



Maintaining Detention Ponds

So, you have a detention pond on your property...

Detention ponds are used to improve the quality of urban runoff from roads, parking lots, residential neighborhoods, commercial areas, and industrial sites and to reduce peak stormwater runoff rates by providing temporary storage during larger storm events. If the detention pond on your property was constructed early in the development process, it was probably used to trap sediment from construction activities in the tributary drainage area, a very effective way to collect and remove pollutants. In addition, the detention pond on your property may provide other benefits such as passive recreation and open space opportunities, reducing peak runoff rates, and improving water quality. A functioning detection pond is a requirement for stormwater management.

You, as the owner of this stormwater feature, the manager of a commercial site, or as a member of a Homeowner Association (HOA), need to understand the importance of the detention pond facility and your obligation to ensure its continued proper function. This detention pond maintenance fact sheet will provide the information and the contacts you need to operate a fully functional detention pond on your property.

Who's responsible for your pond...

Designation of a responsible party is important to ensure proper operation of your detention pond feature. In some instances, this may be a shared responsibility. In the majority of cases, the commercial property owner or the HOA is responsible for the correct operation and proper maintenance of the pond.

Why maintain your pond...

Stormwater runoff is a significant source of water pollution in urbanized areas. In addition, the increased volumes of flow resulting from added impervious areas during urbanization result in increased runoff volumes. Detention ponds mitigate both scenarios by providing a treatment basin for pollutant removal as well as a collection basin to retain the larger flows and thus reduce the peak runoff rates downstream. Studies have shown that properly maintained detention ponds can be very effective at removing certain pollutants and providing necessary storage volumes during larger storm events. Improperly maintained ponds can increase the

discharge of pollutants downstream, increase the risk of flooding downstream, increase the instability of downstream channels, and lead to aesthetic and nuisance problems.

Why Some Ponds fail...

Studies show that poor operation and maintenance is the leading cause of pond failure. Poor maintenance can also create unpleasant odors, nuisance insects, algae blooms and a generally unsightly, unkempt area. Detention ponds may fail due to:

- Poor vegetation maintenance in terms of mowing and weed control.
- Clogged inlets resulting from trash and debris, sediment accumulation,
- Failed side slopes, and
- Inadequate access for routine maintenance activities.

Knowing why this pond was built at your commercial site or in your subdivision community and the importance of all the components working together should reduce the chance of pond failure.

Maintenance considerations...

Routine HOA maintenance, like mowing and debris removal, is vital to the proper operation of the detention pond and needs to be done on a frequent basis. Non-routine HOA maintenance, like slope stabilization and sediment removal, will probably be more on an annual basis. Every pond is different in the size, type, and characteristics of the tributary area that contributes runoff to the pond, as well as the location of the pond with the development.

- A pond serving a large commercial district will likely require more maintenance than one serving an established neighborhood, and a pond in a prominent location in the development will require more frequent collection of trash to make a favorable impression.
- Maintenance considerations for a wet pond will need to focus on floating litter, scum and algae blooms, shoreline erosion, possible unpleasant odors and mosquitos, as well as more difficult sediment removal.
- Maintenance considerations for a dry pond will concentrate more on mowing to control the vegetation and frequent removal of the trash and debris that may clog the outlet/trash rack.

Maintenance will always be needed; if maintenance is not done, or not done frequently enough, or properly, a false sense of security exists for the pond's temporary storage abilities during a large storm event, and it's pollutant removal abilities during a typical runoff event.

Routine HOA Maintenance...

Routine maintenance includes:

Inspections: Periodic scheduled inspections with a specified checklist, and inspections after major rainfall events, to check for obstructions/damage & to remove debris/trash.

Vegetation Management: Mowing on a regular basis to prevent erosion or aesthetic problems. Limited use of fertilizers and pesticides in and around the ponds to minimize entry into pond and subsequent downstream waters.

Trash, debris and litter removal: Removal of any trash, etc. causing any obstructions at the inlet, outlet, orifice or trash rack during periodic inspections and especially after every runoff producing rainfall event. General pickup of trash, etc. in and around the pond during all inspections.

Mechanical Equipment check: Inspection of any valves, pumps, fence gates, locks or mechanical components during periodic inspections and appropriate replacement/repair.

Structural Component check: Inspection of the outlet works, inlet, orifice, trash rack, trickle channel on a regular basis for additions to the annual Non-routine Maintenance list.

Non-routine HOA maintenance...

Non-routine maintenance includes:

Bank erosion/stabilization: It is critical to keep effective ground cover on all vegetated areas in order to see the benefits of proper infiltration of runoff, and effective filtering of pollutants. All areas not vegetated should be re-vegetated and stabilized immediately.

Sediment removal: Every six months or so, the accumulated sediment should be removed from the bottom of the outlet structure and the pond depths checked at several points. If the depth of the accumulated sediment is greater than 25% of the original design depth, sediment should be removed.

Minimum checklist components...

(A good time to fill out a checklist is every time routine maintenance is done; while mowing, someone can check the other features, too)

Any obstructions of the inlet, outlet or orifice?

Has trash accumulated in the pond or on the rack?

Any erosion or instability on the slopes?

Any sedimentation in the basin?

Any settling or cracking of the bermed areas?

Are there any upstream or downstream conditions that could affect pond operation?

Is trickle channel conveyance in good working order?

Is outlet channel conveyance in good working order?