

Western New York Stormwater Coalition

A partnership to protect water quality

A number of communities, government agencies and consultants in Western New York have joined together to develop a stormwater management program to protect our waterways and enhance our quality of life. The goal of the Coalition is to utilize regional collaboration to identify existing resources and develop programs to reduce the negative impacts of stormwater pollution.

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Aurora (T)
Blasdell (V)
Boston (T)
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Agencies and Consultants

Erie County DEP / DPW / DSM
Niagara County DPW
SUNY at Buffalo
Buffalo Niagara Riverkeeper
Erie County Soil & Water Conservation District
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CRA Infrastructure & Engineering
Clark Patterson Lee
GHD - Stearns & Wheeler
Hannon Engineering
Malcolm Pirnie
Marquis Engineering
Metzger Civil Engineering
Nussbaumer & Clarke, Inc.
Wm. Schutt & Associates
Wendel Companies

For information on the Coalition and how it is working to address the requirements of the Phase II Stormwater Rule, contact the Erie County Department of Environment and Planning at (716) 858-6370.



Western New York Stormwater Coalition
c/o Erie County DEP
Room 1077
95 Franklin Street
Buffalo, New York 14202

Automotive & Related Industries...

How to Prevent Water & Storm Sewer Pollution

Best Management Practices for:

- Gas Stations
- Auto Repair Shops
- Mechanics
- Auto Detailers
- Auto Dealerships
- Collision & Paint Shops
- Car Rental Agencies
- Car Wash Shops
- Tire Shops
- Auto Salvage



Western New York Stormwater Coalition

Stormwater Pollution

What is Stormwater?

Stormwater is water from rain or melting snow that does not soak into the ground. It flows from rooftops, over paved areas, bare soil, and sloped lawns. As it flows, stormwater runoff collects and transports soil, animal waste, salt, pesticides, fertilizers, oil and grease, debris and other potential pollutants.

What is the Problem?

Rain and snowmelt wash pollutants from streets, construction sites, and land into storm sewers and ditches. Eventually, the storm sewers and ditches empty the polluted stormwater directly into streams and rivers with no treatment. This is known as *stormwater pollution*.

Polluted stormwater degrades our lakes, rivers, wetlands and other waterways. Nutrients such as phosphorous and nitrogen can cause the overgrowth of algae resulting in oxygen depletion in waterways. Toxic substances from motor vehicles, and careless application of pesticides and fertilizers threaten water quality and can kill fish and other aquatic life. Bacteria from animal wastes and improper connections to storm sewer systems can make lakes and waterways unsafe for wading, swimming and fish consumption. Eroded soil is a pollutant as well. It clouds the waterway and interferes with the habitat of fish and plant life.

Fortunately, stormwater pollution can be prevented or minimized by implementing Best Management Practices which are procedures or activities that reduce or eliminate pollutants in stormwater.

How to Prevent Pollution from Automotive & Related Industries

Pollutants from automotive-related activities that enter municipal storm drain systems will harm aquatic life and impair our drinking water supplies. Floating materials, such as debris and automotive fluids, also pollute our lakes and streams and reduce the natural beauty of our waterways. This results in a negative impact on the aesthetics of our natural resources and on tourism/recreation opportunities.

Best Management Practices

- Employee training is essential to reinforce proper disposal practices.
- Minimize use of water to clean floors. A damp mop or wet vac should be used instead. Use kitty litter to clean up an oil spill and dispose of as hazardous waste.
- Tanks, pumps, fittings, pipes and containers should be inspected routinely for integrity and leaks.
- Never hose down bays into storm drains. Contain wash water and dispose of through sanitary sewer.
- Recycle grease and oil—DON'T pour into sinks, floor drains or parking lots.
- Identify the nearest storm drain and keep fluids away from it.
- Use high volume, low pressure spray paint equipment to achieve high transfer efficiency.
- Dispose of solvent only when it loses its effectiveness, not just because it looks dirty.
- Use mechanical stripping methods instead of paint removers. Give leftover paint to customers or donate to trade schools.

Best Management Practices (continued)

- Combine transmission and brake fluid. It is not cost effective to recycle these separately.
- Keep used oil separate from parts cleaning solvents, antifreeze and fuel.
- Recycle oil, antifreeze, tires and batteries.
- Fit all storage tanks with spill containment and overflow prevention system.
- Never pour liquids or dry materials down a storm drain.
- Use drip pans to capture fluids. Use absorbent cleaning agents instead of water to clean work areas.
- Collect bulk grease in containers and contact a firm to recycle waste into a useful by-product.
- Flush parts with dirty solvent first and then rinse clean with virgin solvent.
- Pour wash water into a janitorial sink—NOT outside in a parking lot, alley or sidewalk/street.
- To prevent storm water discharge, avoid working in outdoor areas. If this isn't possible, grade, pave or berm outdoor areas to collect discharge in a sanitary sewer drain.
- Eliminate the use of chlorinated solvents, which are highly toxic and hard to dispose of. Use detergents or water based parts cleaners.
- Capture crusher fluids to prevent spillage. Do not allow fluids to drain into the ground.

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Concrete & Mortar Operations... How to Prevent Water & Storm Sewer Pollution

Best Management Practices for:

- **Masons & Bricklayers**
- **Home Builders**
- **General Contractors**
- **Developers**
- **Concrete Providers**
- **Sidewalk Construction Crews**
- **Patio**
- **Construction Crews**



WNY Stormwater Coalition

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Fortunately, stormwater pollution can be prevented or minimized by implementing Best Management Practices which are procedures or activities that reduce or eliminate pollutants in stormwater.

How to Prevent Pollution from Concrete & Mortar Work

Fresh concrete and mortar that washes into lakes and streams via stormwater are toxic to fish and the aquatic environment.

Best Management Practices

General Practices

- Identify concrete mixer washout areas in your yard , away from storm sewers, ditches and waterways. Allow washwater to flow into a temporary waste pit; dispose/recycle hardened concrete.
- Do not use diesel fuel as a lubricant on concrete forms, tools or trailers.
- Secure open bags of cement and keep cement powder away from streets, gutters, storm sewers, rainfall and runoff.
- Protect both dry and wet materials from rainfall and runoff by storing under cover. Avoid storing materials near storm sewers , ditches and waterways.

Best Management Practices

Operational Practices

- Mix only enough concrete or mortar for a two hour period.
- Use tarps or heavy plastic under mixers.
- Protect fresh applications from rainfall and runoff until material is dry.
- When cleaning, sweep or wash fines onto a dirt area, not a street, gutter or storm sewers.
- Never dispose or washout into the street, gutter, storm sewers, ditch or waterways.
- Wash chutes onto dirt areas to prevent contaminated water from flowing into streets, gutters, storm sewers or ditches.
- Block nearby storm sewers with sandbags if necessary.



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**Construction Site
Stormwater
Runoff Control...
How to Prevent
Water & Storm Sewer
Pollution**

**A Summary of Best
Management Practices for:
The Construction Industry**



WNY Stormwater Coalition


County of Erie
Department of Environment & Planning
Environmental Compliance Services

BMPs for All Construction Sites

Basic pollution prevention practices can significantly reduce the amount of pollution leaving construction sites. When exposed to the elements, construction materials, debris, trash, fuel, paint and stockpiles become pollution sources when it rains. The following practices should be implemented on site:

- Keep potential sources of pollution out of the rain to the maximum extent possible (e.g. inside a building, under a tarp, sealed in containers).
- Clearly identify a protected, lined area for concrete truck washout. This area should be located away from streams, storm drain inlets or ditches and clean out periodically.
- Park, refuel and maintain vehicles and equipment in a designated area on the site to minimize the area exposed to possible spills and fuel storage. Keep spill kits close by and clean up spills and leaks immediately, including those on pavement and earth surfaces.
- Practice good housekeeping. Keep the construction site free of litter, construction debris and leaking containers.
- Never hose down paved surfaces to clean dust, debris or trash as the water could wash directly into storm drains or streams. Sweep up materials and dispose in the trash. Never bury trash or debris.
- Dispose of hazardous materials promptly and properly.

Stormwater and the Construction Industry

As stormwater flows over a construction site, it picks up pollutants such as sediment, debris and chemicals. High volumes of stormwater can also cause streambank erosion and have a negative impact on aquatic habitat. Preventing stormwater pollution is an important responsibility at all construction sites.

Best Management Practices

The following information provides a summary of guidance on a variety of BMPs typically used on construction sites.

Construction Phasing

- Sequence construction activities so that soil is not exposed for long periods of time.
- Schedule or limit grading to small areas.
- Immediately seed areas that will be exposed for 7 days or longer with annual rye
- Install sediment control practices before any soil disturbance begins.
- Schedule site stabilization activities immediately after the land has been graded to its final contours.

Storm Drain Inlet Protection

- Use appropriate methods to protect the storm drain to filter out trash and debris
- If inlet filters are used, maintain them regularly.

Silt Fence

- Inspect silt fences after each rainstorm and weekly
- Make sure the bottom of the silt fence is buried in the ground 6 inches.
- Make sure stormwater does not flow around the silt fence during storm events.
- Don't place silt fence in the middle of a waterway.
- Attach fence securely to stakes. Stakes should be on the downslope side of the fence.

Protect Natural Features

- Identify and protect areas where existing vegetation, such as trees, should not be disturbed by construction activities .
- Protect streams, stream buffers, wild woodlands, wetlands or other sensitive areas from any disturbance or construction activity with fencing or by clearly marking the



Vegetative Buffers

- Protect and install vegetative buffers along waterbodies to slow and filter stormwater runoff.
- Maintain buffers by replanting periodically to ensure their effectiveness (mowing discourages growth of woody vegetation, which actually takes up more runoff).

Slopes

- Rough grade or terrace slopes.
- Break up long slopes with sediment barriers or under drain.
- Divert stormwater away from slopes.

Dirt Stockpiles

- Cover or seed all dirt stockpiles.

Construction Entrances

- Remove mud and dirt from the tires of construction vehicles before exiting the construction site onto paved roadways, but do not use water.
- Inspect construction entrance to ensure it does not become buried in soil (Entrance should be maintained with gravel to retain soil on-site).

Site Stabilization

- Vegetate, mulch or otherwise stabilize all exposed areas as soon as land alterations have been completed.

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Pesticide Application, Lawn Care and Landscaping...

How to Prevent Water & Storm Sewer Pollution

Best Management Practices for:

- Landscapers
- Pesticide Applicators
- Lawn Maintenance Crews
- Developers
- Home Builders
- Patio & Deck Contractors
- Homeowners
- Construction Inspectors



Western New York Stormwater Coalition

Stormwater Pollution

What is Stormwater?

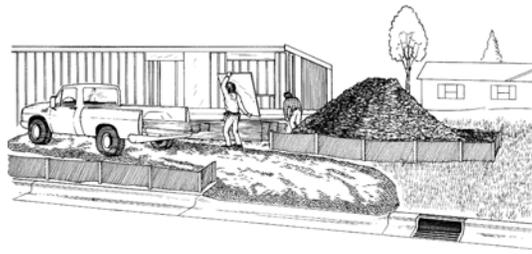
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How to Prevent Pollution from Landscaping and Lawn Care

Best Management Practices

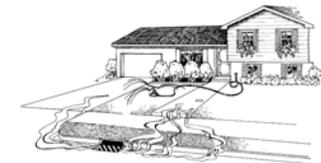
- Cover and contain topsoil and mulch during installation
- Plant rain gardens of native drought- and pest-resistant plants to collect and filter rainwater
- Plant vegetated filter areas or swales to trap pollutants along streets and driveways
- Install pervious pavement and gravel driveways to reduce stormwater runoff
- Do not drain swimming pools to storm drains or road ditches
- Install vegetative buffers along streams and drainage pathways
- Compost or mulch leaves and yard debris rather than hauling to dumps
- Direct downspouts away from driveways or storm drains, or install rain barrels to collect roof runoff
- Maintain septic systems to prevent failure and inspect every 3 years
- Sweep up litter and debris from driveways and parking lots rather than hosing debris into storm drains
- Install and maintain sediment and erosion control measures during soil disturbing activities

How to Prevent Pollution from Pesticide Applications

Everything you apply to the lawn can potentially contaminate surface and ground waters.

Best Management Practices

- Triple rinse and recycle empty pesticide and fertilizer containers
- Use proper spray notification signage and comply with neighbor notification regulations
- Comply with NYS Department of Environmental Conservation pesticide application regulations
- Use Integrated Pest Management (IPM) to avoid runoff or leaching from excess chemical applications
- Avoid using chemicals near waterways or storm drains
- Dispose of unused or excess pesticides in accordance with NYS DEC and US EPA regulations
- Clean up spills immediately and properly dispose of cleanup materials
- Fill tanks on a gravel surface, away from storm drains, sewers or ditches
- Avoid spraying in windy conditions or when rain is forecast
- Provide spill containment at storage facilities and store chemicals away from floor drains



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Hospitals, Medical Treatment Centers & Healthcare Facilities...

How to Prevent Water & Storm Sewer Pollution

Best Management Practices for:

- Hospitals
- Satellite Medical Centers
- Blood Collection Labs
- Dentists & Dental Labs
- Clinical Laboratories
- Veterinarians



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County of Erie
Department of Environment & Planning
Environmental Compliance Services

How to Prevent Pollution from Medical Waste

Medical and hospital waste, like household waste, is largely recyclable. Only 10-15% is regulated medical waste and less than 5% is hazardous waste.

Best Management Practices

Recommended Practices

- Whenever possible, use mercury-free medical products and cleaning agents, which don't contribute to increasing levels of mercury in streams and watersheds. Do not place mercury-containing products (thermometers) in medical waste containers. Products containing mercury should be collected in a single dedicated area and recycled or eliminated as hazardous waste.
- Sink and hopper traps should collect chemicals and other medical waste. They should be opened, cleaned and any combination of water and chemicals should be consolidated (depending on nature of compounds) and recycled.



Best Management Practices

Operational Practices

- Do not mix x-ray fixer with developer. Waste developer may normally be flushed down the drain; but if fixer and developer are mixed, the resulting solution cannot be flushed. Some x-ray film processing units automatically mix fixer and developer; the vendor can provide information on adapter kits that keep fixer separated from the developer.
- Support the development and use of environmentally safe materials, technology and products. Eliminate unnecessary "red bagging."
- Eliminate non-essential incineration of medical waste. Recycle mercury.
- Waste amalgam caught in plumbing traps must be shipped off to a permitted recycler. If amalgam must be sterilized before shipment to recycler, no method that utilizes heat should be used. The heat will cause the mercury to volatilize and be released to the environment.
- Phase out use of mercury, PVC plastics and persistent toxic chemicals in healthcare.

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Western New York Stormwater Coalition
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Mobile Cleaners: Carpet, Upholstery Cleaners, Janitorial Service Providers...

How to Prevent Water & Storm Sewer Pollution

Best Management Practices for:

- Carpet Cleaners
- Upholstery Cleaners
- Drapery Cleaners
- Window Washers
- Janitorial & Housekeeping Service Providers
- High Pressure, Steam Cleaners



WNY Stormwater Coalition

Stormwater Pollution

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County of Erie

Department of Environment & Planning
Environmental Compliance Services



How to Prevent Pollution from Commercial Cleaning Agents

Although mobile cleaners and pressure washers discharge waste water at various locations, the following practices are recommended to eliminate discharge into storm sewers.

Best Management Practices

General Practices

- Waste resulting from cleaning activities cannot be discharged into a storm drain.
- Mobile cleaners should have the equipment, materials and personnel to handle a spill. Take preventative action to act quickly to reduce illegal discharge.
- If a spill occurs, use environmentally-friendly products (e.g. kitty litter) to contain the spilled materials. Protect storm drains. Report all spills and discharges that cannot be contained to local authorities for their help.

Best Management Practices

Operational Practices

- All water and detergents, even those that are labeled “nontoxic” or “biodegradable,” should be filtered first to remove any solids before discharging into a sanitary sewer. Solids may clog pipes. The solids may be thrown into the garbage, unless they have been contaminated with hazardous materials.
- Washwater from carpet, drapery or furniture cleaning must be discharged into a sink, toilet or other drain connected to a sanitary sewer.
- Never throw washwater into a street, gutter, parking lot or storm drain.
- Dry cleanup first, then wash without soap and then with soap to reduce contaminated runoff.
- Avoid power washing surfaces that may contain lead paint.



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**Pools, Fountains
and Spas ...
How to Prevent
Water & Storm Sewer
Pollution**

Best Management Practices for:

- Homeowners
- Condominium & Apartment Complexes
- Hotels, Motels and Inns
- Schools
- Fitness Clubs



WNY Stormwater Coalition

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Stormwater Pollution

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County of Erie

Department of Environment & Planning
Environmental Compliance Services



How to Prevent Pollution from Pools, Spas & Fountains

Although we enjoy the fun and relaxing times in them, the water used in swimming pools, spas and fountains can cause problems for our creeks and lakes if not disposed of properly. Draining your pool, spa or fountain improperly can result in chlorine, suspended solids and nutrients entering surface water (streams and lakes).

Best Management Practices

Best Management Practices or BMPs are procedures that help to prevent pollutants like chlorine and sediment from entering storm drains.

Draining Pools, Spas and Fountains:

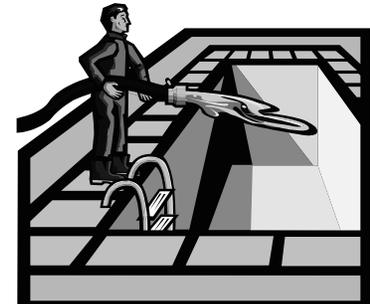
- Never discharge pool, spa, or fountain to a street or storm drain; discharge to a sanitary sewer cleanout.
- If possible, when emptying a pool, spa or fountain, let chlorine dissipate for a few days and then recycle/reuse water by draining it gradually onto a landscaped area.
- Drain pools, spas and fountains slowly, using a low volume pump or siphon.

Best Management Practices (continued)

- Make sure water used to acid wash pool, spa or fountain is neutralized prior to discharge. Soda ash can be used to keep the pH between 6.0 and 7.0 before discharging.
- Do not use copper-based algacides. Control algae with alternatives such as sodium bromide.

Filter Cleaning:

- Never clean a filter in the street or near a storm drain. Rinse cartridge and diatomaceous earth filters onto a dirt area and spade filter residue into soil. Dispose of spent diatomaceous earth in the garbage.
- If there is no suitable lawn area, call your local wastewater treatment plant for instructions on discharging filter backwash or rinse water to the sanitary sewer.



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Food & Restaurant Industries...

How to Prevent Water & Storm Sewer Pollution

Best Management Practices for:

- Restaurants
- Delis and Bakeries
- Grocery Stores
- Convenience Stores
- Food Stands
- Institutional & Workplace Cafeterias



WNY Stormwater Coalition

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How to Prevent Pollution from Food & Restaurant Industries

Fats, oil, grease, floor solvents, cleaning agents, cigarette butts, food waste, paper napkins and styrofoam all contribute to the pollution of our creeks and waterways. By implementing proper cleaning and waste management practices the introduction of these pollutants to our waterways can be avoided.

Food and restaurant-related pollutants invade storm drain systems and increase bacteria levels, which harm aquatic life, cause beach closures and impair our drinking water supplies. Floating materials also pollute our lakes and streams and reduce the natural beauty of our waterways. This results in a negative impact on aesthetics of our natural resources and tourism/recreation opportunities.

Best Management Practices

General Cleaning Operations

- Clean floor mats, filters and garbage cans in a slop sink, floor drain or proper outside area—NOT the parking lot, alley or sidewalk/street.
- Pour wash water into a janitorial sink—NOT outside in a parking lot, alley or sidewalk/street.
- Use the least toxic cleaning products available, and use cleaning products sparingly.
- Dispose of cleaners (solvents, floor cleaners and detergents) and cleaning rags properly
- Use dry methods for spill clean-up—SWEEP instead of hosing. Use cat litter to absorb spills.

Best Management Practices (continued)

Solid Waste Handling & Storage

- Keep dumpster lids closed and the areas around them clean. Do not fill them with liquid waste or hose them out.
- Use plastic bags, tied off, to keep dumpsters free of food debris. Never place liquid waste or leaky garbage bags into a dumpster.
- Have clean-up materials readily accessible near the dumpster and loading dock areas in case of an accidental spill.
- Keep dumpster and dumpster enclosures locked to prevent illegal dumping.
- Keep outdoor litter from accumulating by providing trash receptacles and encourage employees and patrons to use them.
- Sweep outside areas regularly and put the debris into the garbage instead of sweeping/hosing into the parking lot or street.

Grease Management

- Install pretreatment equipment, such as a grease interceptor.
- Clean grease traps regularly.
- Collect bulk grease in containers and contact a firm to recycle waste into a useful by-product.
- Don't pour grease into sinks, floor drains, trash bins, street gutters, or parking lots.
- Inform employees about these Best Management Practices and include this information in training programs.



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Roadwork and Paving... How to Prevent Water & Storm Sewer Pollution

Best Management Practices for:

- Asphalt Paving Providers
- General Contractors
- Developers



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Environmental Compliance Services

How to Prevent Pollution from Roadwork and Paving

Road paving, surfacing and pavement removal activities contribute to stormwater pollution because they take place on roads where stormwater runoff can be contaminated with asphalt, saw-cut slurry or excavated material.

Best Management Practices

General Practices

- Protect both dry and wet materials from rainfall and runoff by storing under cover. Avoid storing materials near storm sewers, ditches and waterways.
- Schedule excavation and grading work for dry weather.
- Implement NYSDEC approved erosion and sediment control BMPs for embankments.
- Recycle used oil, concrete and waste asphalt.

Equipment Maintenance

- Maintain all vehicles and heavy equipment regularly; Inspect frequently for leaks.
- Conduct all vehicle and equipment maintenance and refueling at one location, away from storm drains.
- Perform major vehicle and equipment repairs and washing off site.
- Do not use diesel oil to lubricate equipment or parts.

Best Management Practices

Asphalt and Concrete Removal

- After breaking up paving, be sure to remove all chunks and pieces. Recycle them at a crushing company.
- Shovel or vacuum saw-cut slurry and remove from site.
- Cover or barricade storm drain inlets during saw-cutting.

During Construction

- Cover catch basins and maintenance access points when applying seal coat, slurry seal and fog seal.
- Use check dams, ditches or berms to divert runoff around excavations.
- Never wash excess materials into a street, gutter or storm drain.
- Avoid over-application by water trucks for dust control.

