

MCM #3 ILLICIT DISCHARGE DETECTION AND ELIMINATION ACTION PLAN

Introduction

The purpose of this illicit discharge detection and elimination action plan is to create guidance manual for the execution of the Portage County Storm Water Program illicit discharge detection and elimination (IDDE) to prevent it from polluting the waters of the state. This action plan covers the Minimum Control Measure 3 (MCM #3) – IDDE, which is one of six minimum control measures permittees/operators of a Phase II regulated small municipal separate storm sewer system (MS4) are required to include in their Storm Water Management Program (SWMP) to meet the conditions of the National Pollutant Discharge Elimination System (NPDES) permit.

Background of Phase II MS4

The United States (US) US Environmental Protection Agency (EPA) promulgated Phase I of its storm water program under the National Pollutant Discharge Elimination System (NPDES) permit provisions of the Clean Water Act in 1990. Phase I was designed to address storm water runoff from “medium” and “large” municipal separate storm sewer systems (MS4s) generally serving populations of 100,000 or greater, construction activity that would disturb five or more acres of land, and 10 categories of industrial activity..

In 1999, The United States (US) Congress enacted the Phase II regulation to expand the existing National Pollutant Discharge Elimination System (NPDES) storm water Phase I program to address storm water discharges from small municipal separate storm sewer systems (MS4s) (those serving less than 100,000 persons) and construction sites that disturb one to five acres. The Phase II program regulates discharges from small MS4s located in “urbanized areas” (as delineated by the US Census Bureau’s decennial census) and from additional small MS4s designated by the permitting authority. In the state of Ohio, the Ohio EPA is the regulating authority responsible for the Phase II Storm Water regulations and enforcement.

One element of the NPDES Storm Water Phase II MS4 regulation was Minimum Control Measure 3 (MCM #3) – Illicit Discharge Detection and Elimination, which requires permittees to develop a strategic plan to detect and eliminate illicit discharge into the public storm sewer system from entering the waters of the states and prevent pollution.

The Portage County Storm Water Phase II MS4 permit issued by the Ohio EPA requires the development of an IDDE plan in compliance with the provisions of the Federal Water pollution Control Act, as amended (33 U.S.C. 1251 et. Seq. hereafter referred to as “the Act” to discharge

from the outfalls and receiving surface waters of the state identified in their Notices of Intent (NOI) Application form on file with Ohio EPA in accordance with the conditions specified in the permit to achieve sustainable water quality.

This action plan is based on, but not limited to the Phase II Storm Water MS4 requirement or scope of services outlined in the Portage County Storm Water Program contractual agreement between the Portage County Combined General Health District (PCHD) and the Portage County Board of Commissioners (PCBC) for storm water services. The PCHD is responsible for the execution of the MCM #3 of the six minimum control measures required by the permit. The Portage County Storm Water program extends beyond the Phase II MS4 area, thus, this action plan, which is road map designed primarily to achieve the Phase II MS4 MCM #3 requirements will be applied in non-Phase II MS4 areas as well to address overall Portage County Storm Water program needs.

Program Goals of MCM #3 - IDDE

The goal of the IDDE plan is to create guidelines to determine the type and sources of non-storm water related illicit discharges entering the waters of the state, develop methods to find, fix, and prevent them from polluting the waters of the state during the permit term.

Program (MCM #3) Objectives

The objective of the illicit discharge detection and elimination under minimum control measure three is to have regulated, small MS4 operators gain a thorough awareness of their systems and position themselves to take necessary action on eliminating illicit discharges. PCHD will facilitate this awareness, which will allow Portage County Storm Water program to determine the types and sources of illicit discharges entering their system and establish the legal, technical, and educational means needed to eliminate these discharges.

What is Illicit Discharge?

An illicit discharge is defined by the US EPA as “any discharge into a separate storm sewer system that is not composed entirely of storm water...” with some exemptions. These exceptions include discharges from NPDES permitted industrial sources and discharges from fire-fighting activities. Illicit discharges are considered “illicit” because MS4s are not designed to accept, process, or discharge such non-storm water wastes.

Typically, illicit discharges enter a storm sewer either through direct connection, such as sanitary sewer piping, or indirectly through cracked sanitary sewer conveyance systems, spills collected by storm drains or from contaminants dumped directly into a storm drain inlet. In many instances, the MS4 is directly connected to a water body and does not receive any type of treatment prior to its discharge to receiving water bodies of the state. These untreated discharges have the potential to cause significant degradation to receiving water bodies. As result of this non-treatment, it is vital that only storm water is discharged from these MS4s to prevent contamination of water bodies.

Types of Illicit Discharges

For any IDDE program to be successful, it is important to clearly understand the different types of illicit discharges so that individuals can take the necessary steps for elimination. This includes frequency of discharge and surrounding land use issues. Once an IDDE program is established and a community can investigate the frequency of discharge and land use issues associated with these discharges, then the possibility exists to trace the illicit discharge back to its source and eliminate it. Illicit discharges can be separated into three (3) categories based on frequency of discharge:

- 1. Transitory Illicit Discharge:** These are typically a one-time event. They can result from spills, dumping, and line breaks. These types of discharges are often the most difficult to investigate and trace back to its source. Methods for reducing this type of discharge are to educate the public on storm water and illicit discharge, establishment of a “hotline” telephone number for the public to call if any discharges are observed, and education of the community’s investigative responses to sources of illicit discharge.
- 2. Intermittent Illicit Discharge:** These are typically discharges that occur occasionally. They can occur several hours per day, week or over the course of a year. They can happen as the result of line breaks or cross connections. Again, the establishment of a “hotline” telephone number for the public to call if any discharges are observed is recommended.
- 3. Continuous Illicit Discharge:** These direct connections into the MS4 can be from sanitary sewers, cross connections, infrastructure problems with a sanitary sewer system, or malfunctioning household sewage treatment systems (HSTS). This type of discharge is the easiest to find, investigate, trace and eliminate from the MS4. These types of discharges also have the greatest impact because of the constant pollutant loading into a water body.

Illicit Discharges can also be categorized as either direct or indirect based on location:

1. Examples of direct illicit discharges:

- Sanitary wastewater piping that is directly connected from a home to the storm sewer
- Materials (e.g., used motor oil) that have been dumped illegally into a storm drain catch basin
- A shop floor drain that is connected to the storm sewer
- A cross-connection between the municipal sewer and storm sewer systems

2. Examples of indirect illicit discharges:

- An old and damaged sanitary sewer line that is leaking fluids into a cracked storm sewer line wastewater piping that is directly connected from a home to the storm sewer
- A failing septic system that is leaking into a cracked storm sewer line or causing surface discharge into the storm sewer

Non-Storm Water Discharges that the IDDE Program May Not Need to Address

According to EPA’s Phase II storm water regulations, an illicit discharge detection and elimination program need only address the following categories of non-storm water discharges if the operator of a small MS4 identifies them as significant contributors of pollutants to the MS4. Under the Ohio EPA Phase II Storm water rules these consist of:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Foundation drains
- Lawn watering
- Footing drains
- Springs
- Irrigation water
- Street wash water
- Discharges or flows from fire fighting activities are excluded from the effective
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool discharges
- Uncontaminated ground water infiltration
- Uncontaminated pumped ground water
- Individual residential car washing
- Water from crawl space pumps
- Rising ground waters
- Discharges from potable water sources
- Air conditioning condensation

prohibition against non-storm water and need only be addressed where they are identified as significant sources of pollutants to surface waters of the state.

The Elements of an effective IDDE Program

Ohio EPA maintains that the following must be incorporated in an IDDE Program:

- Develop a storm sewer system map (already completed) showing the location of all outfalls, and the names and location of all surface waters of the state that receive discharges from those outfalls, this also must include the location of all home sewage treatment systems (HSTS) that discharge directly into an MS4.
- To the extent allowable under law, effectively prohibit, through ordinance or other regulatory mechanism, non-storm water discharges into your storm sewer system and implement appropriate enforcement procedures and actions.
- Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to your system, including a program for dry weather inspections.
- Inform public employees, businesses, and the general public of hazards associated with illegal discharges.
- Develop a list of occasional and incidental non-storm water discharges that will not be addressed as an illicit discharge. This can include charity car washes.

A. Development, Implementation and Enforcement of IDDE Program

B. Development of Comprehensive Storm Sewer System Maps

What is an MS4?

According to the Ohio EPA, the definition of an MS4 does not solely refer to municipally-owned storm sewer systems, but rather, is a term of art with a much broader application that can include, in addition to local jurisdictions, State departments of transportation, universities, local sewer districts, hospitals, military bases, and prisons. An MS4 also is not always just a system of underground pipes – it can include roads with drainage systems, gutters and ditches. The regulatory definition of an MS4 is provided below:

“municipal separate storm sewer means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

- (i) Owned or operated by a State, city, township, county, district, association, or other public

body (created by or pursuant to State law) including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, that discharges into waters of the state.

(ii) Designed or used for collecting or conveying storm water;

(iii) Which is not a combined sewer; and

(iv) Which is not part of a Publicly Owned Treatment Works.”

Basically, when the field crew is performing the inventory of MS4 outfalls, a good understanding is needed as to the community and the outfalls possibly located within a water body. Most people know that a storm sewer outfall is an MS4 outfall. However, you must remember that ditches and catch basins are considered MS4s as well.

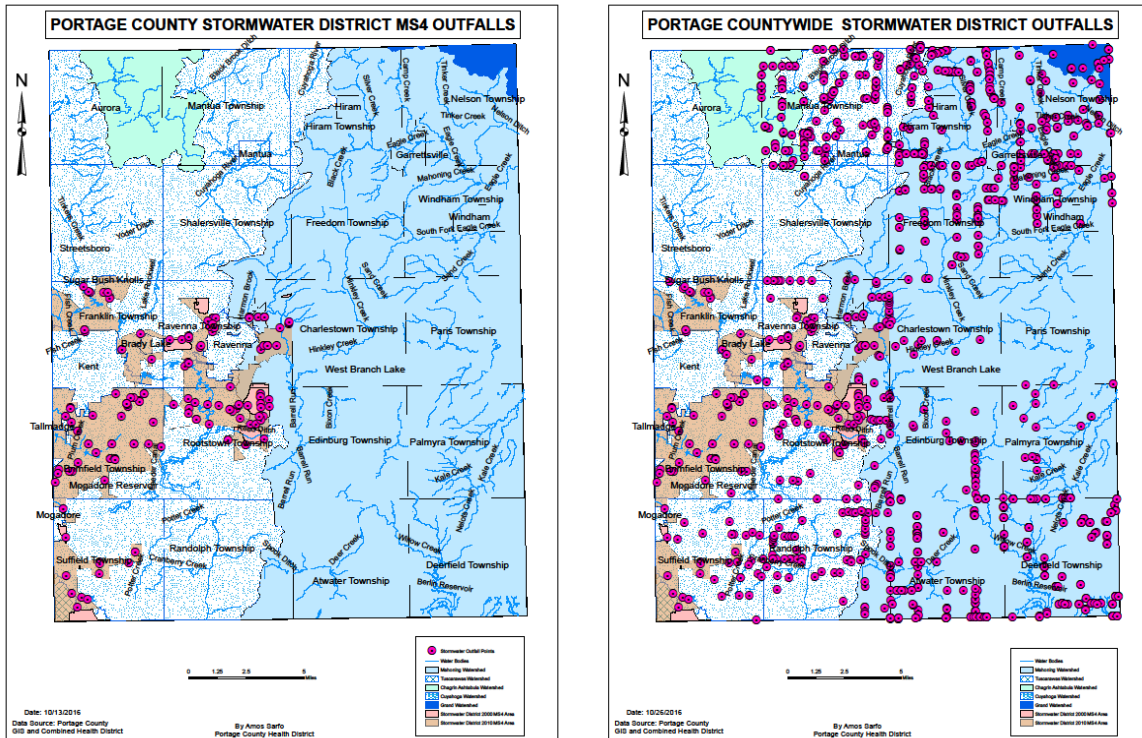
Embed Storm Water Outfall Pictures

PCHD

GIS Mapping of Outfall points

The Ohio EPA’s NPDES requirements for small MS4s state that one of the first mandatory elements of the IDDE program is to “develop, if not already completed, a storm sewer system map showing the location of all outfalls and the names and location of all surface waters of the state that receive discharges from those outfalls” (OEPA NPDES requirements)

Figure 1: Map showing MS4 and Countywide outfall locations.



- Ensure compliance with Resolution No. 09-0836 (primarily the prohibition of connection or continuation of connection of illicit discharges to Municipal Separate Storm Sewer System (MS4).
- Ensure that PCHD storm water personnel are adequately trained through continuous education to detect and identify failing household sewage treatment systems (HSTS) and illicit discharges. Training will include the use of necessary sampling and mapping equipment such as water quality testing equipment, Global Positioning System (GPS) units and Geographical

Information System (GIS) software for data collection and mapping. Furthermore, staffs will be trained on the design requirements for HSTSs and the monitoring requirements to determine a public health nuisance or hazard and the installation or replacement of HSTS systems.

- Work with all institutions involved in the program, namely Portage County Commissioners (PCC), Portage County Engineer's Office (PCEO), Portage County Soil and Water Conservation District (SWCD). In addition, build on the healthy working relationships with townships, villages, and the citizens for their cooperation to ensure the program's success.
- Continue to compile, organize, and investigate the scope of potential illicit discharges. Research a portion of the PCCGHD HSTS files, note potential failing discharges and compile information received from villages, townships, county engineer, SWCD, and the general public.
- Update the existing comprehensive database of suspected and reported illicit discharges to be utilized in the execution of field work, documentation and reporting.
- Conduct field inspections to identify, evaluate, and confirm failed and illicit discharging systems through random and property transfer inspections. Issue notices of violation, as necessary, to obtain compliance and abatement.
- Public educational outreach through distribution of educational materials and performing outreach to inform citizens about the impacts polluted storm runoff discharges can have on water quality.
- Accept, record, and compile sewage nuisance complaints from, villages, townships, government entities, and residents. Investigate complaints and perform dye testing to confirm public health nuisances and illicit discharges. Issue notices of violation, as necessary, to obtain compliance.
- Gather information from SWCD regarding discharges that were not from HSTS. Assist SWCD (when requested) with training of village, township, and municipal employees, as well as the development of educational materials, public announcements, and information for homeowners.
- Field inspection to identify and evaluate outfall points, sampling and testing for storm water contamination.
- Update maps of suspected illicit discharging HSTS.
- Update maps of storm water outfall points from GPS spatial data collected by SWCD.
- Attend quarterly Portage County Storm Water Program Task Force meetings. Provide quarterly statistical reporting of inspections, consultations and sampling.
- Compiled PCCGHD Storm Water Program annual report for all stakeholders.

IMPLEMENTATION

PROTOCOL

- Illicit Discharge Detection and Elimination Guidance Manual
 - Develop a Illicit Discharge Detection and Elimination Guidance Manual
 - Create mapping Template
 - Develop IDDE template

IDDE

- Design, develop and implement an IDDE Program:
 - File search
 - Database creation and maintenance
 - Field evaluation
 - Identify STS public health nuisances
 - Identify industrial and manufacturing illicit discharges
 - Identification Protocol
 - Dye test and establish sampling techniques and protocols
 - Training
 - Equipment training
 - field training
 - Field investigations
 - Enforcement
 - Work with partners for compliance
 - Issue orders, when necessary

- Concentrate on education and potential funding and alternative solutions as opposed to court action (“for the transition period.”)
- Complaint investigation and enforcement
- Outfall Evaluations
 - Create Outfall Description Template
 - Identifier, community, pipe diameter, material
 - Conduct outfalls dry-weather screened/inspected at least once by end of 5 year permit term
 - At least 25% for years 2016, 2017, 2018, and 2019
 - Sampling
 - Dissolved oxygen, pH, conductivity, temperature.....

MAPPING

- Obtain updated Map of Portage County MS4 Communities and Outfalls (SWCD?)
 - Expanded to include pipes, ditches, catch basins, flood control structures, etc.
- Field Verification Mapping Assessment
 - Field verify inventory and map of the Portage County MS4 Communities and all outfalls
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REPORTING

- Quarterly statistical reports

EDUCATION

- Public education
 - Homeowner Household Sewage Treatment Presentations (annually)

- Stormwater Task Force Presentation
- Assist SWCD (when requested) with educational outreach efforts

EVALUATION

- Program Evaluation
 - Track over time
 - Measure progress

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