



Minnesota  
Pollution  
Control  
Agency

# Municipal Stormwater Ponds

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**A** stormwater pond (also referred to as wet sedimentation basin, wet retention basin, or simply wet pond) is a man-made or modified natural basin constructed to capture and retain stormwater runoff for the purpose of removing pollutants and mitigating downstream water quantity impacts.

## What is a stormwater pond designed to do?

Stormwater ponds are designed to receive and hold a prescribed volume of runoff for a specific period of time or until it is displaced by the next storm. During this time, particles settle to the bottom taking many of the pollutants with them.

## Are stormwater ponds safe?

Unlike natural ponds, stormwater ponds are designed expressly to capture and retain runoff carrying pollutants, and as such, are generally considered unsafe for swimming, fishing, or other recreational activities. Casual contact with the water is usually not of immediate concern, but immersion or ingestion of pond water is discouraged. Stormwater ponds are often designed to keep people from coming in contact with the water by incorporating built-in safety considerations such as gradual side slopes and safety ledges or natural barriers such as tall shrubs or grasses planted around the perimeter.

## How does a stormwater pond function?

As stormwater flows over land and impervious surfaces, it picks up pollutants and sediment, carrying it along as it travels

downstream. Stormwater directed to ponds is detained in the basin, providing an opportunity for pollutants and sediment to settle to the bottom. Pond plants, algae and other biological processes remove dissolved metals and nutrients, while natural sedimentation processes remove particulates, organic matter, metals and other potential pollutants. Some pollutants will not breakdown but will accumulate along the bottom and can be removed during maintenance activity.

## How do you ensure it is functioning properly?

All stormwater ponds require maintenance. Failure to properly maintain a pond can reduce storage capacity and decrease the amount of pollutants removed. Periodic inspections of ponds are necessary to monitor the amount of sediment accumulation and to clean out debris trapped in outlets or inlets. Vegetation must also be properly maintained to allow for inspection and prevent clogging.

Municipalities regulated under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Municipal Separate Storm Sewer System (MS4) Permit Program are required to annually inspect all structural pollution control devices and 20 percent of all stormwater ponds they operate.

Pond design should incorporate maintenance requirements, allowing easy access for the removal of sediment that accumulates in the basin. Regular inspections will determine when it is

necessary to dredge the pond and remove excess sediment accumulation, but generally ponds should be evaluated to determine the need for dredging every five years.

Dredging should be scheduled for winter or the driest time of the year. As an alternative to winter removal, some ponds are designed with a drain to draw down the pond and periodically clean out sediment buildup. If dredging is needed, you may need a permit or sediment monitoring, depending on the size of the project, potential pollutants in the sediment, and disposal options selected. Contact the MPCA for approval of disposal options.

## More information

For more information on stormwater ponds see the Minnesota Stormwater Manual, [www.pca.state.mn.us/water/ststormwater/stormwater-manual.html](http://www.pca.state.mn.us/water/ststormwater/stormwater-manual.html), or contact MPCA Staff:

- Todd Smith, 651-757-2732 (Residential stormwater treatment, new construction)
- Scott Fox 651-757-2368 (City/Municipal stormwater operation and maintenance)