Stormwater Best Management Practice

Illicit Discharge Detection and Elimination Program Development

Minimum Measure: Illicit Discharge Detection and Elimination and the Subcategory
Subcategory: Developing an IDDE Program

Description

Illicit discharges generally include any discharge into a municipal separate storm sewer system (MS4) permitted storm drain that does not consist entirely of stormwater. Illicit discharges are a problem because, unlike wastewater that flows to a treatment plant, stormwater generally flows to waterways without any additional treatment. Illicit discharges can contain pathogens, nutrients and various toxic chemicals. Common examples of illicit discharges include concrete or paint washout, waste from restaurants and mechanics, trash, and sewage.

Exceptions are referred to as "allowable discharges," and each MS4's permit outlines them. They typically include water from firefighting activities and residential car washes, potable water, and discharges from facilities already under a National Pollutant Discharge Elimination System permit.

Program Development

MS4s need to develop an illicit discharge detection and elimination (IDDE) program, which primarily includes creating:

- Storm sewer system maps
- Ordinances prohibiting illicit discharges
- Inspection and enforcement programs
- Education programs on the hazards associated with illicit discharges
- Plans to detect and address illicit discharges

As the name "IDDE" suggests, detecting and addressing illicit discharges are the main goals of an IDDE program. Illicit discharges have two modes of entry into the MS4: direct or indirect entry. Direct entry means the source connects directly to the MS4 through a pipe or drain-type conveyance. Examples of direct discharges are sanitary sewer cross connections or straight pipes intentionally connected to the MS4. Indirect entry occurs when the source of the illicit discharge flows into the MS4 via

Potential illicit discharge flowing out of a concrete outfall. Confirming an illicit discharge may require sampling or other investigative methods to determine the pollutant and responsible party.

Credit: Photo by Pikrepo

storm drain inlets or infiltration through cracks or joints in the storm sewer network. Indirect entry is far more common than direct entry. Examples of sources of indirect entry include failing septic systems, sanitary sewer overflows, groundwater seepage, spills and dumping, irrigation, and washing activities. The *Illicit Discharge Detection and Elimination* guidance manual (see link below) contains additional information.

Sewage has the greatest potential to produce direct illicit discharges within any urban sub-watershed, regardless of the diverse land uses that the sub-watershed comprises. The most common sewage-related direct discharges are broken sanitary sewer lines, cross connections and straight pipe discharges. There are a variety of techniques to locate and eliminate illegal sewage connections, including tracing sewage flows from the stream or outfall back up the sewer system or conveyances to reach the problem connection. Sewage can also be linked to significant indirect illicit discharges in the form of sanitary sewer overflows, sewage infiltration/inflow and sewage dumping from recreational vehicles.

An effective IDDE program should be proactive to prevent and eliminate illicit discharges through

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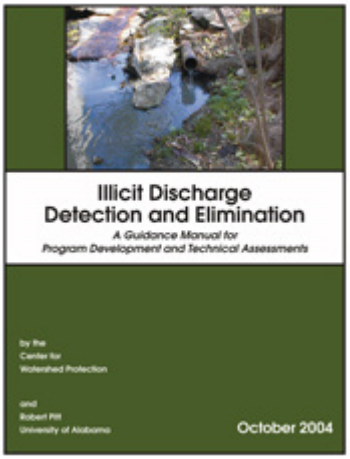
education, training and enforcement. However, the program should also be reactive to address any spills and other illicit discharges to the storm drain system that it detects.

It is also important for MS4s to develop the program to match the needs and concerns of the local community. MS4s typically have flexibility to implement their IDDE programs to address community-specific problems while meeting the specific permit requirements.

EPA developed several documents for MS4s working to develop an IDDE program and to address non-stormwater discharges in their community:

- *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* is a comprehensive manual outlining practical, low-cost and effective techniques for stormwater program managers and practitioners. The guidelines include details on creating and managing other aspects of an IDDE program, timelines that estimate how long program implementation will take, information on estimating program costs in terms of capital and personnel expenses, and types of testing to detect stormwater illicit discharges. This manual provides valuable guidance for communities and others seeking to establish IDDE programs.



- EPA's stormwater *Phase II fact sheet on the IDDE minimum control measure* provides examples of illicit discharges and general guidance for developing an IDDE program's framework. This fact sheet provides helpful guidance for new programs and/or staff looking to start an IDDE program.
- EPA's Trash-Free Waters Web site and *Aquatic Trash Prevention National Great Practices Compendium* are useful resources for educating the public about impacts and ways to prevent trash from entering waterbodies. The compendium highlights outstanding activities, technologies and programs that prevent trash from entering the aquatic environment and/or that reduce the overall volume of trash generation.
- EPA produced the Illegal Dumping Control fact sheet to give communities a toolkit of effective practices for combating illegal dumping. The fact sheet discusses the importance of not only abatement and enforcement, but also public education and providing bulk trash pickup services.
- EPA developed a fact sheet on controlling non-stormwater discharges to the storm drain system. This fact sheet provides information on the potential environmental and public health concerns associated with non-stormwater discharges and means to detect and eliminate any non-stormwater discharges, such as sewage or process water discharges.
- *Community Solutions for Voluntary Long-Term Stormwater Planning* describes how to develop a comprehensive long-term community stormwater plan that integrates stormwater management with a community's broader plans for economic development, infrastructure investment and environmental compliance. Through this approach, communities can prioritize actions related to stormwater management as part of capital improvement plans, integrated plans, master plans or other planning efforts.
- EPA developed an integrated planning framework that offers a voluntary opportunity for a municipality to develop an integrated plan to meet multiple Clean Water Act requirements. An integrated plan is a process that identifies efficiencies from separate wastewater and stormwater programs to best prioritize capital investments and achieve our human health and water quality objectives. This approach can also lead to more sustainable and comprehensive solutions, such as green infrastructure, that improve water quality and provide multiple benefits that enhance community vitality.
- EPA provides illicit discharge ordinances as examples for local governments. They include language to address general illicit discharges, as well as illicit connections from industrial sites. EPA borrowed the language from a number of ordinances, and communities will need to assess what enforcement methods are appropriate for their areas.

- EPA has developed fact sheets to help communities address cross-contamination of stormwater with wastewater. Wastewater can impact stormwater quality through sanitary sewer overflows, cross connections, and failing or improperly maintained septic systems.

Other Online Stormwater Resources

There are many successful IDDE programs around the country. Newly developed or established programs looking to expand their capabilities should look to other programs' successes to continue to build on existing techniques and methods. Examples of municipal IDDE programs include the following:

- Berkeley County, South Carolina, has developed extensive guidance and multiple methods for the public to report illicit discharges, including a phone number, email address and social media accounts.
- King County, Washington, has developed a source-tracing guidance manual that outlines how municipal staff respond to observed and reported illicit discharges.

Many local governments and watershed groups have developed fact sheets for businesses that have high potential to create illicit discharges. One such example is the Keep It Clean Partnership—a coalition of Phase II MS4s in Boulder County, Colorado—which developed industry-specific fact sheets explaining how local businesses can best manage restaurants, pressure washers, landscapers, carpet cleaners and car washes to protect local waterways.

IDDE Best Management Practice Fact Sheets

EPA has developed the following fact sheets, which describe best management practices and generally provide applicability, implementation and effectiveness information to help municipal stormwater and construction site operators comply with the stormwater Phase II requirements.

Developing an IDDE Program

- Preventing Stormwater Contamination from Sanitary Sewage

Trash and Illegal Dumping

- Developing a Used Oil Recycling Program
- Illegal Dumping Control

Decentralized Wastewater

- Preventing Stormwater Contamination from Septic System Failure

Public Reporting

- Community Hotlines

Additional Information

Additional information on related practices and the Phase II MS4 program can be found at EPA's National Menu of Best Management Practices (BMPs) for Stormwater website

Disclaimer

This fact sheet is intended to be used for informational purposes only. These examples and references are not intended to be comprehensive and do not preclude the use of other technically sound practices. State or local requirements may apply.