

Stormwater Ponds Quick Guide

Maintenance and Operational Planning

Constructed stormwater ponds and developed drainage areas should be monitored and maintained on a regular basis to ensure effective treatment and prevent operational challenges. This guide will help develop an operational and maintenance plan with estimated costs and inspection frequency for managing entities (HOA, business owner, city, parish, etc.). A major long-term expense for pond upkeep involves periodic inspections and routine maintenance. Stormwater management professionals should develop an inspection schedule to ensure proper water flow and treatment in ponds. For parish or city entities, these inspectors are part of operational budgets and will perform maintenance checks periodically to determine corrective steps as needed. Additionally, homeowners' associations, residents and citizens can provide more frequent analysis of pond function reported as part of HOA regularly scheduled meetings. Though these people may not be professionals, they typically are able to identify issues first since they are around ponds more frequently. Activities like community clean-up or HOA-based educational events provide opportunities to do maintenance that enhances pond function, reducing the potential for long-term costs. The following list identifies inspection and maintenance strategies for common problems in stormwater ponds and corresponding wetland filtration systems and can be used to develop an operation and maintenance plan.

► Routine (monthly, quarterly or after major storm events)

Check water flow from inlet and outlet pipes to evaluate clogging issues.

***Maintenance:** Contact licensed professional to schedule service. If clearing debris manually, one must proceed with caution for safety and liability concerns.*



Pond infrastructures like culverts are easily clogged from storm flushing events. This issue can be magnified in high residential areas where debris is more present.

Check the pond edge, wetlands, permanent pool or dry pond area for floating or persistent debris.

***Maintenance:** Remove debris and trash that has accumulated.*

Inspect edge erosion around the pond.

***Maintenance:** Rebuild cutout, eroded or bare soil areas by planting vegetation. Licensed professionals should be called if the problem worsens.*



Weakened pond edges will collapse from the weight of soil and vegetation causing sediment buildup and excess nutrients in pond systems.

Monitor wetland/pond plant health and check for invasive or undesirable vegetation.

***Maintenance:** Replant vegetation or manually remove weeds. In some cases, a landscape professional can be scheduled for monthly services.*

Look for broken pipes, collapsed areas around infrastructure, fallen or removed signs or other dangerous items.

***Maintenance:** Depending on the extent of the damage, call a licensed contractor or an engineering group to prevent further damage.*

► **During the Warm Season**

Inspect stormwater ponds, wetlands and stagnant water for possible mosquito production.

***Maintenance:** Call a licensed professional or a mosquito abatement office to adjust the spray schedule.*

► Semi-Annual to Annual

Assess wetland plant coverage to determine at least 50 percent survival.

***Maintenance:** Replanting vegetation on pond edge or beneath the water surface may be necessary, or changing the types of plants, to be more conducive to the water flow patterns, soil type and general conditions.*

Check that all mechanical components are functional.

***Maintenance:** Any failure of mechanical components may need the attention of a licensed professional. For some ponds, pumps may need to be cleaned to avoid damage and ensure there are no clogs from debris.*

Harvesting of open water vegetation to ensure adequate surface exposure.

***Maintenance:** Some plants, when provided with dense nutrients in ponds, can become overgrown and cause an imbalance in open water systems. Mechanical removal may be needed to keep surface water open.*

Assess the impact of nutrients, herbicides and pesticides on the pond area.

***Maintenance:** Produce content or host educational events for the local community to promote and implement best management practices for fertilizing yards and greenspaces.*

Monitor wildlife activity, including nuisance rodents and waterfowl.

***Maintenance:** Wildlife species can create issues with clogging and excess nutrients, so assessing their populations is critical. Fill burrows for invasive nuisance species and consult local wildlife and fisheries officials to identify licensed nuisance trappers. Provide information for residents to discourage wildlife and waterfowl in order to prevent buildup of nutrients and fecal contaminants.*

► Every 1 to 3 Years

Professional inspectors should check all infrastructure, piping and embankments for damage.

***Maintenance:** Repairs may be necessary. Assessments by landscape companies should be checked and renewed if applicable.*



Embankments and underwater pipes can be assessed during droughts when water levels are low. Take pictures throughout the year for reference if water levels get low enough to see bank slopes and sediment levels.

Estimate sediment buildup with fixed sediment markers or advance measurements in water flow areas and the forebay.

***Maintenance:** Sediment removal is a larger contracted project, but in the early stages, adjustments can be made to water flow or surrounding vegetation to discourage buildup.*

► Every 5 to 25 Years

Precision inspection of sloped pipes, underdrains and other hard-to-access piping should be done by a licensed professional.

Maintenance: The inspection service should indicate any infrastructure repairs that are critical to efficient treatment.

Restore ground cover by seeding or installing sod, and vegetate to help maintain sedimentation.

Maintenance: Manual spreading and planting for ground cover can be done by community volunteers or professional landscape companies.

Resources:

Storm Water Permit Resources | Louisiana Department of Environmental Quality (<https://deq.louisiana.gov/page/storm-water-protection>)
Stormwater Best Management Practice: Dry Detention Ponds (<https://www.epa.gov/system/files/documents/2021-11/bmp-dry-detention-ponds.pdf>)
Stormwater Wet Pond and Wetland Management Guidebook, February 2009 (www.epa.gov/sites/default/files/2015-11/documents/pondmgmtguide.pdf)

Authors:

M.P. Hayes, Assistant Professor, School of Plant, Environmental and Soil Science
Carol Franze, Marine Extension Program Agent, Louisiana Sea Grant/LSU AgCenter
Greg Lutz, Professor, School of Renewable Natural Resources

