

Chapter 3 Illicit Discharge Detection and Elimination Procedures Manual

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City of Frankfort & Franklin County, Kentucky

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### 1.1 Introduction

#### 1.2 KPDES Permit Program Requirements

The City of Frankfort and Franklin County, Kentucky, (referred to as City/County) is required under its KPDES permit to prohibit illicit non-stormwater discharges to the Municipal Separate Storm Sewer System (MS4), and implement enforcement procedures and actions to address the illegal discharges under Minimum Control Measure (MCM) three of their KPDES permit. An illicit discharge has been defined by the EPA as "any discharge into a separate storm sewer system that is not composed entirely of stormwater." Discharges can enter a MS4 either through a direct of "cross connection" of a sanitary sewer or through an indirect method such as cracked sanitary conveyance systems, spills or illegal dumping into storm drains.

The City/County, acting in cooperation, have established a Standard Operating Procedure (SOP) for the detection and elimination of illicit discharges into the MS4. The purpose of these standards is to provide a common set of guidelines that will produce consistency tracking and removing the source of illicit discharges. The focus of this document and manual is to serve as a roadmap of identification, isolation, response and reporting of illicit discharges in compliance with the KPDES permit KYG200000. Additional components of the City/County IDDE program include public and stakeholder education, regulatory ordinances, mapping development, and training as required under the permit are identified but described in detail under this plan.

This plan, while required, is also necessary to inform City/County staff of Best Management Practices (BMPs) in place to address this MCM. The document is intended to be revised in the future as the need for new regulations arises and as the City/County continues to progress. The City of Frankfort and Franklin County is currently mapping its stormwater infrastructure and additional Geographic Information Systems (GIS) in use as well as new system mapping will be incorporated into this plan.

#### **1.3 List of Abbreviations**

BMP	Best Management Practice
CWA	Clean Water Act
FEMA	Federal Emergency Management Agency
GIS	Geographic Information Systems
GPS	Global Positioning System
IDDE	Illicit Discharge Detection and Elimination
KDOW	Kentucky Division of Water
KPDES	Kentucky Pollutant Discharge Elimination System
KTC	Kentucky Transportation Cabinet
MS4	Municipal Separate Storm Sewer System
MCM	Minimum Control Measure

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NOV	Notice of Violation
ROW	Right of Way
SIC	Standard Industrial Classification
SOP	Standard Operating Procedure
SWQMP	Stormwater Quality Management Plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey

#### 1.4 City/County Program

Recognizing the adverse effects illicit discharges can have on receiving waters, the final rule requires an operator of a regulated small MS4 to develop, implement and enforce an illicit discharge detection and elimination program. Therefore, an MS4 operator must develop a map of the MS4 that locates all major MS4 outfalls and names of receiving waters; effectively prohibit discharges of non-stormwater to the MS4 through the use of an ordinance or other regulatory mechanism; and provide for enforcement procedures and actions; and inform public employees businesses, and the general public of the hazards associated with illegal discharges and improper disposal of waste.

Eleven (11) Best Management Practices (BMPs) and their associated milestones have been incorporated in this SWQMP to meet the requirements for MCM 3.

The City/County have ordinance and regulatory mechanisms in place that define and prohibit illicit discharges and assign authority for their regulation within the boundary of their MS4. These regulatory measures also define enforcement actions and the requirements for the removal of the illicit discharge.





## 2.0 System Mapping

#### 2.1 Watershed and Boundary Delineation

The MS4 permit for the City/County requires development of a map of the MS4 boundary that locates all major MS4 outfalls and names of receiving waters (Waters of the Commonwealth). The MS4 boundary base map provides the City/County with a quick reference to the area of interest in the case of an illicit discharge and helps with the assignment of responsibility. Mapping of outfalls and their contributing area infrastructure assists the City/County with source tracking and removal providing an awareness of the system.

This system map is used as a tool by the City/County to identify infrastructure, track and address discharges within their jurisdiction and also determine receiving watersheds likely to be impacted by the discharge that has taken place. Protection of receiving waters is a critical component of the MS4 program and it is essential to the City/County to know the locations and areas contributing to these watershed areas.

#### 2.2 Outfall Inventory and Location

As part of mapping efforts underway in 2016 the City/County will have an updated storm sewer infrastructure map which includes an outfall inventory for all major outfalls and associated infrastructure. A review of the sewer network will be used as a starting point with additional survey performed to add infrastructure asset details. Mapping will include location of all major outfalls as well as the name and location of all waters of the Commonwealth that receive discharges from the outfalls. This mapping database will be updated as needed to include new or modified outfalls and infrastructure resulting from new development, capital projects or infrastructure improvements.





## 3.0 Detection of Illicit Discharges

#### 3.1 Scheduled Major (Dry Weather) Outfall Screening

All major outfalls are required to be screened at a minimum of one time per permit term. Using the completed outfall inventory, the City/County will assess and screen major outfalls at a minimum of once per permit cycle. The schedule for screening and inspection will vary from year to year of the permit cycle based on staff and equipment availability and additional MS4 system priorities, but each major outfall will be screened once every 5 year term. The target inspection goal for major outfalls for the City/County is 20% annually with focused attention on areas deemed to be priority areas from the field assessment.

These annual screenings shall take place after a minimum of 48 hours of dry weather. The intent on these routine inspections is to determine if cross-connections or illicit discharges or spills are taking place within the system. By conducting these routine observations during dry weather, the City/County can determine unintended discharges taking place and take steps to eliminate discharges of non-stormwater or exempt discharges to the MS4 system.

Scheduled field screening activity will utilize the checklist developed by the City/County and included in Appendix C of this procedures manual. Screening activity shall include visual inspection of the outfall for indicators of pollutants (abnormal flow for dry weather conditions, odors, oil or other sheens, discoloration, silt, or high aquatic plant growth). These screenings not only assist the City/County with addressing illicit discharges but also provide a snapshot on the current condition of outfalls and system infrastructure.

If, during the course of scheduled dry weather screening, pollutants are suspected or observed, the City/County will implement tracking and elimination procedures outlined in Section 4 and 5 of this plan.

#### 3.2 Identifying Priority Areas

Priority areas are identified based on the likelihood of illicit connections. The City/County have developed procedures for locating priority areas using available local and state water quality/GIS data. Consideration is given to areas with known water quality issues, older areas likely to have older sanitary lines and cross connections, as well as areas with businesses and industries that generate or store hazardous materials and/or have had previous discharges or customer complaints. The City/County will also use data from field assessments to identify and prioritize new areas of priority. These may identify and prioritize outfall screening in areas with known hot spots, area industry and sites with HAZMATS stored within the watershed contributing to the outfall, past history in the area, and characteristics of discharge indicators in previous field observations.





#### 3.3 Customer Service Reporting

The City/County currently receives customer reporting of spills via telephone reporting, email, government website and social media. These reports are sent to the City Public Works/County Planning Departments where they are logged into their database for tracking resolution and reporting. This database logs and tracks spill reports received whether internal or external, and actions taken.





## 4.0 Tracking and Tracing Illicit Discharges

#### 4.1 Source Investigation/Visual Observation

The City/County procedures for tracing the source of an illicit discharge include visual investigation and determination of contributing pipe network. If an illicit discharge is found, the City/County will start at the point of discharge (outfall) to the waterway and perform a visual inspection of the substance. This visual observation will note, color, odor or other physical properties that can indicate a possible pollutant source or discharger. A field investigation form would be completed for the incident and logged in the work order system.

Using available mapping data the City/County would identify the contributing pipe network and track the source of the discharge upstream field verifying and observing upstream manholes, culverts and outfalls until a possible discharge source is located. Each point in the network inspected would be visually observed with any physical properties of the substance noted on the field investigation form.

#### 4.2 Video/Smoke/Dye Testing

In the event of intermittent discharges or when a source is not able to definitively be identified, smoke testing, dye testing and/or CCTV may be used to track the pollutant source.

#### 4.3 Sampling

Samples may be obtained at any of the outfalls, manholes or culverts and analyzed for basic water quality parameters such as Dissolved Oxygen (DO), conductivity, turbidity or pH. This would be done using grab samples if necessary and would not include full lab analysis for identification of discharge substance.





## 5.0 Eliminating Illicit Discharges

#### 5.1 Reporting and Response

If a discharge is found by a field crew during daily job duties or routine field investigation and determined to be a non-permissible stormwater discharge, City/County crews will notify the City at 502-875-8500 or County at 502-875-8701. Information will be logged in the City/County work order database and will document any actions taken. This system will also log any customer notifications of incidents.

The City/County will initiate tracking procedures identified in Section 4 of this manual and make all required notifications to the Kentucky Division of Water as appropriate. In the event an illicit discharge is determined to be a sanitary sewer line failure or defect the KDOW regional office is to be notified and the City/County if responsible is required to remediate the discharge and follow the corrective action plan or Sanitary Sewer Overflow Plan (SORP) approved by KDOW.

If water quality impairment is determined to be severe or urgent the incident will be referred immediately to the Kentucky Department of Environmental Protection's Environmental Emergency 24-hour hotline, 502-564-2380 or 800-928-2380.

#### 5.2 Removal of Discharge Source

When an illicit discharge is identified to be taking place, the City/County will work with the discharger to remedy the problem. Depending on the nature of the incident and type of material being discharged, the City/County will assist in notification to the authorities and to the property owner where the discharge may be taking place. The City/County will direct the discharger to remove/correct the illicit connection and/or discharge following their enforcement procedures outlined below. The City/County or other agencies may also offer technical assistance for eliminating and remediating the discharge to correctly address the problem.

Remediation activities are to be initiated as soon as physically possible according to the magnitude of the illicit discharge. The City/County staff are to be properly trained in remediation activities and procedures such as spill response, cleanup, public notification, traffic control, and equipment and response agencies available for remediation in order to effectively address these incidents.

#### 5.3 Follow up inspection

Once an illicit discharge source has been determined and the discharger notified to comply with elimination of the discharge, the City/County will perform a follow-up inspection to determine if the discharge has been satisfactorily eliminated and any impacted area remediated. This investigation will include visual observation and inspection, sampling in the event discharge still appears to be ongoing and





investigation of storm system to determine any impacted areas have been addressed. Discharge outfalls and downstream waterways will be visually inspected to determine the discharge has been eliminated.

The City/County will also work to evaluate the cause of the discharge to prevent future incidents and develop a plan if necessary for potential areas of improvement. This evaluation will include a post-response and remediation review of the discharger to determine if issues were preventable, if response was effective, and where improvements can be made.

#### 5.4 Enforcement

Chapter 54 of the City of Frankfort and Section 8 of the Franklin County Illicit Discharge Control Ordinances establishes its authority, defines prohibited discharges, identifies rules, regulations, inspection and monitoring requirements and outlines enforcement and penalties associated with illicit discharges. The current regulations adopted by the City/County are intended to protect the general health, safety and welfare of the citizens as well as protect and enhance water quality consistent with the Federal Clean Water Act.

In the event a person, company, developer or any other entity is determined to be the source of an illicit discharge, the City/County may order compliance by written notice of violation to the responsible entity and require:

- Monitoring, analyses, and reporting
- Elimination of illicit connections or discharges
- That violating discharges, practices, or operations shall cease and desist
- The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property
- Payment of a fine to cover administrative and remediation costs of the enforcement agency
- The implementation of source control or treatment best management practices

Current enforcement regulations provide the authority to institute deadlines within which such remediation or restoration must be completed, and actions that will take place should the violator fail to remediate or restore within the established deadline including the ability for the City/County to abate the discharge and institute fines to the violator to cover administration and remediation costs. There are additional provisions for penalties of no less than \$100 and no more than \$500 each day there is a violation of the regulatory chapter.





### 6.0 Training, Education, Outreach and Program Evaluation

#### 6.1 Staff Training

Field staff will be required to attend periodic training to help them identify and eliminate sources of potential illicit discharge. These trainings will assist staff in identifying potential discharges when conducting routine inspection and cleaning of the system, as well as educating them on methods to trace the source, procedures for reporting and eliminating the discharge. Trainings may include internal staff training, outside workshop, webinars and conferences on the topic or some combination thereof and will be offered at a minimum of twice per calendar year. Potential topics include response to reported spills, outfall investigations, sample acquisition and testing, source tracking, removal mechanisms, reporting procedures and requirements and use of GIS database to assist in these activities. These trainings may take place as stand-alone training topics or as part of scheduled field crew trainings.

#### 6.2 Public Education & Community Outreach

In addition to educational materials distributed on an annual basis, and the annual employee training educating employees on the hazards associated with illegal discharges, the City/County utilizes the KYTC Media Outreach Program (MOP) to reach the community and educate them on the hazards associated with illegal stormwater discharge. KYTC in conjunction with partner MS4 communities including the City/County, airs 30 second video and audio spots statewide as a public education initiative to inform the general population about stormwater issues. The ads include a mix of general information and specific stormwater topics developed after the statewide survey conducted in 2008 identified that half of the population is unaware that storm drains discharge directly to waters of the Commonwealth without treatment. A new website is also included in these outreach efforts to help launch the MOP and provide a statewide resource for the KYTC and partner MS4 communities like the City/County to promote stormwater issues. The website was designed to address the public as well as MS4 program participants. It provides basic information regarding what is stormwater and stormwater pollution, who to contact if more information is needed or a concern needs to be reported.

Individual public involvement and education is conducted by the City/County on an annual basis. The City/County utilizes Enviroscape trainings in local schools and community events to educate students, parents and teachers on how rainfall and pollutants can enter the system, what can be done to prevent pollution and promote stormwater issues relevant to this audience. KYTC's Kentucky Engineers Exposure Network (KEEN) organization also is available for additional presentations at schools using Enviroscape, Fishy Tale, and Sum of All Parts presentation materials to further educate and involve the community. There are also household hazardous waste disposal events held annually which help assist the public in proper disposal of





materials. These opportunities reduce the likelihood for such materials to end up being dumped or otherwise disposed of improperly into the MS4 system.

#### 6.3 Annual Activity Tracking and Evaluation

On an annual basis the City/County will review the components of this IDDE Manual for compliance with the SWQMP, program effectiveness and ability to meet BMPs. If during this review the City/County determines any areas of deficiency the program and/or plan will be revised to reflect new procedures or BMPs being implemented.

All records of spills and other discharges taking place as well as actions taken to address these incidents are logged into the City/County databases. Routine dry weather inspections are also logged into the system. The number of incidents and enforcement actions taken for the City/County are logged into the database and included in the Annual Report submitted electronically to KDOW per permit requirements.

The City/County will review the activities completed or conducted for the community and determine if objectives for this MCM are being met. Staff will illicit feedback from any training or public education efforts to assess whether activities were conducted, if the content was sufficient and if participation was as expected. Based on this feedback, the City/County will then determine what changes need to be made or if additional training topics or events should be included in their program to target areas specific to MCM 3.





# Appendix A

## MS4 Stormwater System and Receiving Waters Map



#### Stormwater Procedures Manual City of Frankfort and Franklin County, Kentucky Chapter 3 Illicit Discharge Detection and Elimination Procedures















## Appendix B Stormwater System Map with Major Outfalls



#### Stormwater Procedures Manual City of Frankfort and Franklin County, Kentucky Chapter 3 Illicit Discharge Detection and Elimination Procedures















## Appendix C Stormwater Outfall Scheduled Inspection Form





#### City of Frankfort/Franklin County Scheduled Stormwater Outfall Inspection Form

Date: Tim	e: Inspector					
Location Information						
Outfall ID: Out	Outfall Location:					
Receiving Waterbody:						
Weather Conditions						
Precipitation in the past 48 hours: Yes No						
General Outfall Information						
Flow Present: Yes No						
Flow: Trickle Light Heav	У					
Color (if flow is present):						
Source of flow (circle): Groundwat	er Irrigation Residual Stor	mwater Unknown				
Inspection Information (Circle)						
Debris/Pollution Description: Ode	or: Flow:					
None Nor	ne/Normal Clear					
Foam (indicate color) Mus	sty/Earthy Cloudy					
Floating Scum Sev	vage/Septic Opaque					
Oil/Sheen/Film Oth	er (describe)					
Organic Material						
Trash/Debris/Litter						
Sediment						
Sewage						
Other (describe)						
Additional Information (Circle)						

Amount of Sediment in Structure: None	Minimal	Heavy
Condition of Outfall Structure: Excellent	Good F	<sup>-</sup> air Poor
Erosion of Adjacent Area: Yes No		
Follow Up Inspection Required: Yes	No	
General Comments:		

Corrective Actions Taken (if applicable):

Attach Photos Taken and log both electronically





## Appendix D Illicit Discharge/Customer Compliant Inspection Form





City of Frankfort/Franklin County Customer Service/Illicit Discharge Field Report						
Date:	Time:	Report ID:				
Inspector:						
Complainant Name: Phone:						
Complaint Description:						
Location Information:						
Address:						
Property Owner:						
Owner Contact Information:						
Outfall ID:	Outfall Locat	ion:				
Receiving Waterbody:						
Pollution Description:	Odor:	Flow:				
Foam (indicate color)	None/Normal	Clear				
Floating Scum	Musty/Earthy	Cloudy				
Oil/Sheen/Film	Sewage/Septic	Opaque				
Organic Material	Sulfide (rotten eggs)					
Trach/Dobrie/Littor	Chemical (describe)					
Hash/Debhs/Lillei	( /					
Sediment	,					
Sediment Sewage						
Sediment Sewage Spill/Pollutant Discharge	Other (describe)					
Sediment Sewage Spill/Pollutant Discharge Other (describe)	Other (describe)					
Sediment Sewage Spill/Pollutant Discharge Other (describe)	Other (describe)					
Sediment Sewage Spill/Pollutant Discharge Other (describe)	Other (describe)					
Sediment Sewage Spill/Pollutant Discharge Other (describe)	Other (describe)					
Sediment Sewage Spill/Pollutant Discharge Other (describe)	Other (describe)					
Sediment Sewage Spill/Pollutant Discharge Other (describe)	Other (describe)					
Sediment Sewage Spill/Pollutant Discharge Other (describe)	Other (describe)					
Sediment Sewage Spill/Pollutant Discharge Other (describe)	Other (describe)					





#### Suspected Violator (if different from property owner):

Owner/Contact Person Name:

Business Name (if Applicable)

Address:

Phone Number:

Reason for Discharge (if known)

**Corrective Actions Taken (if applicable):** 

Recommendations/Follow Up:

Attach Photos Taken and log both electronically



