

THE IMPORTANCE OF DETENTION BASINS

Urbanized areas produce large stormwater runoff volumes due to large amounts of impervious surfaces. Stormwater runoff can pick up pollutants such as sediment, nutrients, pesticides, and other waste, becoming a significant source of water pollution. A detention basin is designed to reduce the impacts of urbanization on local streams and rivers by collecting and slowly releasing stormwater, thereby improving stormwater quality as well as reducing peak flows.

Properly maintained detention basins can provide effective pollutant removal and necessary storage volumes during larger storm events. Improperly maintained detention basins can result in increased pollutants discharged downstream, risk of localized flooding, instability of downstream channels, and aesthetic and nuisance problems. It also is often very expensive to repair failed detention basins.

This brochure is intended to assist you in your detention basin maintenance efforts. A more comprehensive detention basin maintenance document is available on the City of Cedar Rapids stormwater web page (www.cedar-rapids.org).

If you have questions regarding your detention basin, please email sewer@cedar-rapids.org or call 319-286-5604.



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MAINTENANCE OF PRIVATE DETENTION BASINS

DETENTION BASIN COMPONENTS

Inlet pipes direct stormwater from neighborhoods, parking lots, streets, and other surfaces into detention basins.



Outlet pipes direct stormwater out of a basin to a receiving drainage way, creek, or stream. Outlet types may include a riser pipe connected to an outlet pipe, orifices, pipes/culverts, and weirs.



Trash racks and grates prevent debris and garbage from getting into the outlet structure, which if occurs, can clog the pipe and prevent the proper discharge of water from the basin.

BASIN MAINTENANCE

Periodic scheduled inspections of your basin, and inspections after major rainfall events, should include:

Inspection of Inlet & Outlet Structures

Inspect inlet and outlet pipes for the following:

- Structural integrity- make sure they are not damaged or crumbling.
- Erosion- check around the pipes for erosion and missing rip rap.
- Obstructions- check pipes for flow obstructions from debris, trash, or sediment. Minor amounts of sediment can be removed with a shovel, spread evenly on an upland area, and seeded.
- Keep the outlet riser screen and/or trash rack on and free of debris.

Vegetation Management

Vegetation provides erosion control and enhances sediment entrapment.

- Mow regularly to prevent erosion and eliminate the need for brush removal. Keep the height at 4-6" to maintain healthy grass. If your basin is planted with native plants and grasses, mow once during the fall to a height of 8-10".
- Collect grass clippings and other trimmings and dispose of them properly offsite.
- Limit the use of fertilizers and pesticides in and around basins to prevent entry into downstream waterways. If you must use fertilizer use a product that is phosphorus-free.
- Remove noxious weeds and saplings.
- Remove vegetation around inlet/outlet structures that may interfere with operation.
- Remove trees and saplings. Trees reduce the capacity of the basin to store water and tree roots can damage the banks and piping.

BASIN MAINTENANCE

Litter & Debris Removal

Check for litter and debris near the inlets, in the basin, and on the screen and/or trash rack. Trash and litter should be removed and properly disposed of.

Erosion Repair and Stabilization

Inspect the side slopes and basin bottom for bare areas, gullies, and sloughing. Eroded areas should be repaired and stabilized by filling with topsoil and seeding with permanent vegetation. Seeding should be adequately covered with mulch or straw to prevent it from being washed into the basin.

Sediment Removal

Sediment that has accumulated in the inlets or outlets should be removed to prevent obstruction of flow. Sediment that has accumulated in the basin should be removed every 5-10 years or when the sediment accumulation is more than 6-12".

PRIVATE RETENTION BASINS

While less common than detention basins, retention basins are also used to manage stormwater runoff. However, retention basins are designed to permanently hold water. In general, detention basin maintenance measures apply to retention basins as well. Floating litter, scum, algal blooms, and shoreline erosion are additional maintenance considerations for retention basins.

