

HOMEOWNER'S GUIDE TO



Maintaining Stormwater Management Areas

Why maintain your stormwater facilities?

- Improves water quality
- Decreases streambank erosion
- Maintains the health of aquatic organisms
- Nicer for the community
- Reduces flooding



Help Keep Our Water Clean

Nonpoint Source Pollution (NPS) is runoff from rain, snow melt, irrigation, or other sources that picks up contaminants such as oil and fertilizers as it washes across the land and deposits into our waterways. There are many actions that we, as homeowners, can take to help keep our streams, rivers, lakes, bays, and oceans clean. Here are a few helpful tips.

Don't over-fertilize the lawn. This can cause algal blooms in ponds, lakes, and streams.

DON'T



DON'T

Don't dump grass clippings, leaves, or trash into a storm inlet or stormwater management facility.

Don't wash vehicles on driveways or streets. Wash them on lawn areas where the soapy water can be filtered by grass and soak into the ground.

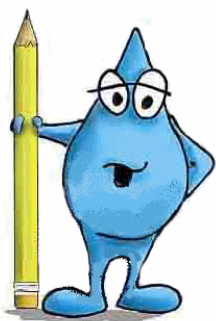
DON'T



DON'T

Don't dump used oil, antifreeze, or left over paint into storm inlets. Nothing except rainwater should go into drains.

Help Keep Our Water Clean



DO...

- ✓ Keep properties, streets, and gutters free of trash and debris such as cigarette butts and hamburger wrappers.
- ✓ Take dirty vehicles to a commercial carwash.
- ✓ Educate residents about the importance of **not** disposing of oils and other substances into stormwater inlets.
- ✓ Plan lawn care to minimize the use of fertilizers.
- ✓ Incorporate native trees, shrubs, and groundcover into the landscape.
- ✓ Pick up and dispose of pet waste.

While homeowners may do their best to try to keep pollutants from washing away, a certain amount still enters our waterways. Oil from cars, fertilizer from lawns, eroded sediment, and other types of pollution are virtually impossible to eliminate by behavior changes alone. Scientists and engineers have developed stormwater management techniques to deal with both water quantity and quality issues. All of these techniques improve water quality by filtering or settling out pollutants. The next page describes a few of the most commonly used stormwater management techniques.

Four Major Types of Stormwater Management Areas

Wet Pond



Wet ponds have a fairly standardized design that is specially aimed at managing and treating stormwater. These ponds stay wet year round. Stormwater only discharges from the pond when the water level rises over the outlet after pollutants settle in the pond.

Dry Pond



Dry ponds are stormwater runoff containment areas that remain dry except after rain. After the runoff is conveyed to them, an outlet structure allows stormwater runoff from a recent storm to slowly drain into a nearby waterway.

Infiltration Basin



Infiltration basins collect stormwater runoff in the same manner as wet and dry ponds, but they do not release the water through an outlet structure. Infiltration basins are designed so that stormwater eventually soaks into the ground, trapping pollutants, imitating natural conditions, and recharging groundwater supplies.

Green Technology



Scientists and engineers are currently designing and promoting new stormwater management devices that mimic nature and require much less maintenance. One example is the bioretention cell. Although it has the appearance of a landscape island, it is designed to temporarily store and treat stormwater runoff.

Stormwater Area Maintenance

There are generally two types of maintenance, routine and non-routine. While most types of routine maintenance can be performed by homeowners, non-routine maintenance should be performed by a professional.



Routine Maintenance

- Debris and litter control
- Minor bank stabilization and erosion control
- Stabilization of upstream areas
- Minor vandalism repairs
- Minor algae and aquatic vegetation control
- Inspections of all inlet and outlet structures for blockage after each storm
- Removal of blockage when needed
- Maintenance of a 10-foot wide access path to all inlet and outlet structures by mowing regularly

Non-routine Maintenance

- Major bank stabilization
- Removal of excessive sediment
- Structural repairs (embankment, outlet structure, etc.)
- Rare conditions (low Ph, spills, etc.)
- Major algae and aquatic vegetation control
- Nuisance wildlife management (geese, beaver, etc.)
- Mosquito control

Five Steps to Maintaining Stormwater Management Areas

step 1

Organize an open space management group such as a homeowners association or maintenance corporation.

Most housing developments have homeowners associations or maintenance corporations already established. If one does not exist for your development, organize one.

Secure funding , especially for non-routine maintenance.

step 2

Funding is the most essential component of maintaining stormwater management facilities. These costs can be divided into routine and non-routine. A rule of thumb is that annual routine maintenance costs will run from \$100 per acre for minimal maintenance including mowing, to \$500 per acre for more intensive maintenance including mowing, weed control, fertilization, and debris removal. Non-routine maintenance, however, can be costly over the long term, especially when considering the possibility of eventual rehabilitation or replacement of the stormwater management facility. To lessen the immediate financial impact of non-routine costs, it is advised that a maintenance fund, with monthly or annual contributions, be established.

Step 3 Perform routine maintenance and self inspections.



Inspecting your stormwater management pond or facility allows you to detect problems early, avoiding more extensive damage in the long run. The local sediment and stormwater agency in your area, also known as the delegated agency, performs annual inspections for all types of stormwater management facilities. Before performing a self inspection on any type of facility, obtain a copy of the inspection report prepared by the delegated agency for the stormwater facility of interest. To obtain a copy of the inspection report, please call DNREC at 302-739-4411 for contact information of the appropriate delegated agency.

Hire a professional when needed. **Step 4**

If there is any doubt, err on the side of caution and hire a professional to solve big problems, especially for non-routine maintenance. Hiring a professional such as an engineer, landscape architect, or surveyor would be another alternative to obtaining routine inspection reports. Call a professional if you see algal blooms, cracking of structural components, poor health of vegetation, deterioration of pipes, unexpected ponding, or excessive erosion or sedimentation.

Step 5 Correct any problems.

Dredging and other types of non-routine maintenance can be very costly, so be prepared. Have the funds available. Don't forget to make a budget and set aside yearly funds for non-routine maintenance. Again, these repairs need to be performed by a professional.

The information provided in this brochure is an overview of the following guide book that contains detailed information on maintaining stormwater management areas.



This project was funded, in part, through a grant from the Delaware Coastal Programs with funding from the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration under award number NA17OZ1117.

FIVE SIMPLE STEPS

TO MAINTAINING AND ENHANCING COMMUNITY OPEN SPACE AND STORMWATER MANAGEMENT AREAS

September 2004



Information gathered by the Delaware Department of Natural Resources and Environmental Control, Sediment and Stormwater Program

To learn more about maintaining stormwater management ponds and open space, please contact the Delaware Department of Natural Resources and Environmental Control, Sediment and Stormwater Program, at 302-739-9921 to obtain your free guide.

HOMEOWNER'S GUIDE



**Maintaining Stormwater
Management Areas**