WET PONDS

STORMWATER MANAGEMENT PRACTICES GUIDANCE FOR PRIVATE OWNERS

WHAT ARE WET PONDS?

A wet pond, also known as a retention basin, is a constructed basin with a permanent pool of water designed for the storage, treatment, and controlled release of stormwater runoff. This practice can be used in residential, commercial, and industrial areas if the contributing watershed is large enough. Generally, the watershed should be at least 10 acres to ensure a constant supply of water to maintain water depth. When properly maintained, wet ponds help mitigate flooding and improve water quality.

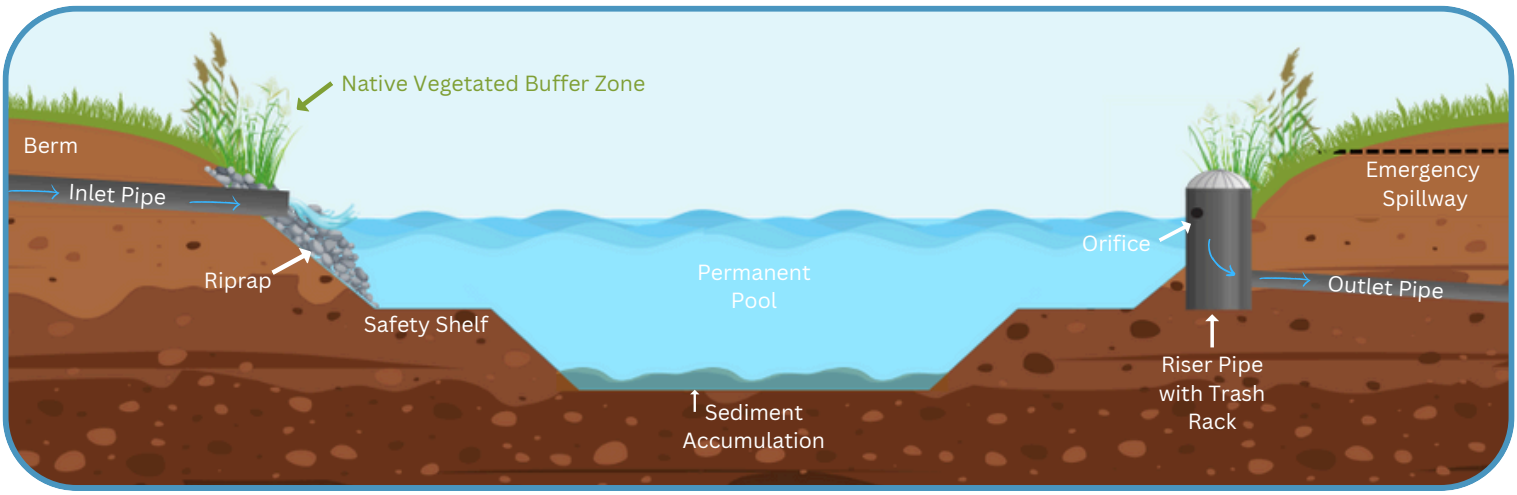
Wet ponds operate by allowing water to enter through an inlet, typically draining from impervious surfaces such as roofs and parking lots. As stormwater is retained within the pond, pollutants and suspended sediment gradually settle onto the pond bed. Due to the permanent ponding of water, wet ponds can remove large amounts of pollutants and are more effective in removing nutrients than most other management practices.

DID YOU KNOW?

While trees and woody vegetation on the berms of wet ponds and rodents and other small critters in the water may be aesthetically pleasing, they can pose safety risks when it comes to the structural integrity of the pond. Decaying roots and burrowing animals can create preferential flow paths through the berm, increasing the likelihood of failure of the berms by piping (or internal erosion). Dense vegetation may also make it more difficult to identify critical issues during inspection.

COMPONENTS OF A WET POND

Berm: The compacted earthen wall.
Inlet: Where stormwater enters the pond.
Riprap: A layer of large stones that protects soil from erosion in areas of high or concentrated flows. Riprap is often used for energy dissipation.
Forebay: A designated area, separated from the rest of the pond by a wall or berm, near the inlet designed for debris capture, sediment settling, and flow regulation. *Note: may not be present in all wet ponds.*
Safety Shelf: A flat, shallow 8-foot extension from the pool edge.
Native Vegetated Buffer: A vegetated area surrounding the pond with native aquatic vegetation which helps filter runoff before entering the pond.
Permanent Pool: The main ponding area of water where sediment accumulation takes place. Typically 3-6 feet deep with depths varying throughout.
Outlet: Where water exits the pond after being treated. There are often multiple outlets, such as the orifice and main riser pipe pictured below, to release water at different rates.
Emergency Spillway: An area designed to release water in the event the pond overfills. This helps prevent pond failure and erosion.



WET POND MAINTENANCE

Upon the construction of stormwater facilities, landowners sign a maintenance agreement where they commit to carrying out necessary maintenance on the facility to keep it functioning as designed. While some maintenance tasks can be performed by the landowner, others may require a professional, such as a pond management technician. Below are several common maintenance tasks to perform on your stormwater pond.

Activity	Frequency	Maintenance Notes
Routine Inspection	Twice per year	Perform a routine inspection twice per year to ensure the pond is operating properly and there are no problems such as erosion, unwanted vegetation, outlet obstructions, or structural damage. For assistance on inspections, follow the Dane County Inspection Guide.
Vegetation Management	As needed	Vegetation plays a crucial role in the efficiency of a wet pond and requires routine maintenance. Routine vegetation management on a wet pond includes keeping embankments clear of invasive species and woody vegetation, establishing a natural buffer zone with mowing no shorter than 6 inches, and keeping pond structures clear of overgrowth.
Trash & Debris Removal	Every 1-3 months	Pond structures should be kept clear of debris to allow stormwater to flow as intended. A blocked outlet pipe can reduce drainage capacity, resulting in overflow and erosion. This not only jeopardizes the pond's functionality but also poses a risk of potential structural damage. Ponds near high traffic areas may collect more trash & debris.
Depth Assessment	Every 5 years	Over time, sediment buildup can alter the depth of your pond. To keep your pond functioning optimally schedule a pond depth check every 5 years. If the average depth falls below 3.5 feet, perform sediment removal to restore the pond to its original design depth. Maintaining a minimum average depth of 3.5 feet guarantees ample storage capacity for sediment removal and flood control. Sediment removal must comply with NR 528.

SAFETY FIRST

Wet ponds often contribute to the visual appeal of their surroundings, yet it is crucial to recognize their primary function. These ponds serve as drainage for areas containing stormwater runoff, which may carry contaminants. Like all natural bodies of water, wet ponds have safety risks, and owners should be aware of the following potential safety risks that wet ponds pose:

- Due to the higher concentration of contaminants, they should not be used for recreational activities such as fishing, swimming, or ice skating.
- Stormwater ponds and facilities are designed to hold and then release water. This means that after the surface of the pond freezes, the water level beneath the ice could drop, leaving an air gap under the ice. Ice that is not directly on top of water is not safe, and should never be walked or skated on.
- Embankments may be steep, so use caution when mowing or pruning.

The information in this fact sheet provides general maintenance recommendations. Refer to your maintenance agreement for specific requirements.

For more information regarding Stormwater Management in Dane County, scan the QR code or visit us at danecountystormwatermanual.com