

How to Maintain Stormwater Management Systems at Home



When it rains, storm water washes over streets, roofs, and other hard surfaces picking up dirt, chemicals and oil along the way. Storm water management facilities or best management practices slow, filter and infiltrate storm water runoff on your property. They remove pollutants and reduce the volume of rain water that flows into Virginia's rivers and streams. Vegetated storm water facilities can improve the appearance of your property, provide wildlife habitat, shade and cool buildings and decrease landscape maintenance and water use. Property owners are legally responsible for inspecting and maintaining any storm water management facilities on their sites. Without proper maintenance the performance and purpose of the facility will be greatly diminished.

Facility Types

Maintenance is similar for most storm water management facilities. Understanding the specific maintenance needs of your stormwater management facilities and how they work will help you to better plan for maintenance needs. Stormwater management facilities include rain gardens, rain barrels, soakage trenches, and other Low Impact Development (LID) strategies.

What to Look For/What To Do

Be safe. Watch for slopes, slick surfaces, and vegetation debris, which may cause slips, trips, and falls. Avoid maintenance work in wet weather. Always wash your hands after maintaining a facility.

Trash/Debris

Storm water facilities collect a variety of trash and debris, which can clog pipes and cause odors.

What to look For: You should inspect for trash and debris once a month. Look for clogged inlets and outlets.

What to Do: Remove trash and debris.



Sediment

Sediment can include dirt, leaves, and litter, which can clog the facility. Clean out accumulated sediment annually, or when it becomes a problem. Infiltration rates and water quality will be improved by removing sediment.

What to look For: Look for sediment that is over four inches deep or that is damaging or killing vegetation. If the facility is not draining in the time designed there could be sediment buildup.

What to do: Sediment removal is easier during dry weather. Try to minimize damage to any underlying vegetation. Re-seed and mulch exposed soil. Don't dump it in the street or in a storm drain. Try to reuse the removed sediment on-site. Fill in the holes or cover bare areas and seed or sod. To reduce sources of sediment, sweep surrounding paved areas regularly.

Erosion

Inlets, flow channels, and berms are susceptible to erosion, and can add sediment to runoff and cause some facilities to fail. Erosion can increase sediment build up, clog outlets, and reduce water quality benefits.



What to look For: Look for cuts or channels in the surface of the facility. Any area where more than two inches of erosion has occurred needs maintenance. Pay special attention to the bottom of the facility, around inlet pipes, and at overflows.

What to Do: Fill eroded areas with soil, compact it lightly, then cover with mulch, compost, seed, or sod. Planting deep or heavily rooted plants will help stabilize the soil. Plant grass or grass-like plants along the bottom to slow water.

Vegetation

Vegetation is an important part of your facility. Proper maintenance of vegetation improves the appearance and performance of the facility. Maintain desired vegetation and control unwanted growth and nuisance vegetation. Inspect plantings in fall and spring.

What to Look For: Look for nuisance and invasive vegetation such as blackberry, ivy and Bermuda grass. Identify areas where soil is exposed and plants that are unhealthy or dead. Plants that are blocking flow to and from the inlets and/or outlets may cause drainage problems.

What to Do:



Nuisance, Unwanted, or Dead Vegetation

- Immediately remove nuisance and invasive vegetation, before it can go to seed and spread through the facility.
- Immediately remove dropped leaves, dead plants, and grass and other plant clippings.
- Avoid using herbicides to remove unwanted vegetation.
- Maintain vegetation so it doesn't obstruct flow inlets and outlets (i.e., curb cuts)

Sediment Buildup

- Remove sediment before it reaches a height that kills vegetation. If mulch is present, remove the top 3" and replace with clean, shredded hardwood mulch.

Mowing

- Most grass facilities can be mowed or weed whacked. Keep grass between four and nine inches tall.
- Consider replacing grass with shrubs or wetland plants that need little or no maintenance.

Structural Deficiencies

Structural components of storm water management facilities include plates, grates, pipes, berms, and other concrete, metal or plastic parts.

What to Look For: Look for cracks, scratches, dents, rust, loose fittings, broken or missing components, and insufficient lubrication for moving parts.

What To Do: Repair or replace any major damage. Many components will need to be repaired or replaced during the life of the facility as a result of age, wear, or vandalism.

These commonly include:

- Inflow and outflow pipes
- Concrete, metal, and plastic structures and components
- Earthworks, such as embankments and side slopes

Ponding Water

Ponding water usually means the facility is clogged. You should always inspect facilities after major storm events (1/2 inch in 24 hours).



What To Look For: Watch for water that has ponded for more than 48 hours.

What to Do: Clogging is usually caused by sediment or debris. Remove debris from pipes and rake the soil to restore water flow. If raking is insufficient, try removing the top few inches of soil. Adequate vegetation is important to absorb water and the roots keep soil loose so that water can infiltrate.

Pests

Standing water can be a breeding ground for mosquitoes and vegetated areas can attract all kinds of wildlife, including rats.

What to Look For: Look for mosquito larvae in standing water, especially during warmer weather. Larvae look like tiny wiggling sticks floating perpendicular to the water's surface. Look for rat holes and burrows.

What to Do: Remove pests from the facility. Remove the cause of ponding water. Backfill rodent burrows and set traps. Contact your Animal Control office for more information.

Odors

Odors coming from facility could be caused by decaying plants or trash.

What to Look For: Plants decaying under sediment or trash.

What to Do: Remove sediment, dead plants, and/or trash.

Tips for Working with Lawn Care Companies

If a lawncare company takes care of your property make sure that they understand the maintenance requirements for your stormwater maintenance facility by following these four tips:

- Communicate that the facility is a water quality protection facility.
- Provide specific instructions on mowing and fertilization practices.
- Inform them of the need to keep facility clear of grass clippings and keep sediment from accumulating.
- Require that they minimize the application of pesticides and fertilizers by following an integrated pest management plan.

Suggested Schedule for Inspection

Spring

- Clean out debris
- Clean out weeds and unwanted plants
- Check for erosion (more than two inches of soil gone)
- Check for pests and unusual odors

Summer

- Clean out trash and other debris
- When facility is dry, do major scoop out of sediment
- Make any repairs

Fall

- Clean out debris
- Clean out weeds and unwanted plants before they go to seed and remove unwanted plant debris
- Replace dead and dying plants

Winter

- Clean out debris
- Check for ponding water

Inspecting and Maintaining Your Facility

It's important to make sure your facility is functioning properly. You are legally required to inspect your facility regularly and maintain it.

It's a good idea to inspect your facility at least twice a year and after heavy rainfall. City Code requires you to keep inspection and maintenance logs. Logs should note all inspection dates, the facility components that were inspected, and any maintenance or repairs made. Check with your local Dept. of Public Works, Planning, and or Zoning office.

SAMPLE INSPECTION AND MAINTENANCE LOG

Date..... Name.....

Facility Piece	Trash, Debris, Sediment	Erosion	Vegetation	Broken Parts	Ponding water, odor, Pest	Maintenance Action(s) Taken
Inlet						
Facility Structure						
Vegetation						

Other Observations:

For More Information...

City of Portland Environmental Services, Portland, OR. *Stormwater Management Facilities Operation and Maintenance for Private Property Owners*. www.portlandonline.com/shared/cfm/image.cfm?id=54730

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Northern Virginia Regional Commission. *Maintaining Stormwater Systems: A Guidebook for Private Owners and Operators in Northern Virginia* (2007). <http://www.novaregion.org/DocumentView.aspx?DID=1675>

Protecting America's Founding River

The mission of the James River Association is to be guardian of the James River.

We provide a voice for the river and take action to promote conservation and responsible stewardship of its natural resources.



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