

Grass / Vegetated Swale

A grass or vegetated swale is a stormwater BMP that is similar to a bioswale; however, there is typically less of an emphasis on infiltration. In fact, grass or vegetated swales may not have any type of amended soils or specialized filter media underneath the vegetated surface. It is the plant material that plays the critical role for this BMP.

Grass or vegetated swales are planted with vegetation designed to absorb the stormwater, filter out pollutants, and slow flow during flooding events. These swales can be planted with turf grass or with native plants. In addition to vegetation, these swales contain an inflow and outflow structure. They may also include check dams or other structures designed to slow the flow of stormwater.



Photo: www.daa.com



Photo: www.harfordcountymd.gov



Photo: www.montgomerycountymd.gov

A common issue with swales (especially grassed swales) is poor vegetation and erosion. Chunks of the swale may erode away (similar to the picture to the right). This is common where turf has not fully established or the swale meets another stormwater management feature. These areas should be re-graded and vegetation re-established.



Grass / Vegetated Swale Maintenance

Typical Maintenance Indicators	Typical Maintenance Actions
Excessive Mowing	Some vegetated swales are planted with taller native grasses and vegetation for filtration purposes and to slow flow in the swale; however, some landowners prefer to have shorter “lawn” vegetation. Proper mowing in accordance with the individual grass / vegetated swale O&M plan should be implemented. Excessive mowing can reduce the efficacy of this stormwater BMP.
Poor vegetation establishment/bare spots	Re-seed, re-establish vegetation.
Overgrown vegetation and invasive weeds/plants	Mow or trim as appropriate and remove invasive plants. Selective herbicides can be used if in accordance with local, state, and federal laws. Refer to invasive weeds/plants section of the guide for pictures.
Signs of dumping (grease, piles of grass clippings, discolored grass, etc.)	Contact your local municipality to report a potential illicit discharge/illegal dumping.
Erosion (gullies formed on berms, swale bottom, and/or around inlet/outlet structures)	Repair/re-seed eroded areas (may need added measures such as erosion control blankets or stone at flow entry points), may include re-grading areas.
Signs of rodents/animals (gopher holes)	Fill/repair/re-seed holes and make appropriate corrective measures to prevent rodent activity. May need to contact a professional pest control management company to assist.
Accumulation of sediment, litter, or debris	Remove and properly dispose of accumulated materials such as trash and landscape debris. Dredge accumulated sediment. This may be required every 5 to 15 years and more frequently if there are excess sources of sediment. Dredging is usually a major project requiring mechanized equipment. The work will include an initial survey of depths and elevations; sediment sampling and testing; removal, transport, and disposal of accumulated sediment; and reestablishment of original design grades and sections. Permits may be required.
Standing water (BMP not draining) <i>If mosquito larvae are present and persistent, contact the PADEP. Mosquito larvicides should be applied only when absolutely necessary and then only by a licensed individual or contractor.</i>	Abate by filling holes in the ground in and around the basin and by insuring that there are no areas where water stands longer than 72 hours following a storm or as specified in your swale’s O&M manual. Filling and re-grading will most likely require re-seeding or re-establishing vegetation as well.
Obstructed inlet or outlet structure	Clear obstructions.
Damage to structural components such as weirs, inlet, or outlet structures; disconnected or failed pipes at structures	Remove any debris or sediment that could plug the outlets. A professional contractor or consultant may be required to assist with re-establishing/re-building a structural component.
General obstructions (trampolines, sporting equipment, stored boats, sheds, picnic tables, etc.)	Swales should be free of any general obstructions. This is critical for large and/or long rain events. Take the time to inspect and remove any general obstructions that may be present prior to forecasted rain.

What to Look For

Accumulation of Sediment, Litter, Debris

Standing Water

Erosion

**Rodents/Animal Burrows
(gopher holes)**

Overgrown Vegetation/Invasive Weeds

Poor Vegetation Establishment/Bare Spots

Obstructed Inlet/Outlet

Structural Damage

Signs of Dumping

**General Obstructions
(lawn furniture, etc.)**

Grass and vegetated swales can be lower cost stormwater BMPs if they are not specifically designed to include infiltration media. However, these swales may not be as effective as bioswales or other infiltration practices at reducing runoff and filtering out pollutants. Nonetheless, these swales still provide valuable role in reducing runoff and limiting pollution.