

# Stormwater Management

Stormwater is generated when rain or snowmelt is not able to be absorbed into the ground because it falls on a hard or impervious surface, the ground is already saturated or it rains faster than the water can be absorbed. This excess water flows over the ground and then into stormwater inlets, sewers or directly to local ponds and streams.

Unlike wastewater or combined sewers, stormwater sewers DO NOT connect to the wastewater treatment plants (WWTP). Anything that is picked up by stormwater including trash, pesticides, pet waste, etc., as it flows over yards, streets, and parking lots will make its way into nearby lakes, creeks, and rivers.

Good water quality is important. Our goals are to balance water quality protection and Clean Water Act (CWA) compliance with economic growth and help provide a sustainable path to stormwater management for our region.

## [Phase II Stormwater Management Plan](#)

Learn details on our stormwater management plan.

### [Residential](#)

Water quality improvement is a community effort. Understand what you can do as a residential client.

### [Municipal](#)

What municipal maintenance departments can do to improve community water resources.

### [Commercial](#)

Understanding corporate responsibility in maintaining healthy community water resources.

### [Detention Basin and Water Quality](#)

Detention basins require regular maintenance in order to ensure proper function.

### [Stormwater BMP Toolbox](#)

Offering a more complete understanding of the Township of Hamilton's stormwater management practices.

## Phase II Stormwater Management Plan

The purpose of the Township of Hamilton's [Stormwater](#) Management Plan is to improve area [water quality](#) by preventing harmful pollutants from being carried by [stormwater runoff](#) into local water bodies. The Township of Hamilton partners with the New Jersey Department of Environmental Protection (NJDEP) to comply with stormwater permit requirements for the Township of Hamilton Municipal Separate [Stormwater System](#) (MS4).

Best Management Practices (BMPs) are methods to prevent or reduce the pollutants in stormwater runoff. The Stormwater Management Plan (SWMP) includes BMPs that address potential sources of pollutants in stormwater as required by the federal and state regulations. The implementation of BMPs in the SWMP will satisfy the six Minimum Control Measures (MCMs) required by the Phase II Regulations.

# These six minimum control measures are:

## I. Public Education and Outreach

The Plan implements a public education program to distribute educational materials to the community and conduct outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

## II. Public Involvement and Participation

The public is actively involved in implementation of the stormwater management program through community groups of all kinds and participation in activities to reduce stormwater pollution.

## III. Illicit Discharge Detection and Elimination

The township of Hamilton has developed and implemented a program to detect and eliminate illicit discharges into our MS4 and area streams. We developed and maintain a map of the area streams, storm sewers and storm sewer outfalls.

## IV. Construction Site Stormwater Runoff Control

Land disturbance programs must be implemented to reduce pollutants in storm water runoff from construction activities that disturb the land. The BMPs required by the program focus primarily on [erosion](#) and sediment control.

## V. Post-Construction Stormwater Management

A program to address stormwater runoff from new development and redevelopment projects must be implemented to reduce pollutants in stormwater runoff from developed property. The program must ensure that BMPs are in place to prevent or minimize water quality impacts. Structural BMPs include stormwater [detention](#) ponds, [infiltration](#) basins, [filter strips](#) and more.

## VI. Pollution Prevention/Good Housekeeping for Municipal Operations

An operation and maintenance program that has the ultimate goal of preventing or reducing [pollutant](#) runoff from municipal operations will be implemented by all co-permittees.

## Residential

The Township of Hamilton cannot keep the region's waterways clean alone. It needs the support, resources, and actions of concerned citizens and businesses to improve local [water quality](#). Since our waterways and sewers are shared public resources, there are many steps that you can take to help maintain both.

Residents can:

- Disconnect rain gutters and downspouts from nearby sewer lines
- Install a [rain garden](#) or [rain barrel](#) to capture [stormwater runoff](#)
- Avoid planting trees, shrubs and bushes on your property near the sewer line. As plants' roots deepen, they can enter, block and damage sewers
- Reduce your water use, especially during rainy weather
- Check whether the sewer line that leads to your house has cracks or separated joints and report damage to the Township of Hamilton
- Reduce fertilizer and pesticide use and lawn watering
- Properly dispose of household hazardous waste like cleaning products, motor oil and paints
- Collect and dispose of trash and pet waste properly
- Reduce impervious surfaces (blacktop, concrete, etc.) on your property where possible.

## **Municipal Street Cleaning and Maintenance/ Parking Facilities**

- Perform clean/paving activities during dry weather
- Cover and seal nearby storm drain inlets before maintenance repairs are made
- Sweep parking lots or use other dry cleaning methods
- Design parking lots to include semi-permeable areas
- Post "No Littering" signs on parking lots to encourage proper disposal

## **Park Maintenance/Landscaping**

- Mow grass higher and leave lawn clippings to retain moisture and provide nutrients
- Ensure the proper disposal of yard waste by composting
- Minimize the use of landscaping chemicals
- Avoid fertilizer application before rain
- Apply fertilizers and pesticides according to the label
- Use natural biological controls for pest control when feasible
- Apply pesticides when the target pest is most vulnerable
- Remove [litter](#) and debris frequently

## **Materials/Supplies Storage**

- Store materials inside if possible
- Cover materials to prevent [stormwater](#) contact if stored outside
- Contain and clean up spills immediately using dry methods
- Train employees on cleanup procedures
- Dispose of spill cleanup material properly
- Keep material safety data sheets on site and post emergency contact numbers for reporting spills

## **Vehicle/Equipment Maintenance**

- Clean work areas to minimize oil and grease buildup
- Provide a designated covered area for vehicle maintenance to limit exposure to rain
- Clean vehicle parts without using liquid cleansers whenever possible
- Monitor parked vehicles/equipment for leaks
- Use a catch pan to capture leaking or dripping fluids
- Dispose of waste materials according to applicable laws and regulation

## Commercial

Dirt, oil, and trash that collect in parking lots and paved areas can be carried by [stormwater runoff](#) into a [storm sewer](#) and eventually reach local water bodies.

- Sweep up [litter](#), trash, and dirt from sidewalks, driveways, and parking lots, especially from around storm drains.
- Keep lids closed on grease storage containers and trash dumpsters so stormwater will not be contaminated. Make sure the containers are not leaking.
- Businesses and local governments should provide an adequate number of appropriately sized containers.
- Owners of commercial dumpsters should be certain their containers are of adequate size to handle the waste they generate. Trash receptacles and dumpsters should be emptied on an appropriate schedule.
- Keep chemicals and other materials stored onsite under cover to prevent contaminating runoff.
- Use all chemicals responsibly and properly dispose of wastes.
- Ensure the proper disposal of all [wastewater](#) into the wastewater sewer [system](#).
- Report any chemical or oil spill to emergency response agencies. Be prepared for spill incidents to keep spills from harming the environment.

## Construction

- Minimize the amount of exposed soil and divert stormwater away from disturbed or exposed areas of the construction site.
- Install best management practices (BMPs) such as silt fences, vegetative cover and other sediment and [erosion](#) controls, and properly maintain them.
- Wash mud from vehicles in areas where the water will not enter the storm sewer or run to a nearby water body.
- Properly dispose of trash and other wastes.

## Automotive/Vehicle Washing

- Provide cover over fueling stations and provide for spill containment.
- Wash vehicles at a commercial wash or other properly designated facility that treats its wastewater before sending it to the wastewater sewer.

## Kennels/Stables

- Clean animal living quarters to collect and properly dispose of waste.
- Do not wash animal waste into storm drains.
- Avoid animal waste contaminating stormwater by diverting runoff and by covering stalls

## Grease Interceptors

Grease tends to originate from restaurants, food service operations and other institutional food establishments. Improperly managed grease can create problems for [sewer](#) systems.

Grease is present in such items as:

- Lard
- Cooking oil
- Baked goods
- Shortening
- Meat fats
- Dairy products
- Food scraps
- Butter
- Sauces

## Why is grease a problem?

Grease causes the formation of solid deposits along sewer walls, reducing [capacity](#) and causing blockages. Grease can also accumulate in wet wells, pump stations and screens, causing blockages and equipment failure which often results in expensive repairs.

## How to properly dispose of grease

The most effective way is to keep grease out of the sewer [system](#). Some best practices are:

- Reduce the amount of grease going into the sewer drain by wiping off greasy pots, pans and kitchen utensils
- Don't dispose of salad dressings, creams and butter in the drain
- Clean grease interceptors at regular intervals (recommended when 60 percent capacity is reached)
- Keep outdoor grease containers and dumpsters covered
- Don't use degreasers, emulsifiers and hot water to clean lines. While they [break](#) down grease in the facility, the grease can congeal downstream in sewer lines
- Regular pumping of a grease interceptor is an effective way to keep the interceptor clean

## Detention Basin and Water Quality

Detention basins are usually located in new residential, commercial, and industrial developments, helping control potential flooding. Detention basins require regular maintenance in order to ensure proper function. Poorly maintained basins lose their ability to control flooding and pollution, allowing sediments, fertilizers, and pesticides to enter creeks and streams. Homeowners associations and property owners are responsible for maintaining their detention basins.

## Detention Basin Types

- *Dry detention basins* -- typically dry depressions that temporarily fill with stormwater after a major rain storm. Dry detention basins are less effective at removing pollutants because the stormwater passes through quickly.
- *Wet detention basins* -- typically have a permanent pool of water and more native wetland plant life. These basins are more effective at removing pollutants.
- *Stormwater wetlands* -- similar to wet detention basins, but contain more wetland native plants. They also provide fish and wildlife habitat.

## Water Quality Best Management Practices

Water quality best management practices (BMP) help protect water quality by removing pollutants from stormwater.

- *Stormwater ponds*--have a combination of permanent pool, extended detention or shallow wetland.
- *Stormwater wetlands*--include significant shallow wetland areas to treat stormwater but often may also incorporate small permanent pools and/or extended detention storage.
- *Infiltration practices*--capture and temporarily store stormwater before allowing it to infiltrate into the soil over a two day period.
- *Filtering practices (bioretention)*--capture and temporarily store the stormwater and pass it through a filter bed of sand, organic matter, soil or other media.
- *Open channel practices*--typically designed to capture and treat stormwater within swales formed by checkdams or other means.

## Maintenance Tips

- *Get a copy of your detention basin plan* -- contact the Engineering Department in order to determine what type of detention basin is in your neighborhood.
- *Inspect inlet and outlet pipes* -- check to make sure pipes aren't crumbling or broken; make sure pipes are free of debris and obstructions; check for erosion around the pipes.
- *Inspect for litter and debris* -- check for debris near the inlets and basin twice a year and after major storms. Remove debris and dispose of it with your household trash.
- *Examine for erosion*-- check twice a year and after major storms, filling in damage with topsoil and seeding it with turf grass. If erosion problems continue, contact the Township of Hamilton for further guidance.

- *Inspect vegetation* -- inspect the banks and in the basin, removing dead vegetation. Dead vegetation should be disposed of with other compost materials. Consult with a professional landscape architect for planting information.
- *Mowing* -- the amount will depend on the type of detention basin and desired appearance, but typically basins will only need to be mowed two or three times a year. Do not fertilize the grass in your detention basin.
- *Keep records* -- good records will help you make adjustments to your maintenance program as needed. Keep records of all inspections, including dates, names of inspectors, maintenance activities performed, what was observed, and costs.