



The mission of Geauga Soil and Water Conservation District is “To conserve, protect, and enhance the natural resources of Geauga county by providing leadership, education, and assistance to all.”

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HOMEOWNERS GUIDE ON CARE AND MAINTENANCE OF BIORETENTION AREAS

Are you a homeowner of a subplot with a bioretention area on it? Do you need help maintaining this structure or have questions on how to do this? This fact sheet outlines the basics for stormwater management on your property.

What is a Bioretention Area?

A bioretention practice is known as a type of Low Impact Development (LID) practice. These practices are used as an alternative method for stormwater management instead of the traditional stormwater pond. These types of LID practices are best known for using the natural habitat to help with groundwater recharge and filtering out pollutants. Bioretention practices by nature, are smaller scale and less expensive to build and maintain. They can also be installed in places where space is limited. They are used to treat smaller drainage areas, usually 2 acres or less. With the use of the soil, mulch and vegetation for treatment, the water infiltrates and water quality is improved. A bioretention practice is constructed using an underdrain to allow the water once filtered through the soil to be discharged into an adjacent stormwater pond or water body. The structure must be designed to dewater after a rain event between 40 and 72 hours. In addition to filtering out pollutants and aiding with groundwater recharge, bioretention practices can also provide economic and aesthetic benefits for the community. By using less space for stormwater facilities, infrastructure cost are lower and the land they are installed on may become more valuable. As more communities adopt the “green” theme, neighborhoods become much more attractive, which can lead to an increase in property values.



construction are compaction of soils. Repeated foot traffic or construction vehicles running over the soil in the bioretention area will cause too much compaction and result in soils that will not be able to drain or infiltrate at the correct rates. The soils for the planting medium must be tested by a certified laboratory to ensure the meet required specifications for the practice. The mulch layer should also be spread at a minimum of 3 inches in depth and not compacted. When the plantings are installed, taller trees or shrubs may need to be staked until they are established, so they do not get blown over during strong winds.

Correct and proper maintenance is key to establishing a healthy, functioning bioretention practice.

Maintenance and Responsibility

Bioretention practices require maintenance that is dependent on two major things: 1) The planting soils ability to drain; and 2) The survival of the plants. The planting soil should provide the adequate amount of drainage to allow water quality treatment to take place. The pretreatment area or area adjacent to the bioretention practice that acts as a filter and slows down the flow coming into the actual planting area, requires proper maintenance. This area may be made up of a grassed swale, or level stone trench. By reducing erosion issues within the pretreatment area, the life of the planting soil will be extended. It is important to maintain the pretreatment area by either replacing any bare areas with new seed or stone so sediments do not clog the filter layer. In the winter months, take extra care not to pile snow on the landscaped pretreatment area so damage does not occur. Over a period of 3 to 10 years, clogging of the planting soil layer with fine particles may occur.

Maintenance and Responsibility contd.

Cleaning out the soil layer may require replacing a portion of the planting soil and filter layer so better permeability is achieved. Plantings are a crucial part of the maintenance program and should also have a schedule in place. Plants may need to be replaced or added depending on the weather conditions and survival rates. This maintenance is on an as needed basis and should not be considered only once a year.

The underdrain installed in the practice is the main component that drains stormwater runoff to another water body. Routine maintenance of the cleanout portion of the underdrain will ensure the correct timing of stormwater discharge rates.

Bioretention practices, whether they are located on a commercial or residential lot may be the responsibility of a business, individual homeowner, or homeowner association. Pond ownership and maintenance responsibility is typically outlined in the Deed Restrictions for subdivisions or within a Declaration of Restrictive Covenants if not within a subdivision. Either document should identify the owners, how it will be funded and who will ultimately perform inspections and maintenance. If the responsibility is unknown, check with the Gauga SWCD. Sometimes, the bioretention practices are contained within a Drainage Maintenance District and the major maintenance will be the responsibility of the County Engineer.



When conducting maintenance on these bioretention areas, there are some activities that should not be done without obtaining permission from Gauga SWCD. For example, the shape, depth or location of the area is specified within the Deed Restrictions or Declaration of Restrictive Covenants and cannot be altered without prior written consent of the Gauga SWCD.

A regular maintenance schedule is required to document conditions and ensure proper function of bioretention areas. It is recommended to set up a maintenance checklist and include the activities applicable for maintaining your bioretention practice. Below are some minimum suggestions for maintaining a bioretention practice:

Bioretention Area Biannual Maintenance		Yes/No or N/A	Comments
<i>Date of Inspection</i>	<i>Inspected By</i>		
Removal of litter and debris			
Mowing of vegetated area and ensuring not driven over to reduce over compaction			
Prune and weed plants for appearance			
Replace or remove any diseased and dead plants			
Inspect underdrain and cleanout as necessary			
Bioretention Area Annual Maintenance		Yes/No or N/A	Comments
<i>Date of Inspection</i>	<i>Inspected By</i>		
Mulch should be replaced annually at a depth no greater than 3 inches and cover the entire area. Remove old compacted mulch prior to new mulch placement			
Repair any areas that have eroded			
Test soil and adjust as necessary to maintain the 5.0 to 7.2 pH range			

Information for this brochure was provided by the Ohio Department of Natural Resources-Rainwater and Land Development Manual and the Georgia Stormwater Management Manual.

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