



PROTECTING AND ENHANCING THE NATURAL ENVIRONMENT THROUGH COMPREHENSIVE ENVIRONMENTAL PROGRAMS

SWALES

Swales are best management practices designed to channelize and move stormwater while providing flow attenuation and removal of pollutants. Swales are linear structures, ideal for use alongside roads or property boundaries in place of curbs or gutter systems. The channel bottom is designed to be between 2 and 8 feet wide, with a thick vegetative cover to reduce erosion and attenuate flow, remove pollutants, and encourage sedimentation. A **grass swale** is a broad and shallow drainage channel and ideal for use along roads and highways. A **wet swale** is an open drainage channel or depression designed to intercept groundwater and retain water for water quality treatment. Wet swales are used in areas with a high water table. A **bio-swale** is similar to other swales, but include an under drain below a 2 to 4 feet layer of filtering media. **Dry swales** are open drainage channels designed to capture stormwater runoff and promote infiltration through an underlying fabricated soil media. Stormwater is channeled down the swale, and as it flows pollutants are removed through sedimentation, vegetative filtering, biological update, as well as infiltration into the soil.

Who is responsible for this maintenance?

As the property owner, you are responsible for all maintenance of your swale.

WHY IT'S IMPORTANT TO MAINTAIN YOUR SWALE

An unmaintained swale may:

- Stop filtering the rainwater and allow trash and pollutants to enter into our local streams.
- Block the flow of rainwater and cause local flooding.
- Allow water to pool on the surface long enough to allow mosquitoes or other insects to breed (longer than 3 days).

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Bio-Swale

MAINTENANCE AND MONITORING

FREQUENCY*	ACTIVITY*
Monthly or after a rain event	<ul style="list-style-type: none"> • Mow side slopes. • Irrigation may be needed during dry periods. • Look for dewatering within 48 hours after a rain event. • Remove litter and debris.
Semi-annually, or more frequently (as needed)	<ul style="list-style-type: none"> • Remove litter and debris. • Remove weeds. • Remove accumulation of sediment. • Trim woody vegetation at the beginning and end of the wet season.
Annually (as needed)	<ul style="list-style-type: none"> • Seed and sod to restore dead or damaged ground cover. • Repair undercut or eroded areas and remove accumulated sediment. • Eliminate any ponding areas. • Check all dams for structural issues and repair. • Remove invasive/nuisance plants.
Every 5-10 years (as needed)	<ul style="list-style-type: none"> • If swale loses infiltration capacity, replace the bio-engineered planting soil and vegetation.

* Follow manufacturer's guidelines

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<https://www.annapolis.gov/450/Stormwater-Management>

This fact sheet provides SWM practices information and maintenance requirements that are general in nature. Additional maintenance may be required based on the unique nature of your stormwater management practice.

Troubleshooting Issues

Symptom	Possible Cause	Solution
Poor grass health	Your grass may be the wrong type for your shade and moisture conditions or it may be smothered by weeds.	Remove dead or diseased grass and plant new vegetation as needed. Also be sure to regularly remove weeds and other invasive plants.
Standing water for over 48 hours after a rain event	Clogging due to leaf litter, grass clippings, sediment, or debris accumulation.	Remove any visible debris from the surface. Depending on severity, the swale may need to be tilled and replanted.
Erosion or bare soil	The rainwater is moving too fast and/or vegetation is lacking or nonexistent.	Stabilize the eroded areas by planting new vegetation. Consider using rocks to slow the flow of rainwater.

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INVASIVE PLANTS

“Invasive” describes a species that, when introduced into an ecosystem aggressively establishes itself at the expense of native plants or animals (*Maryland Department of Natural Resources*). Regularly inspect vegetation and remove invasive/nuisance plant species. For more information on invasive plants in Maryland, please go to the Maryland Department of Natural Resources website at: <http://dnr.maryland.gov/invasives/Pages/default.aspx>.



Grass Swale



Wet Swale