

HOW TO MAINTAIN YOUR PONDS: STRUCTURAL MAINTENANCE

WHAT ARE STORMWATER PONDS?

A stormwater pond is a type of best management practice (BMP) designed to collect rainwater and pollutants and prevent downstream flooding. Many ponds located throughout Hampton Roads are stormwater BMPs, even ones that are community amenities. Stormwater ponds can have many different designs, including ponds with concrete channels, dry ponds with sand filters on the pond bottom, and ponds that provide wetland habitat around the edges.

HOW DO WET AND DRY STORMWATER PONDS WORK?

A dry pond is designed to hold water for a short period of time before allowing the water to discharge to a nearby stream. Between rain events, a dry pond looks like a large, grassy low area. When it rains, the pond fills with water. They hold water for 48-72 hours to allow sediment and pollutants to settle out. Because they detain water for a brief time before allowing it to flow out, dry ponds are also called detention ponds.

Wet ponds, on the other hand, maintain a permanent pool of water throughout the year. They remove pollutants by allowing sediment to settle as water slowly moves from one end of the pond to the other and through biological uptake, as plants absorb excess nutrients. Wet pond water levels can increase dramatically as a result of rainstorms, like dry ponds. Because they retain water for a longer time, wet ponds are also called retention ponds.

WHY ARE STORMWATER PONDS IMPORTANT?

Stormwater ponds:

- Control peak flows of runoff and lessen the effects of erosion.
- Help reduce street flooding.

- Improve the health of local waterways by removing pollutants and sediment from stormwater runoff.

Why is it important to keep your stormwater pond maintained?

Unmaintained stormwater ponds may:

- Not remove pollutants as intended, sending polluted water to streams and rivers.
- Become filled with sediment and debris, reducing the storage capacity of the pond, which may lead to downstream flooding and erosion.
- Look unsightly with excessive growth of unwanted weeds or algae.
- Cost more to fix problems if left unchecked.
- Lead to a dam breach if overgrown vegetation and trees compromise the integrity of the pond over time. This could cause flooding and damage to adjacent homes.
- Have inlet and outlet areas blocked by excessive growth or debris. This will cause water to back up or pond on adjacent properties.

By maintaining your stormwater pond, you are doing your part to help protect your local streams and the Chesapeake Bay. Maintaining your pond may be required by your municipality or local VSMP (Virginia Stormwater Management Program) Authority.

As rainwater flows over hard surfaces and grass, it picks up pollutants such as trash, pesticides from lawns, nutrients from fertilizer or pet waste, and oil and grease from cars. Ponds can remove much of this pollution.



MAINTENANCE 101:

No one should remove control structure manholes or enter the control structure without proper training, certification, and permits for confined space entry. Entering the stormwater pond itself or any confined spaces without meeting these requirements may be against the law and could be dangerous or deadly.

STRUCTURAL MAINTENANCE ISSUES:

- Shoreline erosion on the dam embankment
- Damaged or clogged inlet and outlet channels, pipes, and trash racks
- Accumulation of sediment and debris within the pond
- Dry pond holding water longer than 72 hours
- Cracks or damage to the concrete control structure
- Damaged or corroded trash racks, leaking control structures and pipe joints
- Disconnected/exposed joints

The following failures require immediate attention! Notify your local VSMP (Virginia Stormwater Management Program) Authority as soon as you notice the following issues to avoid safety concerns and expensive repairs.

- Cracks or sinkholes on the dam embankment
- Damaged or broken control structure
- Slope failure on the dam embankment
- Beaver lodges in the wet pool blocking outlet pipes
- Animal burrows in the dam embankment
- Missing manhole covers on the control structure
- Disconnected/exposed joints
- Collapsed/leaning control structure



Well Maintained Dry Pond

PREVENTIVE MAINTENANCE TECHNIQUES:

Performing preventive maintenance regularly will prevent long term damage and help avoid potential violations. These actions will keep your facility looking good and working correctly which will save time and money in the long term. The preventive maintenance actions can be thought of as similar to preventive car maintenance (like changing the oil in your car every 3 months). See the Non-Structural Maintenance Fact Sheet for Ponds for more information.

Structural maintenance is work done on the components of the pond that allow it to control rainwater and remove pollutants. The structural maintenance problems listed on page 3 are things you should be looking out for. When they happen, call your local VSMP Authority for help (like calling your mechanic when your check engine light comes on).



Well Maintained Wet Pond

GOOD TO DO...

First Year Maintenance (Wet Ponds Only):

- ✓ Inspect twice after each storm that exceeds a half of an inch of rainfall.
- ✓ Plant aquatic benches with required vegetation.
- ✓ Inspect for bare or eroding areas and reestablish vegetation as needed.
- ✓ Water plantings and vegetation within the aquatic bench.

Annual Maintenance:

- ✓ Measure sediment accumulation and clean out the forebay.
- ✓ Inspect the condition of stormwater inlets and outfalls.
- ✓ Monitor growth of plants.
- ✓ Inspect for erosion and reestablish vegetation.

Frequently:

- ✓ Mow surrounding grass. Please see the fact sheet for
- ✓ Non-Structural Maintenance of Stormwater Ponds for additional guidance regarding mowing.
- ✓ Remove trash and debris.
- ✓ Remove any blockages at the control structure.
- ✓ Inspect trash rack twice per year (dry ponds only).
- ✓ Inspect riser for evidence of spalling, joint failure, leakage, corrosion, etc. twice per year (dry ponds only).

Every 5 years:

- ✓ Clean out the pond and remove all sediment buildup.

As needed:

- ✓ Inspect the pond before and after every major storm event and contact your local VSMP Authority if you are concerned.
- ✓ Know the pollutant sources on your property and try to eliminate them at the source.
- ✓ Educate kids about safety around ponds.
- ✓ Inform contractors working on property of the location of the pond to prevent accidental damage.

Q&A:

Q: Who is responsible for the maintenance?

A: Maintenance responsibilities may vary by owner and/or locality. As the property owner you are responsible for all maintenance unless your locality has taken responsibility for some or all of maintenance. Be sure you understand your maintenance responsibilities by discussing required actions with your local VSMP Authority.

Q: How will I know what maintenance is required?

A: While VSMP regulations require ponds to be inspected once every 5 years, some localities will inspect more often. If your local VSMP Authority finds any maintenance issues during their inspection, you will receive written notification of the nature of the problem and the corrective action needed to maintain compliance. Your local VSMP authority will work with you if you have questions about how to maintain your pond. You are not expected to be able to identify all the structural repairs that may be needed on your facility. However, if you notice any of the issues or failures listed previously, please contact your local VSMP authority for assistance.

WHAT IF I NEED HELP OR HAVE ADDITIONAL QUESTIONS?

Your municipality or local VSMP (Virginia Stormwater Management Program) Authority can answer your questions and provide additional guidance about maintaining your stormwater facility.

askHRgreen.org

YOUR GO-TO RESOURCE FOR EVERYTHING GREEN IN HAMPTON ROADS

No matter where you are in Hampton Roads, askHRgreen.org can assist you in connecting with the stormwater professionals in your locality. For assistance, please email us at hrgreen@hrpdvca.gov, call (757) 420-8300, or visit us online at askHRgreen.org/WaterQuality.

