



PROTECTING AND ENHANCING THE NATURAL ENVIRONMENT THROUGH COMPREHENSIVE ENVIRONMENTAL PROGRAMS

## SUBMERGED GRAVEL WETLANDS

A submerged gravel wetland is a small-scale filter using wetland plants in a rock media to provide water quality treatment. Runoff drains into the lowest elevation of the wetland, is dispersed throughout the system, and releases at the surface. Pollutant removal is attained in a submerged gravel wetland through biological uptake from algae and bacteria rising within the filter media. Wetland plants also provide nutrient uptake.

A submerged gravel wetland can be located in limited spaces. These systems are best suited for areas where a high water table or poorly drained soils are present. Depending on individual site soil characteristics, a larger drainage area may be required to maintain saturated conditions within the wetland.

**Who is responsible for this maintenance?**

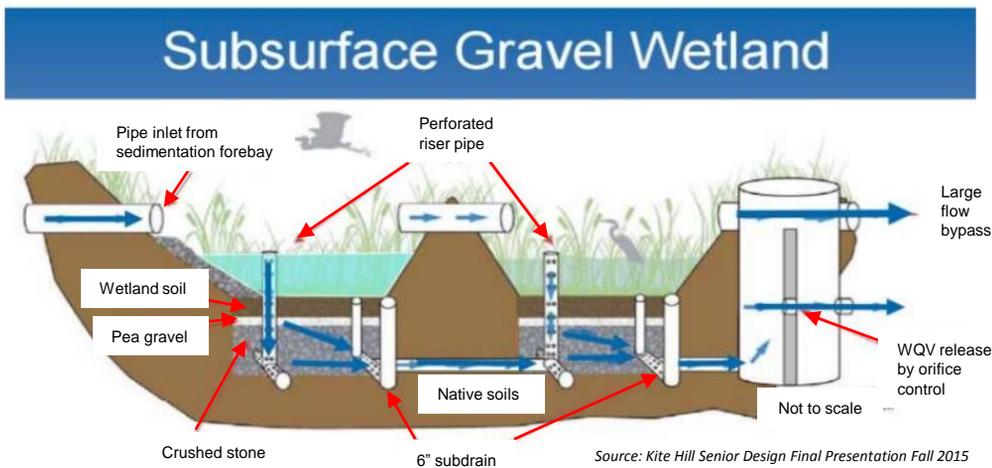
As the property owner, you are responsible for all maintenance of your submerged gravel wetland.

**WHY IT'S IMPORTANT TO MAINTAIN YOUR SUBMERGED GRAVEL WETLAND**

An unmaintained submerged gravel wetland may:

- Create stagnant water, which decreases nutrient removal and increases the likelihood of mosquitoes and other insects and can cause unsightly conditions.
- Allow sediment to buildup and accumulate

## Submerged Gravel Wetland



## MAINTENANCE & MONITORING

FREQUENCY*	ACTIVITY*
After major storms	<ul style="list-style-type: none"> <li>• Remove sediment accumulation (as necessary).</li> <li>• Remove trash and debris accumulation (as necessary).</li> </ul>
Semi-Annually	<ul style="list-style-type: none"> <li>• Dredge sediment from wetland area to prevent the gravel base from becoming clogged, this may require removing and replacing gravel.</li> <li>• Remove any invasive species.</li> <li>• Replant wetland vegetation in poorly established areas.</li> </ul>
Every 1 to 3 years	<ul style="list-style-type: none"> <li>• Clear debris and clogging from inlets and outlets to each submerged wetland cell.</li> <li>• Repair erosion at inflow/outflow points.</li> </ul>

\* 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.

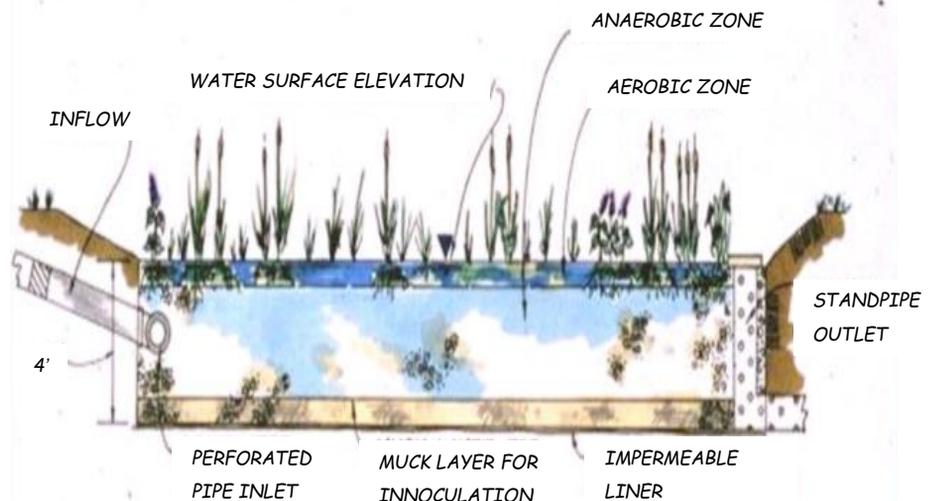
# Troubleshooting Issues

Symptom	Possible Cause	Solution
Stagnant water	Buildup of debris that blocks water flow paths	Remove any visible debris. Check to ensure that water is moving through all parts of the wetland. Ensure that debris does not block flow paths.
Dead or dying plants	Invasive species taking over planted vegetation	Regularly inspect vegetation. Remove invasive species. Herbicides should only be used for extreme circumstances.
Mosquitoes	Stagnant water	Ensure that water is moving through all parts of the wetland. Shade the water surface (mosquitoes avoid shaded water for egg laying).

## 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>.

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Source: The Chesapeake Bay Stormwater Training Partnership