



New State Storm Water Rules:

WHAT MUNICIPALITIES NEED TO KNOW

Detecting & Eliminating Illicit Discharges

Storm water runoff in urban areas is a major – and visible – source of pollutants in our streams and lakes. Whenever rain or melting snow runs down the street and into the storm drains, the water carries sediment, leaves, and other debris, road deicing salt, oil leaked from cars and many other pollutants.

However, other discharges into a municipal storm drain are less visible but just as damaging. These so-called “illicit discharges” can include spills, dumping and improper disposal of wastes, improper storage of materials, various types of wash water, septic system failures, or sanitary sewer overflows. Illicit discharges can also result from unauthorized connections between sanitary or process wastewater drains and the storm sewers system.

Eliminating these non-storm water discharges to storm drains is an important method of improving water quality in local streams and lakes. This fact sheet provides guidance to municipalities seeking to control or eliminate illicit discharges to their storm water systems. It describes Best Management Practices (BMPs) that can become part of meeting a permit requirement or ordinance for a municipal separate storm sewer system pollution control program.



Many communities with storm sewer systems are now required to obtain state permits to discharge storm water to streams and lakes. These permits are required by federal and state laws, and are administered by the Wisconsin Department of Natural Resources. The permit program has been phased in over time. Federal rules that require storm water permits are referred to as Phase I or Phase II rules. Phase I mainly affected large communities such as Milwaukee and Madison. Phase II is now affecting many more communities.

The state rule is found in Chapter NR 216 of the WI Administrative Code. This fact sheet refers specifically to Wisconsin's NR 216 rule, but be aware that the “Phase II” term is often used to refer to required permit programs.

Communities must meet the requirements of six “minimum control measures.” These are:

- Public outreach and education
- Public participation and involvement
- Illicit discharge detection and elimination
- Construction site pollution control
- Post-construction storm water management
- Pollution prevention (municipal good housekeeping)

Detecting & Eliminating Illicit Discharges

Illicit discharges can come from well defined “point sources” or from activities that are not as obvious. Common sources of illicit discharges include:

- **Improper sanitary sewer connections**
- **Spills and dumping of waste materials into storm drains**
- **Uncontrolled outdoor washing and similar activities generating wastewater**
- **Poor material/waste handling and storage at industrial and commercial facilities**

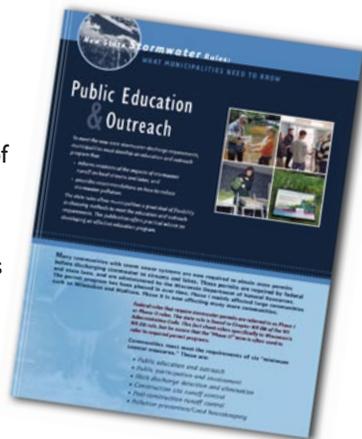
Municipalities are required to develop, implement, and enforce a program to detect and eliminate illicit discharges to the storm sewer system. In addition, illicit discharge BMPs can be effective in preventing these discharges from municipal, commercial, industrial, and residential sources.

Steps to Prevent Illicit Discharges

Once pollutants have entered the storm sewer system, it is very difficult and expensive to remove them. That’s why municipalities should employ a wide range of BMPs for detection and prevention. Some of these BMPs involve changing the behavior of individuals or businesses. This approach is cost effective and uses non-engineering approaches. Other BMPs will require a municipality to understand to detect illicit discharges. Illicit discharge BMPs fall into the following categories:

Public Education

Inform and educate the public about storm water pollution, proper management of materials and encourage the public to change behaviors that contribute to storm water pollution. (See: New State Storm Water Rules – Public Education and Outreach.)



Municipal Operations and Pollution Prevention

Manage municipal garages and yards to minimize pollution from areas such as salt storage, vehicle fueling and maintenance activities.



Inspection and Field Screening

Implement inspection, field screening, surveillance and monitoring procedures to determine the presence of illicit discharges and compliance and non-compliance with regulations, and document these efforts.



Ordinances and Regulations

Develop and enforce municipal ordinances and permits to control and eliminate illicit discharges into the storm sewer system.



Identifying and Implementing BMPs

While every municipality's storm water management system is unique, the approaches taken to identify and eliminate illicit discharges share common elements. Here are some steps for organizing your efforts:

Know your storm water sewer system

NR 216 requires an accurate map of your storm water drain and conveyance system, but this is only a first step. You should also know the land use and associated pollutants entering the system from each sub-watershed, and designate monitoring locations to identify sources of illicit discharges.

Identify illicit discharge sources

Monitoring storm sewer outfalls for flows during dry periods is the most effective way to locate non-storm water discharges. Municipalities will need to develop and implement procedures to screen their outfalls to detect illicit discharges. In some cases (e.g. industrial floor drains connected to a storm drain) an on-site facility assessment may be needed. However, illicit discharges can also occur when it is raining, and these are best identified by surveying the types of businesses in each sub-watershed and looking for activities that could contribute pollutants to the storm sewer system.

Choose the best BMPs

Illicit discharge BMPs should be feasible, cost-effective, and acceptable to storm system users. Low-tech solutions, such as changes in behavior by businesses and homeowners can have a large impact if widely-adopted. Other approaches, such as improved leaf collection, might require modifying current municipal operations. For illicit sanitary connections or industrial discharges, an enforcement program to remove the discharge will be required.

Implement BMPs for Municipal Operations and Pollution Prevention

A municipality's own operations should be a showcase for effective best management practices. Whether it is runoff from a maintenance yard or erosion control on municipal construction sites, a municipality should have standard operating procedures that ensure no illicit discharges are taking place. It can be beneficial to have an outside expert assess the status of municipal operations, and identify problems that might be overlooked by staff.

Educate the public and businesses

Changing people's behavior can be challenging. Public awareness of storm water management issues is usually limited to preventing flooding of homes and streets. Raising awareness about how residential commercial and industrial activities can contribute to storm water pollution is an ongoing task. Public education should be combined with realistic options and achievable goals for reducing pollution, and should encourage citizens to take an active role in pollution prevention. Evaluating the effectiveness of public awareness and participation provides important indicators of success. Ultimately, being able to measure improvements in storm water quality shows the impact of changed behavior, and rewards the "early adopters" that serve as examples to others. Municipalities should provide a means for the public to report incidents of illicit discharges with appropriate follow up by the municipality.





Storm Water BMPs for Detecting and Eliminating Illicit Discharges

Source	BMP	Implementation	Benefit
Residential	Property management	Outreach activities	Prevention of pollution from outdoor household activities
Industrial & Commercial	Property management	Facility audits; spill prevention plans; facility storage & material handling procedures	Prevention of pollution from outdoor activities & storage
Industrial & Commercial	Disconnect illegal discharges	Facility audits; inside drain disconnects	Preventing of illicit discharges to inside drains that should go to sanitary sewer
Municipal	Sanitary system maintenance	Inspection & infiltration prevention	Prevention of sanitary system overflows
Area-wide	Hazardous chemical management	Waste chemical collection program	Reduced occurrence of illegal dumping & spills
Area-wide	Illicit discharge identification	Spill reporting hotline; outfall monitoring	Locate and remediate periodic discharge sources
Storm Water System	Regular system inspection	Staffing, scheduling & reporting	Identify sources of illicit discharges; Identify needed maintenance
Storm Water System	Public outreach and education	Public meetings; outreach brochures; incentives	Promote voluntary BMPs; Provide support for implementation of municipal BMPs
Storm Water System	Regulation	Storm water ordinances and permits	Provide authority to enforce BMPs implementation

Going Beyond the Requirements

The illicit discharge BMPs can have a significant system-wide impact. Implementation of BMPs to reduce pollution from non-municipal sources can be accomplished by combining public education with ordinances that regulate specific activities.

- While many industries are regulated individually under state storm water permits, identifying storm drain connections from industrial sites can reveal potential industrial permit violations, and lead to reductions in illicit discharges.
- Other commercial activities can create contamination concerns. Sources of runoff pollution from commercial sites include dumpster drainage, and runoff from parking lots. Where appropriate, educate targeted business audiences on methods of storm water pollution prevention.
- Residential properties provide many opportunities to reduce contaminated flows entering the storm drain system. Examples of BMPs for homeowners include composting leaves and grass clippings, limiting the use of lawn and garden fertilizers and pesticides, and using rain gardens for catching and filtering water from downspouts, driveways, and sidewalks.





Preventing Illicit Discharge: *Additional Information*

Municipalities are encouraged to take advantage of these and other resources available from local and national sources to identify BMPs for their storm water management systems.

Links to detailed information on Wisconsin runoff management programs
<http://runoffinfo.uwex.edu/>

WI-DNR Municipal Storm Water Program
www.dnr.state.wi.us/org/water/wm/nps/stormwater/muni.htm

The US-EPA “National Menu of Best Management Practices” for municipal storm water pollution prevention.
www3.uwm.edu/Dept/shwec/publications/cabinet/other/EPANationalBMPS.pdf

The US-EPA “Pollution Prevention & Good Housekeeping for Municipal Operations”
www3.uwm.edu/Dept/shwec/publications/cabinet/other/EPAMunicipalSWP2BMPs.pdf

The Center for Watershed Protection “Illicit Discharge Detection & Elimination Manual”
www3.uwm.edu/Dept/shwec/publications/cabinet/other/CWPillicitDischargeDetectionManual.pdf

US-EPA Urban Storm Water Best Management Practices
www.epa.gov/OST/stormwater/

The Center for Watershed Protection
www.cwp.org/

This publication is available from county UW-Extension offices, Cooperative Extension Publications 1-877-947-7827, and from DNR Service Centers.

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