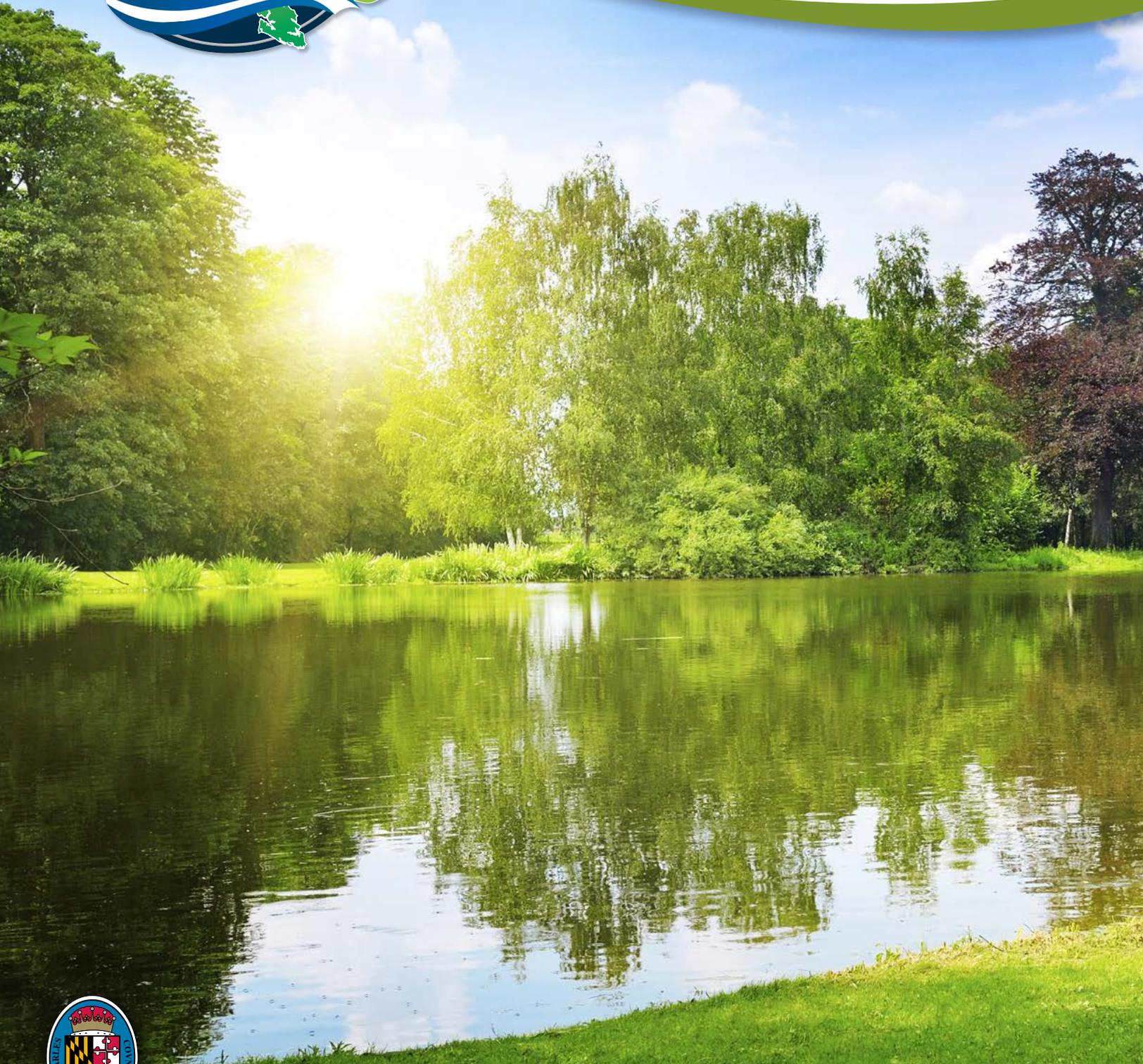




Guidance for Maintaining Stormwater Management Ponds



Charles County Government
Department of Planning & Growth Management



Ponds 101

What are wet retention and dry detention ponds?

Wet and dry retention ponds are stormwater management (SWM) devices designed to collect stormwater and pollutants and prevent downstream flooding. Stormwater picks up pollutants, sediment, and debris from hard surfaces during weather events. Ponds remove the pollutants before the water is discharged into the stream channel. Wet ponds always contain some water, while dry ponds only hold water after a storm event. Most ponds in Charles County are for stormwater management purposes, even though many have recreational or aesthetic components.

How do ponds work?

Stormwater runoff is transported to ponds by overland flow, ditches, swales and underground pipes. While the water is in the pond, pollutants and sediment settle to the bottom. Water leaves the pond gradually through an outfall structure (control structure) to an adjacent stream channel. An embankment (or dam) holds water back that is entering the pond. Dams are usually earthen and grassy, but may be concrete. Dry ponds, as the name implies, are designed to drain completely within 72 hours after a rain event. Wet ponds are designed to have a permanent pool of water.

What is the function of ponds?

- Capture pollutants such as nutrients, oil, trash, harmful bacteria, and sediment
- Improve water quality of streams, rivers, and bays
- Minimize downstream flooding
- Reduce potential for erosion in streambeds from fast flowing stormwater

Why is it important to keep ponds maintained?

Unmaintained ponds may:

- Not remove pollutants from stormwater before release, sending pollution into streams
- Fill with sediment and debris, not store water effectively leading to downstream flooding and erosion
- Pose safety and flooding problems for residents downstream
- Require costly structural repairs if left to deteriorate
- Grow excessive algae or weeds, emit unpleasant odors, and look unsightly

Who is responsible for maintenance?

As the property owner or designee, **YOU** are responsible for all maintenance. Structural and non-structural maintenance of SWM facilities and Best Management Practices (BMPs) is the responsibility of landowners for privately owned lots and the homeowner's associations (HOAs) for community owned properties. Preventative maintenance, like mowing and trash removal, prevents costly structural repairs and inspection violations, and minimizes downstream environmental damage. The best time to inspect ponds is after major storm events.

Preventative Maintenance Tasks

- Mow surrounding grass and remove trash and debris
- Eliminate or reduce pollution sources
- Vegetation Management



Maintenance 101

Ongoing Maintenance Checklist

Mowing and vegetation management are frequently neglected maintenance tasks for ponds. Mowing and controlling vegetation can reduce or eliminate structural maintenance issues.

1. Grass mowing

Mow the following areas **at least twice a year**:

- Top and downstream slopes of dam
- Upstream slope of dam (dry ponds)
- 25 feet around control structure (dry ponds)
- Inlet channels, around headwalls and pipes within pond area
- Outlet channel

Wet ponds designed with recreational or aesthetic components require more frequent mowing, **every 1 to 3 weeks** during the warmer months.

2. Vegetation Management

Trees and woody vegetation should be removed from the following areas **at least twice a year**:

- Top, upstream, and downstream slopes of dam
- Inlet and outlet channels
- Within 25 feet of control structure
- Channels, headwalls, and pipes into the pond area

3. Remove trash and debris

Perform trash and debris removal **monthly** from the following areas:

- In and around pond
- In and around trash rack on control structure

4. Eliminate pollutant sources

Know the pollutant sources on your property and try to reduce or eliminate the sources.



Maintenance for Non-Structural Issues



Missing pond safety sign. Safety signage is required.



Storm drain obstruction. Remove sediment, debris, and trash to allow flow.



Sediment accumulation at curb opening. Remove sediment and debris to allow water to drain into curb opening.



Sparse stabilization. Plant grass to avoid slope erosion.



Downstream dam slope not mowed to toe, trees on dam. Can cause dam to collapse.



Vegetation in fence and/or broken fence. Functionality is a safety issue.



Riser scaling/rusting. Functionality compromised.



Facility is overgrown. Functionality compromised.

Maintenance for Structural Issues



Shoreline erosion on the dam embankment. Address immediately to avoid further erosion.



Accumulated sediment and debris in pond. Periodically remove debris from pond water and structures.



Damaged or corroded trash rack. Repair or replace immediately to prevent clogging and functionality failure.



Damaged or clogged inlet and outlet channels, pipes and trash racks. Repair or replace to prevent functionality failure.



Leaking control structure and pipe joints. Repair or replace immediately to prevent functionality failure.



Dry pond holding water longer than 72 hours. Indicates a clog or drainage obstruction.



Dewatering pipe obstruction. Clogs or obstructions prohibit flow; flooding or drainage issues can result.



Dredging. Approximately every 10 years ponds should be dredged when the pool volume is half-filled with sediment. Ponds do not effectively remove sediment and pollutants when filled.

Structural Failures

Even with preventative maintenance, serious pond issues can occur. Structural failures require immediate attention to prevent failure of the pond mechanism, loss of functionality, and safety hazards.



Cracks or sink holes on dam (embankment).
Repair immediately.



Broken or damaged control structure.
Repair or replace immediately.



Slope erosion or failure on dam (embankment).
Engineered plan for repair required.



**Animal burrows in the dam embankment;
beaver lodges blocking outlet pipes.**
Seek assistance of wildlife control professional.



Missing manhole cover on control structure.
Replace immediately.



Pipe separation.
Repair immediately.

Water Quality Issues

Excessive Algae Growth

Planktonic algae (bright green, like pea soup) indicates high fecal coliform bacteria and/or excessive fertilizer issue.

Filamentous algae (hair-like strands, forms a mat that resembles wool). It can indicate excessive nutrients from fertilizer and pet waste, and cause noxious odors, clogged outfalls, and increased pond sedimentation.

Short term algae control:

- Herbicide application by a licensed applicator.
- Physical removal.

Long term algae control:

- Reduce nutrients into pond – pick up pet waste, reduce lawn fertilizer use.
- Add aquatic plants to pond shoreline.
- Add Bacteria and Enzyme products to pond.
- Consider an aerating system to circulate oxygen in the water.



Muddy Water

After development construction is complete, muddy waters should clear up. If not, address shoreline erosion of pond banks to reduce muddy waters.



Surface Films and Sheens

Pollen, blue-green algae growth, and red algae growth can cause surface films and sheens. Algae or pollen derived films will dissipate. Illicit discharges that cause films and sheens should be reported to the county and source contaminants eliminated.



Foam

Illicit discharges from soaps and detergents or algal bloom decomposition. Illicit discharges should be reported to the county and source contaminants eliminated.





Frequently Asked Questions

When does the Charles County's Codes, Permits, and Inspection Services (CPIS) Division inspect my pond?

CPIS performs inspections of all ponds in Charles County every three years. If your HOA has a new management company or president, please notify CPIS.

For a sample inspection form, visit the Watershed Protection and Restoration Program (WPRP) website at www.CharlesCountyMD.gov/Watershed.

Who is responsible for maintaining the pond? Who will fix broken fencing, trash rack, control structure, or pipes on my pond?

Structural and non-structural maintenance is the responsibility of the owner. A licensed contractor should be hired for major structural maintenance and repair.

How will I know what maintenance is required?

If CPIS finds maintenance issues during an inspection, you will receive a Maintenance Compliance letter and a copy of the inspection report. You will have 90 days to make the noted repairs. A civil citation may be issued if you have not complied with the maintenance requirements. CPIS will work with you if you have questions about how to maintain your pond.

Can I stock my pond with fish?

Owners must obtain approval from the MD Department of Natural Resources prior to stocking fish in a stormwater management pond.

I don't want mosquitoes, how can I avoid mosquito breeding in my pond?

Stormwater management ponds are not typically mosquito breeding habitat. Mosquitoes tend to breed in smaller areas of standing water, like gutters, pots, bird baths, and toys. Pond owners must use an approved contractor for any pesticide application. Visit MD Department of Agriculture's website at www.MDA.Maryland.gov for mosquito control guidance and a list of certified pesticide applicators.

Can I swim in the pond?

Swimming, skating, wading, and boating is not permitted in stormwater management ponds.

Who do I contact if I suspect illicit discharges in a stormwater management pond?

Report illicit discharges to Charles County Government at 301-645-0540 during business hours. Contact Maryland Department of the Environment's toll free 24-Hour emergency number at 866-633-4686 (866-MDE-GOTO) during non-business hours.

I need help or have questions?

Charles County staff and inspectors can answer your questions and provide additional guidance about maintaining ponds. Please contact us at 301-645-0627, email: PGMAdmin@CharlesCountyMD.gov, or visit our website at www.CharlesCountyMD.gov

