mulch into place
- Reporting problems to DEP
- When mowing, direct grass clippings away from the facility
- Do not pile snow in the facility

Debris Removal

Clear and remove debris from storm drain inlets.

Routine maintenance

Remove trash on a regular basis, during every season. Trash and debris can clog inlets in your facility.

Sediment from pavement may wash into your facility, especially near the inlet. Remove this on a regular basis by digging out sediment piles, removing it from swales, and cleaning out cobbles or rip rap that capture sediment. Be careful not to dig up the original soil in your facility.

Some plants are designed to capture sediment or debris near the inlet. Remove accumulated sediment from the base of these plants. The plants may need to be replaced occasionally, as they are part of the design to capture sediment, which might cause plant damage or death.

Dispose of sediment in the trash and not in your garden or compost, as sediment can carry pollutants from stormwater.

Remove leaves, grass clippings, weeds, and dead plant material. Dead vegetation can clog sand and stone layers or block drainage. Decomposing organic materials may contribute to nutrient pollution in stormwater.

Remove debris at least four times per year, but check monthly in case it is needed more often. If possible, compost this debris in another location, or dispose of as yard trimmings.

When to contact an expert

Call 311 or contact DEP if there is standing water in your facility for more than 3 days. This could mean that your facility is clogged and is not functioning properly.

What not to do

- ✖ **Do not pile snow in the facility.** Piling snow on facilities can lead to the crushing of plants and clogging of the facility. Additionally, salt and sand from snow and ice treatment should be kept out of the facility.
- ✖ **Keep pet waste out of the facility.** Pet waste can contain harmful bacteria that could contaminate stormwater runoff.
- ✖ **Do not put sediment** you have removed from your facility into your compost or gardens—it could contain heavy metals, oil and grease, or other pollutants from stormwater.

Weeding

Why is weeding important?

Weeds can destroy the visual appeal of your facility, and may also limit how well it functions. Native plants have deep root systems that allow infiltration and drainage. Weeds and invasive plants cause root competition with native plants. Early weed control will make weeding easier and quicker over time.

When should weeding take place?

Weeding should take place as needed or at least once every month between April and November. Perform weed cleanup at least once every winter, preferably in late February or early March.

It's easier to pull the weeds when they are small and the soil is moist. Pull weeds before they produce seeds to prevent future work for yourself.

What not to do

- ✖ **Do not treat weeds and invasive plants with chemical treatments.** These chemicals will contaminate runoff and potentially damage your facility.
- ✖ **Do not remove just the top of the weed.** Make sure you remove the root.

How do I know what to keep and what to pull?

Weeds and invasive plants can be removed by pulling or digging out the roots. Weeds from these facilities can be disposed of in your regular trash or garden waste.

Get to know the plants that were planted in your facility. Some have green leaves in the winter, and you don't want to pull those by mistake. Some weeds only grow in the winter, and these need to be removed. Consult plant books for pictures or ask an expert to help you identify plants in your facility. Trees may seed into your facility—weed them out, or transplant them to other areas of your property.

When to contact an expert

Contact the DEP if you need assistance identifying plants in your facility. The DEP website includes a list of approved landscaping contractors, some of whom can assist with weeding jobs that are too large for you to handle.

Common weed types include, clockwise from top: mile-a-minute, dandelion, thistle, prickly lettuce, chickweed, burdock.

Mulching

If mulch has moved, rake the mulch back into place.

Why is proper mulching important?

Mulching keeps roots moist and cool, and prevents aggressive weeds from competing with plants for sunlight, water, and nutrients. Mulch promotes plant growth, while other materials, such as stone and rubber, can inhibit plant growth. Mulch also traps sediment and pollutants from stormwater, which improves the function of your facility.

When should mulching take place?

It's best to have the mulch in place in late spring before the weather gets hot and dry.

Mulch should be replenished annually, and mulch should be completely replaced every 3 to 5 years. Old mulch that remains should be scraped off and removed before adding new mulch to remove organic matter and prevent raising the height of the ground in your facility. Mulch should be inspected every year for "plating" or "crusting." It can be loosened with a hard rake or pitchfork.

How should I mulch?

Double-shredded hardwood bark mulch is recommended. Mulch should be maintained at about 3 inches deep throughout the facility. Mulch should not come in contact with the trunks or bark of trees or shrubs and should not bury small plants.

Rake and loosen mulch to distribute evenly, especially after storms, which can move and compact mulch. Pull mulch away from the base of plants each time.

Never use leaves or other compost as mulch like you might on the rest of your property. Adding these organic materials can clog the soils in your facility and prevent proper drainage.

Can I add fertilizer or compost?

As a general rule, do not apply any fertilizers or compost to the facility. The nutrients will wash out and end up in our streams and rivers.

When to contact an expert

If the mulch is constantly moving or washing out of your facility, contact DEP for assistance.

Do not pile mulch up against the base of your trees.

What not to do

- ✕ **Do not over-mulch.** Mulch should be added evenly in a layer of about 3 inches over the facility. Mulch should not be added to the point where there is no longer a depression in the facility.
- ✕ **Do not add leaves, grass, or compost to the mulch.** They can clog the facility and reduce its effectiveness.
- ✕ **Do not apply mulch near tree trunks or shrub stems.** They need to breathe.

Plant Care

Adding or replacing plants in your facility

DEP recommends you replace dead plants with the same species originally planted. If you think a replacement of the same plant would fail again, replace with plants that can survive in the existing conditions. Plants in a stormwater facility serve very specific purposes, and the facility may not function well if the wrong plants are used. If you aren't sure what plants were planted in your facility, DEP can provide you with the original design.

If you choose to add annuals or plants that cannot sustain the conditions in the facility, you may be replacing them often. Use perennials and woody plants that can survive in stormwater facilities.

Landscaping near your facility

Landscaping with additional plants in areas near your private facility is fine, and contributes to habitat and diversity. Avoid the use of fertilizers or pesticides that could wash into the facility. DEP has resources that can assist you in selecting beneficial plants for wildlife, stormwater, and beauty.

Watering your plants

Ensure survival of plants by planting in the spring or fall, and ensure proper watering in dry months. As a general rule, ensure 15 gallons per week on a 5 feet by 5 feet planted area from rainfall or your hose.

Plant selection for stormwater facilities

Plants in the basin or on the sides of stormwater facilities may experience different conditions. Consider the use of plants that can tolerate:

- frequent flooding (in the lower areas)
- roadway salt (especially near inlets)
- drought (especially on side slopes)

Landscape experts at DEP can suggest suitable plants for stormwater facilities. Additional resources for information on suitable plants can be found at http://www.rainscapes.org.

Plant Care

Dividing plants

Some plants need to be divided every few years for the best growth. Dividing plants promotes their survival and appearance. You can put divided plants into your facility to make it more lush, or add them to your gardens. Keep an eye out for plants that have grown 2-3 times their size within 2-5 years. A good rule of thumb is to divide perennials after the year they look mature and robust.

Try to divide spring-flowering plants in the fall and fall-flowering plants in the spring for the best blooms. It is best to divide when the soil is warmer than the air for at least part of one day. That's usually just before peak daffodil season in the spring and in early fall just after the nights become cooler.

Grasses should be divided while actively growing in the spring or early summer, and never while flowering. If you have evergreen grasses or sedges, only divide those in the spring.

Ideally, give your plants a good soaking the day before dividing them, to reduce the shock. Treat divided plants like new plantings and water during times of drought.

Pruning

Prune dead stems and branches to maintain the health and appearance of trees and shrubs. Grasses and flowers may need to be cut on an annual basis to a height of 4 to 12 inches, after winter ends but before new growth in the spring. Become familiar with your plants and how often, and when, is the best time to cut them back. Remove all cuttings from the facility.

When to call an expert

Contact DEP with questions about what plants were planted in your facility.

If you have a facility maintained by DEP in the right-of-way or on your property, any planting must be approved by DEP in advance.

If plants are not surviving in your facility with normal care, check with an expert to see if the plants are right for the conditions, or to identify any pests or diseases. Have your soil checked to see if nutrients or if the pH is unbalanced. Contact a garden center or University of Maryland Extension (https://extension.umd.edu/ask) to ask how to get a soil test.

What not to do

- ✖ **Don't allow your facility to go bare**, with little or no vegetation. Plants help bind toxins from stormwater runoff, shade the ground, and absorb water.
- ✖ **Don't plant species that are considered invasive or aggressive** in your facility. This will create more weeding work for you, and the plants could spread to areas off your property.
- ✖ **Don't prune incorrectly.** Cutting plants at the wrong time of year, or pruning incorrectly, can kill the plants.

Other Landscaping Tasks

Mowing

Mowing in and around your facility is not like a mowing a normal lawn, where you might leave lawn clippings as compost. Point blowers away from the facility when mowing nearby, and remove all grass clippings from the facility. These grass clippings can be composted in another location. When mowing steep edges, avoid "scalping" the edge of the grass, which leads to erosion.

Maintain a clean edge between your grass and planted areas with mulch and by edging the grass. You want to keep turf grass out of your facility, unless it was designed to have turf.

Mosquito control

The most effective measure to control insects is to ensure standing water is not lingering in your vegetated facility. Mosquitoes need about a week of standing water to breed. Check your facility after each storm to ensure that water is properly draining. If not, the planting bed may be clogged and require sediment and debris removal, the mulch layer may need raking to break up clumps, or the planting bed media may need replacement.

If your facility does not have standing water but you have mosquito problems, look for other nearby sources of standing water, like roof gutters, birdbaths, toys, or furniture. If you cannot drain nearby standing water, contact the Maryland Department of Agriculture for help.

When to contact an expert

Facility owners must use an approved contractor for pesticide applications.

If water remains in your facility for more than 4 days and you have no clogged outlets, contact DEP for help.

If steep banks by your facility are difficult to mow, or are eroding, ask DEP for suggestions on erosion control mats and plants that could be used to stabilize the slopes.

What <u>not</u> to do

- ✖ **Do not "over-mow" or clip too close** to your facility. By mowing too close to your facility, grass can be removed and bare soil can be exposed on the edges. This could lead to dirt and sediment entering the facility. You can adjust your mower blade height in order to avoid this.
- ✖ **Do not apply salt or sand** close to your facility in the winter. Too much salt can damage plants, and additional sand can clog the media. Take note of whether you driveway or sidewalk drains toward your facility, as salt or sand from these surfaces may be washing into them.
- ✖ **Do not ignore your facility.** If these facilities fail due to damage or neglect, it costs the County and the Community money and has environmental consequences. It is very important to keep your facility functioning.

Summary

Routine and seasonal schedule of maintenance

	Spring	Summer	Fall	Winter	As Needed
Mulching	X				X
Raking Mulch	X	X	X	X	X
Weeding	X	X	X	X	X
Pruning			X	X	X
New Planting	X		X		
Watering					X
Removing Debris	X	X	X	X	X

Check your facility on a monthly basis to ensure the removal of trash and debris, weeds, invasive plants, and to perform watering as needed for the plants.

What happens if I don't do the maintenance?

State and County laws require that all stormwater facilities function properly to protect our local streams and rivers. DEP performs inspections of permitted facilities; if maintenance is required, DEP will send a list of items that are needed to restore your facility to the proper working condition.

Can I remove the facility?

You cannot remove any stormwater facilities that have been permitted. DEP maintains a database of these facility locations and inspects them at a minimum of every three years. Contact DEP if you are unsure if your facility is permitted or if you would like to discuss options for modifying your facility.

What if I need help or have questions?

DEP can answer your questions and provide additional guidance about maintaining your vegetated facility.

- Call the Montgomery County Call Center at **3-1-1**
- E-mail us at askdep@montgomerycountymd.gov
- Visit the Montgomery County, Maryland, Stormwater Facility Maintenance and Inspection website at www.montgomerycountymd.gov/stormwater
- Visit the Montgomery County, Maryland, Rainscapes website at www.rainscapes.org