

# **FRANKLIN COUNTY STORM WATER MANAGEMENT PROGRAM**

## **Illicit Discharge Detection and Elimination Plan**

**Version 2.0  
November 25, 2013**

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## SECTION 1.0 Introduction

This document outlines the process that Franklin County and the Townships within Franklin County are taking to address public health concerns and water quality issues related to illicit discharges in their respective jurisdictional areas of unincorporated Franklin County. **Effluent from illicitly connected or malfunctioning Household Sewage Treatment Systems (HSTS) is considered the primary pollutant of concern within the unincorporated area of Franklin County.**

A substantial investment in time, money, and energy is responsible for the progress made to date with defining and documenting the issues surrounding HSTS. These efforts have involved identifying the locations of HSTS throughout Franklin County, Field Verification and Dry Weather Screening (DWS) of Municipal Separate Storm Sewer (MS4) outfalls, mapping of the stormwater sewer system, establishing ordinances and zoning requirements, and planning for community education, outreach and the means for addressing illicit discharges.

The National Pollution Discharge Elimination System (NPDES) Small MS4 Stormwater General Permit (OHQ000002) defines regulated MS4s as MS4s which are owned and operated by the permittee and located within the Urbanized Areas as defined by the 2010 census. Figure 1.0 shows the Urbanized Areas of Franklin County; refer to Appendix B– Definition of Urbanized Areas.

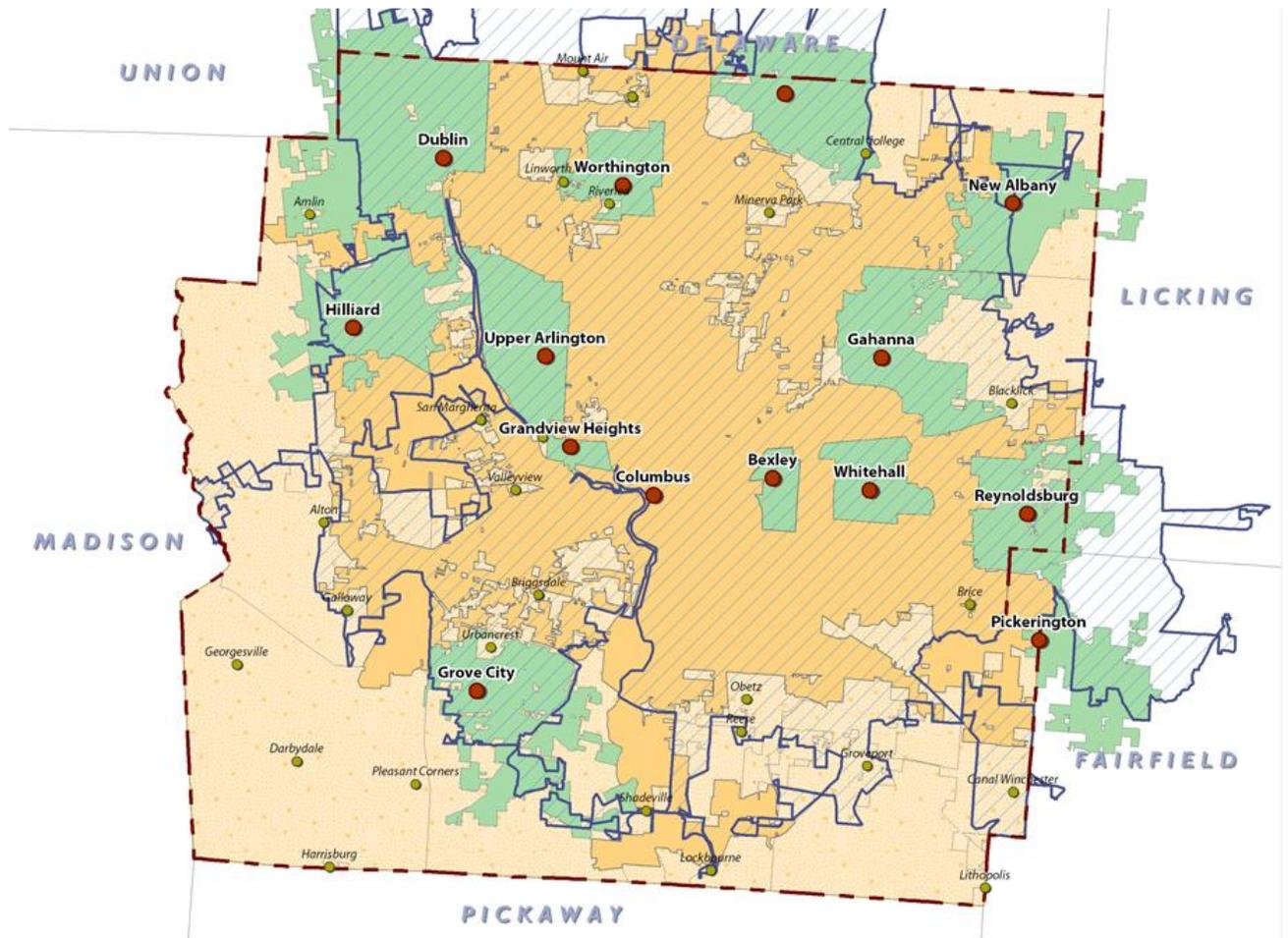


Figure 1.0 Urbanized Areas of Franklin County. The urbanized areas are the 'hatched' areas within the blue boundary. Shown with pre-2010 census update for urbanized area.

While it is the obligation of Franklin County and its co-permittees to address illicit discharges in the areas defined by these two criteria, **a more comprehensive goal was determined to be appropriate for the permittees' water quality efforts.** This decision was based on two predominant factors. First, many of the entities contributing to meeting the requirements of the permit are responsible for the whole of their jurisdiction, not only the areas designated as Urbanized Areas. As such, the belief is that all residents are due the efforts of the various county agencies and none should be ignored when public health risks exist. Secondly, due to the irregular boundaries of the municipalities in Franklin County, the areas of responsibility are disparate. Including another 'imposed' boundary only adds to greater segregation and increased difficulty in planning and tracking process. As such, it is the goal of Franklin County and its co-permittees to address illicit discharge issues within their entire jurisdictions.

Within the unincorporated areas of Franklin County, the use of HSTS is prevalent and widespread. The identification, permitting and regulation of illicitly connected, discharging and malfunctioning HSTS very costly to address both financially and in terms of human resources. However, in keeping with the published guidelines for the NPDES Small MS4 Stormwater General Permit (OHQ000002), Franklin County and its co-permittees are undertaking the task of addressing illicit discharges to the maximum extent practical and as is legally, feasibly, and economically, viable.

## **SECTION 2.0 Policy Statements and Guiding Principles**

FCPH, FSWCD, and the Franklin County officials responsible for the implementation of the Franklin County NPDES Storm Water Program developed policy statements and guiding principles for the community to understand the framework and strategies that will be adhered to when working towards meeting the permit requirements summarized. These policy statements and guiding principles are outlined as follows:

1. Empower the public by distributing educational materials and information about the impacts of stormwater discharges on water bodies and the steps they can take to reduce pollutants in stormwater runoff. Inform public employees, businesses and the general public of the hazards associated with illegal discharges, improper disposal of waste and the improper operation and maintenance of HSTS.
2. The OEPA through NPDES Permit No. OHQ000002 requires that permittees identify on-site sewage disposal systems connected to discharge to their regulated MS4. FCPH is identifying these systems and conducting an operation and maintenance program to identify and correct systems causing a public health nuisance as defined by ORC 3718 and Franklin County Public Health Regulation 720.
3. As required by Ohio law and the OEPA NPDES Permit No. OHQ000002, FCPH will enforce the public health nuisance statute as defined in ORC Chapter 3718 and Franklin County Public Health Regulation 720.
4. It is recommended that citizens monitor their access to and exposure in ditches and streams that may be contaminated with bacteria from discharging HSTS, and that those living in homes with drinking water supplied by private wells test their well water frequently if there is any concern that contamination may be occurring from any source, including soil absorption HSTS.
  - a. Bacterial contamination standards for streams and ditches are set by the OEPA and are applied to exposures (ingestion of surface water) from recreational use of that stream or other waterways such as canoeing, fishing, wading, and swimming.
5. Franklin County officials will continue to work with townships, surrounding communities, and the City of Columbus to identify pollution sources from these jurisdictions entering Franklin County's MS4s, opportunities for sewer extensions, and alternatives for treating household sewage. County and Township officials will also continue to look for funding opportunities to



### **SECTION 3.0 General Permit Information**

This document was produced to communicate steps being taken to improve water quality and meet the requirements of NPDES Small MS4 Stormwater General Permit (OHQ000002) through which stormwater discharges of Franklin County and the townships within Franklin County are permitted. General Permit (OHQ000002) was made effective on January 30, 2009, and is to remain in effect until January 29, 2014. This document is subject to periodic updates as progress is made with the various requirements of the permit and as OEPA clarifies or modifies the language of the permit.

*“As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches.... Since its introduction in 1972, the NPDES permit program is responsible for significant improvements to our Nation's water quality.”* (Source: <http://cfpub.epa.gov/npdes/index.cfm> )

Franklin County and the townships work cooperatively as co-permittees to meet the requirements of NPDES Small MS4 Stormwater General Permit (OHQ000002), the Franklin County Commissioners are the Permittee with the County Engineer and the 17 townships as Co-Permittees. Through this arrangement, the co-permittees meet or exceed the requirements of the permit utilizing a more comprehensive approach and a more efficient use of resources than would be possible if each co-permittee operated individually. The Franklin County Drainage Engineer is the primary contact for all concerns related to the NPDES Permit.

In accordance with Part III of NPDES Small MS4 Stormwater General Permit (OHQ000002), a Stormwater Management Program (SWMP) was designed to reduce the discharge of pollutants to the maximum extent practicable (MEP) from the permitted MS4 owned and operated by the co-permittees and to satisfy the appropriate water quality requirements of Ohio Revised Code (ORC) Chapter 6111, related to water pollution control, and the Federal Clean Water Act. The SWMP addresses the following six Minimum Control Measures (MCM):

- 1) Public education and outreach
- 2) Public participation / involvement,
- 3) Illicit discharge detection and elimination (IDDE)
- 4) Construction site runoff control
- 5) Post-construction runoff control
- 6) Pollution prevention / good housekeeping for municipal operations.

This document memorializes the plan specified in Part III, Section 3.e of the NPDES Small MS4 Stormwater General Permit.

### **SECTION 3.1 Supporting Documents**

This document does not stand in isolation but rather supports the greater water quality efforts as described in the document titled Franklin County and Township Stormwater Management Program (SWMP)

### **SECTION 3.2 Coordinating Agencies**

This document reflects the cooperative effort by several departments and agencies dedicated to addressing public health issues and protecting and managing water resources. The following partner agencies are involved with this effort:

- Franklin County Commissioners
- Franklin County Engineer (FCE)
- Franklin County Drainage Engineer (FCDE)
- Franklin County Townships:
  - Blendon, Brown, Clinton, Franklin, Hamilton, Jackson, Jefferson, Madison, Mifflin, Norwich, Perry, Plain, Pleasant, Prairie, Sharon, Truro, Washington
- Franklin County Sanitary Engineer (FCSE)
- Franklin County Public Health (FCPH)
- Franklin Soil and Water Conservation District (FSWCD)
- Franklin County Economic Development and Planning (FCEDP)
- Franklin County Public Facilities Management (FCPFM)
- Franklin County Fleet Management (FCFM)
- Mid-Ohio Regional Planning Commission (MORPC)

### **SECTION 4.0 Public Health Nuisance**

Franklin County Public Health staff has the authority to enforce Franklin County Public Health Regulation 720 (<http://myfcph.org/pdfs/regs/720Sewage.pdf>) and Ohio Revised Code 3718.011 and 6111 for the resolution of illicit discharges determined to be causing a public health nuisance. It is important to note that while various HSTS discharge effluent; these discharges may or may not be illicit discharges. As a general rule of thumb, if the HSTS discharging effluent is ‘operating as intended’, the resulting discharge is NOT an illicit discharge. These determinations are undertaken by FCPH.

### **SECTION 5.0 Local Controls Related to Stormwater Regulation**

Ohio Revised Code; Chapters:

- 3707
- 3709
- 3718
- 3767

Franklin County Public Health Regulation 720

## **SECTION 6.0 HSTS, and Stormwater Mapping**

Franklin County Phase II NPDES Stormwater Permit partner agencies have made significant strides in mapping stormwater infrastructure and HSTS in the unincorporated areas of Franklin County. This effort has developed as three separate, but interactive and overlapping efforts which used “*Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments*”, developed by Center for Watershed Protection as a guiding document at the inception of the efforts.

To date, these three efforts are referred to as: 1. Stream Resource Geodatabase, 2. Outfall Reconnaissance Inventory (ORI), and 3. MS4 mapping. Each of these efforts were developed by means of a Geographic Information System (GIS) utilizing, field data, engineering plans, geo-referenced aerial photography, and various other shared digital data sets.

### **SECTION 6.1 Stream Resource Geodatabase**

The Stream Resource Geodatabase project was initiated in 1995 to map petitioned drainage improvements in Franklin County. From 2001 through 2007, this dataset was greatly expanded in conjunction with the ORI (See below) to include a much higher resolution drainage layer developed from field verification work and increased access to high-resolution aerial photography. This enhanced dataset includes directionality of flow, United States National Hydrography Dataset nomenclature, stormwater connectors, and a variety of other descriptive attributes. This dataset documents the ‘Waters of the State’ as defined in the NPDES permit as well as subsurface drainage components when these data layers are available.

The connectivity and directionality inherent in this data set allows users to discern directions of flow for all segments of the dataset. This ability allows users to determine where the stormwater will flow from any given location, as well as the structures and/or features that contribute flow to any given location. All of the features within this dataset are associated with stream names as well as the larger watersheds. This dataset continues to be updated as additional data is obtained through field work and as new stormwater sewer locations are made available. FSWCD has dedicated a full time staff position to this effort since 2001.

### **SECTION 6.2 Outfall Reconnaissance Inventory (ORI)**

The ORI was undertaken from 2001 through 2007. This project required extensive field work, as Franklin Soil and Water staff walked over 1,600 miles of stream and using Global Positioning System (GPS) data loggers with sub-meter accuracy, collected the geospatial location and descriptive attributes of all public and private drainage features. All data was differentially corrected, manually adjusted to match current aerial photography and imported into a file geodatabase with links to digital photos from the field. This point database is currently comprised of over 40,000 data points categorized by watershed. In excess of permit requirements, the ORI included an initial Dry Weather Screening (DWS) of all drainage features. This process requires field inspection of drainage features during periods of dry weather. Dry weather for this screening is defined as having a maximum of 0.1" of rain during the previous 72 hours. This ‘dry weather’ protocol helps to minimize flows due to rain or snow melt events and highlights illicit discharges.

The DWS conducted with the ORI entailed recording a variety of characteristics for each feature screened, including a physical description of the drainage feature, any indicators suggesting an illicit discharge, and a digital photograph of the feature. GPS data loggers were used to record the location and descriptive information of the features. The data was then processed, analyzed, and mapped utilizing GIS. The analysis assisted in determining which drainage features are likely to contain illicit discharges. **(Refer to Appendix D for the specific characteristics recorded for the various drainage features during DWS)**

The groups of features screened during ORI were:

**Flowing Pipes:** outfalls with flow at the time of screening

Note: outfalls with flow within catch basins are included in this group

**Non-Flowing Pipes:** outfalls with no flow at the time of screening

Note: outfalls without flow within catch basins are included in this group

**Flowing Channels:** constructed or man-made channels with flow at the time of screening

**Non-Flowing Channels:** constructed or man-made channels without flow at the time of screening

**Catch Basins:** catch basins with or without flow at the time of screening

**Generic Points:** locations not fitting into the above categories, but which are of interest to stormwater management and illicit discharges: i.e. seeps, unknown water sources, dump sites, etc.

In addition to the features dry weather screened, the locations of crossovers (drainage passing under roadways or structures), and manholes were collected to assist in developing stormwater flow lines in the Stream Resource Geodatabase. To allow efficient referencing and tracking of the features dry weather screened, a nomenclature was developed for the various types of features screened which associated each feature with the year it was screened and the township in which it is located. FSWCD has coordinated with FCPH and the FCEO on the ORI since 2006 and has dedicated one full time employee and at least two additional seasonal staff on a yearly basis to this effort. **(Refer to Appendix C for an explanation of the nomenclature used with ORI/DWS)**

### **SECTION 6.2.1 Identifying Potential Illicit Discharges**

Features are categorized by their potential to be a source of illicit discharge and whether or not they are an obvious (severe) source of an illicit discharge. The criteria used to identify potentially illicit discharges are considered stand-alone indicators. These are odor, color, floatables, poor pool quality, benthic growth, and deposits and stains. The presence of at least one of these criteria can designate the outfall as potentially illicit.

It is important to identify obvious (severe) sources of illicit discharge during dry weather screening, because the presence of obvious indicators (e.g. raw sewage) allows that feature to be prioritized for future follow-up investigation and resolution. For a location to be determined as an obvious (severe) source of an illicit discharge, it must have at least one of several specific, pre-defined stand-alone indicators. **(Refer to Appendix E for criteria used for classifying illicit discharges)**

### **SECTION 6.2.2 Effluent Sampling**

To better understand what was being observed during ORI and to verify the accuracy of the dry weather screening conducted with the ORI, follow-up effluent sampling of potential illicit discharges was done for the first several years of the ORI. These water samples were processed at an OEPA certified lab to determine the amounts of pollutants such as Ammonia, Ammonia Nitrogen, E. Coli, Fecal Strep, Fecal Coliform, Methylene Blue Active Substances (MBAS), and Ortho Phosphates. These lab results were included in the GIS and provided to FCPH.

This additional step confirmed the accuracy of the dry weather screening process and due to this has been discontinued as part of the screening process.

### **SECTION 6.2.3 Dry Weather Screening of MS4 Outfalls**

The permit requires permittees to conduct an initial Dry Weather Screening of their regulated MS4 outfalls during the term of the permit. With the consent of the OEPA, the far more comprehensive ORI conducted by FSWCD and the co-permittees during the terms of the first and current generations of the NPDES Small MS4 general permits was substituted for this permit requirement. With the ORI now complete, DWS of regulated MS4 outfalls will be conducted such that each outfall is screened at least once during each permit term.

### **SECTION 6.3 MS4 Mapping**

Starting in 2010, a cooperative effort between the FCDE and FSWCD was initiated to develop stormwater sewer mapping (MS4) for areas of Franklin County and the 17 townships. This mapping involves referencing engineering drawings as well as field verification of features and feature locations for the development of several GIS data layers. This data is being developed for incorporation into the existing Stream Resource Geodatabase, and will be added to the Stream Resource Geodatabase as the data becomes available.

This effort will also require cooperation and coordination with the townships due to the lack of storm sewer mapping through a majority of the township jurisdictions. There is considerable institutional knowledge on the location and condition of the storm sewers, but this knowledge has not historically been translated into plans (hard copy or digital).

### **SECTION 7.0 FCPH Operation and Maintenance Program**

FCPH maintains an operation/maintenance program for all aeration treatment systems that discharge to MS4s, watercourses, field tiles or other sources. This program includes permitting, annual observations of the discharging system, and enforcement of aeration treatment systems that create public health nuisances and/or illicit discharges. Water Quality environmental health technicians conduct annual observations of all aeration treatment units in Franklin County as per the operation/maintenance program. If by the second observation, the system does not appear to be functioning correctly, a referral to a registered sanitarian for further investigation and enforcement.

## **Section 7.1 FCPH IDDE Program Investigations and Enforcement**

IDDE Program staff sanitarians are responsible for investigating all sewage nuisance complaints. The nuisance complaints investigated by staff sanitarians come from the FCPH Operation and Maintenance Program, complaints from the general public, and referrals from partner agencies. When it is alleged or a complaint is made that an HSTS is causing a public health nuisance as defined in R.C. 3718.011 and/or Regulation 720, then Public Health has the authority to investigate such complaints and allegations. Upon staff verification of a public health nuisance, the abatement process for public health nuisances will be followed as outlined in Appendix G and the “Franklin County And Township Stormwater Management Program 2009 – 2013” document.

## **Section 7.2 Connection to Central Sanitary Sewer**

Public Health possesses the authority to require that whenever a central sanitary sewerage system is determined to be available and accessible to a property with an HSTS, the household sewage treatment system shall be abandoned and the house sewer directly connected to the central sewerage system. This authority applies regardless of the manner by which the sanitary sewerage system was constructed, or the operational condition of the HSTS. A similar process of enforcement will be followed as outlined in the “Franklin County And Township Stormwater Management Program 2009 – 2013” document, which may include issuing to the property owner Notice(s) of Violation, a Board of Health Order, or filing for injunctive relief in Franklin County Municipal Court, Environmental Division.

## **SECTION 7.3 Identified Areas of Concern**

In addressing the topic of prioritizing IDDE activities, a historical perspective of public health risks and sanitary sewer needs in Franklin County needs to be explored. Efforts were initiated in 1990 by the FCSE to address several areas identified as having the worst ‘known’ sewage problems. It must be remembered that at this point in time, there were no comprehensive datasets or objective analysis of these problems; these areas were derived from subjective interpretation of the then-current staff. These areas were known as Water Quality Partnership Areas (WQP) and were divided into Tier I and Tier II areas. The Tier I areas consisted of 21 locations for which the City of Columbus agreed that they would provide sanitary sewer services without requiring annexation to the City of Columbus. The Tier II areas consisted of eight areas with the same severity of pollution issues as the Tier I areas, however the City of Columbus would not agree to provide sanitary sewer services to these areas unless they agreed to be annexed into the City of Columbus.

Between 1990 and 2010, all but 5 of these Tier I and Tier II areas received sanitary sewers, or had active sanitary sewer projects. This effort, while not originally part of the NPDES purview, served as a point of origin for the efforts which are now part of the NPDES Small MS4 Stormwater General Permit (OHQ000002). As the ORI and associated DWS was conducted, it was discovered that there were many other locations in Franklin County, aside from the original 28 WQP areas, that had discharging and non-discharging (soil absorption) HSTS that were aging and potentially causing public health nuisances. As the terminology of the NPDES permits came into use, illicitly connected or malfunctioning HSTS became known as illicit discharges. By default, as plans were implemented to provide sanitary sewer services to these areas, hundreds of discharging HSTS were disconnected from the MS4s, an explicit goal of the NPDES.

Through the ORI activities, it became apparent that there were areas throughout Franklin County that equaled or exceeded the number and/or density of marginal HSTS found in the original WQP areas, and it was decided that a means of quantifying and visualizing the ORI data needed to be developed even though it only showed a specific point in time. Starting in 2010 GIS analysis was undertaken in an attempt to define relative health risk related to environmental variables for the unincorporated areas of Franklin County. This analysis took into account variables related to the results of the ORI, locations of aeration HSTS (Figure 3.1), and density of housing. Through this relative health risk analysis, it was determined that there were areas throughout Franklin County that equaled or exceeded the original water quality partnership areas in terms of public health risks, and it became apparent that a multitude of approaches was needed to address the illicit discharges. A ranked list of Identified Areas of Concern was developed using the results of the analysis.

This analysis provided a more holistic understanding of potential HSTS issues throughout unincorporated Franklin County which the County has been able to use to continue outreach to and education of county residents. As FCPH advances its IDDE Program Investigations and Enforcement activities, these areas will be used as a reference for assisting with planning and approaches to investigating and addressing HSTS related issues. Refer to **Appendix F** for a map of the Identified Areas of Concern. The lower area numbers (i.e. 1,2,3) are the locations with the ‘highest’ rankings.

#### **SECTION 7.4 Public Health Nuisance Abatement Process**

Franklin County and its co-permittees, have made great strides in documenting and analyzing the extent of illicit discharges in Franklin County – the overwhelmingly predominant issue being HSTS. In addressing the health risks to Franklin County residents, and in keeping pace with the NPDES permit requirements, a thorough, cooperative, multi-faceted approach between Franklin County and co-permittees to address these illicit discharges is underway.

Franklin County Public Health staff has the authority to enforce Franklin County Public Health Regulation 720 (<http://myfcph.org/pdfs/regs/720Sewage.pdf>) and Ohio Revised Code 3718.011 and 6111 for the resolution of illicit discharges determined to be causing a public health nuisance.

**FCPH will continue to investigate all public health nuisance complaints** related to failed or failing HSTSs reported by normal channels, though the failed HSTS hotline, FCPH website and e-mail as they are received **whether or not the complaints are affecting the MS4**. Any aeration treatment system that fails its annual observations/inspections will be referred to IDDE Program sanitarians to investigate and determine if a public health nuisance exists. Enforcement and abatement processes will proceed as outlined in Appendix G and the “*Franklin County And Township Stormwater Management Program 2009 – 2013*”.

*See Appendix G for a flow chart of the Public Health Nuisance Abatement Process*

## **SECTION 8.0 Identifying Aeration systems Connected to the MS4**

During 2011 and 2012, FCPH Water Quality Program staff verified aeration system connections to the MS4 using various investigation methods. Please note that the complete inventory of MS4's have not been identified and mapped as of 2013 and it is expected that the effort for the first pass at mapping will take several additional years. Staff used a current billing list of all aerators on the FCPH annual operational inspection program. They reviewed permit records for notations regarding the discharge point of the aeration system (storm sewer, ditch, stream, waterway, etc.). Staff members then field verified the discharge point of any aeration systems that they could not be 100% certain were not connected to the MS4. To field verify these potential connections, staff may have used dye tests, probing for discharge pipes, and sampling results from the Dry Weather Screening of storm sewers. Upon the determination of connections to the MS4, staff from FCPH created a database layer that will be mapped using Geographic Information System (GIS) software to meet NPDES requirements. These identified potential connections to MS4s will be routinely checked, and this list further refined by staff of the IDDE and Water Quality Programs as routine aeration treatment system observations and complaint investigations are conducted.

## **SECTION 9.0 Communication and Outreach**

The success of the IDDE plan depends, in part, on communicating it to the stakeholders and the public affected, and on providing the opportunity for community participation and input from various venues. The goal of this communication and outreach is for the community to understand the IDDE plan, why it is required and its purpose, who is responsible for its implementation, when and how it will be implemented, and how it may affect their lives.

Franklin Soil and Water Conservation District is facilitating a communication and outreach advisory group composed of the Public Information Officers (PIO's) from FCPH, Franklin County, and FSWCD. The purpose of this group is to prepare consistent messages and communication strategies for the agencies involved in meeting the requirements of the Franklin County NPDES Storm Water Permit to use in outreach and educational efforts for the community.

The following is the Communication Planning Tool that will be used to guide our outreach and education efforts.

## **SECTION 9.1 IDDE Communication Plan**

### **Communication Goal**

Franklin County will continue to provide education and outreach regarding the operation, maintenance, and discharge of home sewage treatment systems. Citizens and property owners living within unincorporated Franklin County (with a focus on the urbanized areas subject to the Franklin County Phase II Storm Water Permit) will have a better understanding of the environmental and public health concerns associated with illicit discharges such as hazardous chemicals and failed Household Sewage Treatment Systems (HSTS) and semi-public sewage treatment systems discharging into a MS4. This understanding will include: the NPDES Storm Water Permit requirements that require specific actions by homeowners of failing HSTS, including application to Ohio EPA for new HSTS systems; the scientific facts about the risks associated with failed HSTS; the options available to residents in areas at higher risk for exposure to waterborne pathogens as a result of failing systems to protect their health and the environment; and where citizens can report illicit discharges and failed HSTS.

## **Communication Objectives**

Franklin County, through its MOUs with FCPH and the FSWCD will meet the goal of the communication plan by continuing to develop and maintain resources and activities in the form of written materials for community forums, websites, mailings, brochures, news releases, and displays. FCPH and the FSWCD will make these resources available to county and township partners for use in conjunction with their community outreach and education programs and venues.

## **Future Communication and Outreach**

This communication plan outlines action steps for the second-generation permit. Franklin County intends this Plan to serve as a blueprint for its activities, but recognizes that communication plans often require adjustment to deliver effective messages. As such, it intends to review this plan periodically to ensure effective outreach and education. The central hub of the communication plan is an IDDE information website hosted at FCPH ([myfcph.org](http://myfcph.org)) with a link to the Franklin County Storm Water Program website. This website provides education and information for the public including definitions, background of the problem, areas of concern for public health risks from failing HSTS, tips for homeowners to reduce their risk of disease, and plans for addressing these concerns.

Educational brochures, displays, and presentations for property owners and communities will supplement these websites. These educational tools will increase awareness about identifying and reporting illicit discharges, eliminating illicit discharges, and managing private and semi-public sewage treatment systems to minimize environmental and public health risks.

As previously stated, communication planning will continue to evolve with input from the Franklin County Storm Water Executive Committee (FCSWEC) and county Public Information Officers to educate communities and individuals on the implementation of the broader IDDE Plan and other NPDES Permit requirements.

### **a) Communication to all Residents of Townships**

The general requirement in the NPDES Permit mandating communications on illicit discharges is to inform our citizens of the hazards associated with illegal discharges and improper disposal of waste.

FCPH has developed a website dedicated to providing an overview of the County's NPDES Storm Water Permit, information about HSTS, the process of identifying and eliminating failing HSTS, health risks associated with failing HSTS, enforcement methodology being employed by FCPH and an interactive map showing identified areas of concern related to concentrations of HSTS. This website will be periodically updated and can be found on the web at: <http://myfcph.org/npdes.php>

Brochures, designed by FCPH, focus on operation and maintenance of HSTS, especially those HSTS that discharge to the MS4. These brochures include information about the potential for public health risks caused by failing HSTS, and how citizens can identify and report public health nuisances caused by failing HSTS. FCPH will provide a phone number, e-mail address, and web address for reporting failing HSTS or for additional information on questions or concerns related to HSTS

### **b) Direct communication to owners of aeration treatment systems**

Beginning in 2013, FCPH will include an educational brochure in all annual operation and maintenance permit applications for aeration treatment systems. This brochure will focus on how to maintain an aeration treatment system, prevent water pollution, and how to report failing HSTSs.

## **SECTION 10.0 Reporting Illicit Discharges**

The IDDE Program benefits from citizen reports regarding spills, illegal dumping, sewage and other observed pollution. Various avenues for reporting are available to the community depending on the material or liquid being discharged. The Franklin County Engineer, Franklin County Drainage Engineer, Franklin Soil and Water Conservation District, Franklin County Economic Development and Planning, Franklin County Sanitary Engineer and Franklin County Public Health receive reports regarding pollution in storm sewers, ditches and waterways. The corresponding agencies take this information and forward it to the responsible agency. Specific information on agency responsibility can be found below and is published in educational information found on websites and in brochures.

Citizens are encouraged to report any water pollution related complaint or concern outside of HSTS and emergency chemical spills to Franklin Soil and Water Conservation District (614) 486-9613.

Non-emergencies can also be report to Ohio EPA Central District Office at 1-800-686-2330.

Questions or concerns regarding the county storm water management program can be directed to the county drainage engineer's office at 614-525-3030.

In addition, the Board of Commissioners' new Franklin County app has a water-pollution-reporting function that can send location information and a photograph directly to FSWCD for dissemination to appropriate agencies. There is an iOS version and an Android version of the app available for download.

## **SECTION 10.1 Reporting Chemical Spills and Illegal Dumping Into Storm Sewers**

The OEPA maintains a task force of responders for complaints of emergency chemical spills into the waters of the state. The toll-free 24/7 hotline is 800-282-9378. More information can be found at <http://www.epa.ohio.gov/derr/ersis/er/er.aspx>. FCPH has an after-hours emergency phone number for calls outside of business hours for emergency chemical spills **affecting the Franklin County MS4** at 614-525-3965.

## **SECTION 10.2 Reporting Sewage in Storm Sewers from Aeration Treatment Systems or Failed HSTS**

This pollution source is a priority pollutant for our IDDE program. The Franklin County Engineer, the Franklin County Drainage Engineer, the Franklin Soil and Water Conservation District, and Franklin County Public Health will receive complaints about sewage found in storm water or storm sewers. If the complainant calls any one of these agencies, the complaint will be forwarded to FCPH for investigation. Intra-agency reports of non-functioning HSTS will also be forwarded to FCPH.

The Franklin County Public Health, IDDE Program staff are responsible for addressing pollution reports related to sewage. They can be contacted by calling 614-525-HSTS, reporting online at <http://www.fcbhforms.org/view.php?id=31> or e-mailing [HSTS@franklincoluntyohio.gov](mailto:HSTS@franklincoluntyohio.gov).

## **SECTION 11 Complaint Management, Tracking and Response**

Upon receiving sewage related complaints, IDDE Program staff at FCPH will log the complaint into an Environmental Health tracking software system which automatically assigns a unique complaint number to track it until abated or dismissed. All the activity related to that complaint number will be logged and tracked using the same software package and/or additional software as necessary. Staff will determine the source of the sewage by dye testing or other methods, and work to remove or mitigate the pollution source from the MS4 through notice of violations, Board of Health orders, or legal mechanisms through the court system if necessary. In addition, the Franklin County Drainage Engineers Office is developing a Service Request Manager to be used in the IDDE program for tracking complaints, coordinating and tracking responses from the Franklin County Stormwater Partnership agencies.

# FRANKLIN COUNTY STORM WATER MANAGEMENT PROGRAM

## Illicit Discharge Detection and Elimination Plan

### Appendix

#### List of Appendices:

- A.....Definitions and Acronyms
- B.....Definition of Urbanized Area
- C.....Dry Weather Screening Nomenclature
- D.....Dry Weather Screening Criteria by Feature
- E.....Criteria for Determining Illicit Discharges
- F.....Identified Areas of Concern for Storm Water Public Health Risks
- G.....Flow Chart of Public Health Nuisance Abatement Process



## **Appendix A: Definitions and Acronyms**

# Appendix A: Definitions and Acronyms

**ATU:** Alternative Treatment Unit :An onsite wastewater treatment system that provides enhanced treatment beyond the level of treatment provided by a conventional septic system. Alternative treatment systems may consist of multiple components and achieve higher levels of treatment by providing an aerobic environment for bacteria to break down wastewater i.e. ‘aeration’.

**BMP:** Best Management Practices: means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**CC:** Colony Count

**CWA:** Clean Water Act (33 U.S.C. §1251 et seq. (1972)): establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. The “Clean Water Act” became the Act’s common name with its amendments in 1977 (US EPA). The CWA provides the statutory basis for the NPDES permit program and the basic structure for regulating the discharge of pollutants from point sources to waters of the United States. Section 402 of the CWA specifically requires EPA to develop and implement the NPDES program.

**DWS:** Dry Weather Screening; the in-field process undertaken to fix the geospatial location of outfalls, record basic characteristics of the outfalls, and screen for illicit discharges and their relative severity. This field work is conducted only during periods of dry weather.

**E.coli:** An indicator often screened for during IDDE programs; Escherichia coli, is a species of fecal coliform bacteria that is specific to fecal material from humans and other warm-blooded animals. EPA recommends E. coli as the best indicator of health risk from water contact in recreational waters. Ohio’s surface water quality standards are in the process of being revised. In the Draft Revisions to Water Quality Standards Ohio Administrative Code (OAC) Chapter 3745-1 E. coli will be used as the sole indicator for public health nuisances.

**EPA:** Environmental Protection Agency

**FCBOH:** Franklin County Board of Health – Previous Name for Franklin County Public Health

**FCDE:** Franklin County Drainage Engineers

**FCE:** Franklin County Engineer

**FCEDP:** Franklin County Economic Development and Planning

**FCFM:** Franklin County Fleet Management

**FCPFM:** Franklin County Public Facilities Management

**FCPH:** Franklin County Public Health – previously referred to as Franklin County Board of Health

**FCSE:** Franklin County Sanitary Engineer

**FCSWEC:** Franklin County Storm Water Executive Committee

**FCSWMP:** Franklin County Storm Water Management Plan

**Fecal coliform:** An indicator often screened for during IDDE programs; Subset of total coliform bacteria which are more fecal-specific in origin. In current Water Quality Standards Ohio Administrative Code (OAC) Chapter 3745-1 fecal coliform is use in conjunction with E. coli to determine public health nuisances.

**FSWCD:** Franklin Soil and Water Conservation District

# Appendix A: Definitions and Acronyms - cont.

**GIS:** Geographic Information System

**GPS:** Global Positioning System

**HSTS:** Home Sewage Treatment System; a means of treating waste water and sewage on site. These systems do not connect into municipal sanitary sewer systems. Types of systems include: aeration units, septic tanks, leach fields, mound systems and drip systems. There are 2 general classifications of HSTS systems Off-Lot and On-Lot. Off-Lot Home Sewage Treatment Systems are designed to treat home sewage on-site and discharges treated wastewater off-lot. On-Lot Home Sewage Treatment Systems are designed to treat home sewage on-lot with no discharges leaving the lot

**IDDE:** Illicit Discharge Detection and Elimination; a program mandated by the NPDES program developed to detect and eliminate illicit discharges

**Illicit Connection:** any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer (MS4)

**Illicit Discharge:** defined at 40 CFR 122.26(b)(2) and refers to any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire fighting activities.

**MBAS:** An indicator often screened for during IDDE programs; Methylene Blue Active Substances, (surfactant) detergent indicator.

**MCM:** Minimum Control Measures; terminology utilized by OEPA in permit requirements

**MEP:** Maximum Extent Practicable; the technology-based discharge standard for Municipal Separate Storm Sewer Systems to reduce pollutants in storm water discharges that was established by CWA '402(p). A discussion of MEP as it applies to small MS4s is found at 40 CFR 122.34.

**MORPC:** Mid Ohio Regional Planning Commission

**MS4:** Municipal Separate Storm Sewer System; a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are:

Owned or operated by the federal government, state, municipality, township, county, district, or other public body (created by or pursuant to state or federal law) including special district under state law such as a sewer district, flood control district or drainage districts, or similar entity, or a designated and approved management agency under section 208 of the act that discharges into surface waters of the state; and

Designed or used for collecting or conveying solely storm water,

Which is not a combined sewer, and

Which is not a part of a publicly owned treatment works

**MS4 Outfall:** a point source at the point where a municipal separate storm sewer discharges to surface waters of the State and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances that connect segments of the same stream or other surface waters of the state and are used to convey waters of the state.

**NH3:** An indicator often screened for during IDDE programs; Ammonia, pollutant and an indicator of sewage.

**NHD:** National Hydrography Dataset

## Appendix A: Definitions and Acronyms - cont.

**NPDES:** National Pollutant Discharge Elimination System, Federal regulation implemented at the state and local level to regulate point sources of pollution into surface waters. The Franklin SWCD assists the county in regulating soil and erosion sediment control from construction sites. The authority to regulate this comes from the NPDES Program. For more information, refer to: <http://cfpub.epa.gov/npdes/index.cfm>

**OAC:** Ohio Administrative Code

**OEPA:** Ohio Environmental Protection Agency

**ORC:** Ohio Revised Code

**ORI:** Outfall Reconnaissance Inventory. For FSWCD, this was the previous terminology used for DWS.

**Orthophosphate:** An indicator often screened for during IDDE programs; sewage, detergent, and fertilizer indicator.

**PIO:** Public Information Officer

**POTW:** Publically Owned Treatment Works

**RC:** Revised Code

**Sanitary Sewer:** a pipe or conduit (sewer) intended to carry wastewater or water-borne wastes from homes, businesses, and industries to the POTW.

**SNP:** Suburban News Publication

**SRG:** Stream Resource Geodatabase; the database under construction by FSWCD which includes both surface and subsurface drainage throughout franklin county

**Storm Water:** defined at 40 CFR 122.26(b)(13) and means storm water runoff, snow melt runoff, and surface runoff and drainage.

**STS:** Sanitary Sewage System

**SWMP:** Storm Water Management Program; refers to a comprehensive program to manage the quality of storm water discharged from the municipal separate storm sewer system.

**TMDL:** Total Maximum Daily Loads, Federal regulation implemented at the state and local level to identify and reduce non-point source pollutants. This program is still being developed at the state level and is not yet being enforced.

**Waters of the United States** (receiving waters): All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide. Waters of the United States include all interstate waters and intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. [See 40 CFR 122.2 for the complete definition.] The NPDES permit regulates flows to the Waters of the United States.

**WQP:** Water Quality Partnership Areas

## **Appendix B: Definition of Urbanized Area**

# Appendix B: Definition of Urbanized Area

United States  
Environmental Protection  
Agency

Office of Water  
(4203) December 1999 (revised December 2005)

EPA 833-F-00-004  
Fact Sheet 2.2



## Storm Water Phase II Final Rule

### Urbanized Areas: Definition and Description

#### Storm Water Phase II Final Rule Fact Sheet Series

##### Overview

1.0 – Storm Water Phase II Final Rule: An Overview

##### Small MS4 Program

2.0 – Small MS4 Storm Water Program Overview

2.1 – Who's Covered? Designation and Waivers of Regulated Small MS4s

2.2 – Urbanized Areas: Definition and Description

##### Minimum Control Measures

2.3 – Public Education and Outreach

2.4 – Public Participation/Involvement

2.5 – Illicit Discharge Detection and Elimination

2.6 – Construction Site Runoff Control

2.7 – Post-Construction Runoff Control

2.8 – Pollution Prevention/Good Housekeeping

2.9 – Permitting and Reporting: The Process and Requirements

2.10 – Federal and State-Operated MS4s: Program Implementation

##### Construction Program

3.0 – Construction Program Overview

3.1 – Construction Rainfall Erosivity Waiver

##### Industrial “No Exposure”

4.0 – Conditional No Exposure Exclusion for Industrial Activity

As discussed in Fact Sheet 2.1, *Who's Covered? Designation and Waivers of Regulated Small MS4s*, the Phase II Final Rule covers all small municipal separate storm sewer systems (MS4s) located within an “urbanized area” (UA). Based on the 2000 Census, there are 464 UAs in the United States that cover approximately 2 percent of total U.S. land area and contain nearly 70 percent of the Nation’s population. These numbers include Puerto Rico and the Commonwealth of the Northern Mariana Islands — the two U.S. Territories with UAs.

UAs constitute the largest and most dense areas of settlement. UA calculations delineate boundaries around these dense areas of settlement and, in doing so, identify the areas of concentrated development. UA designations are used for several purposes in both the public and private sectors. For example, the Federal Government has used UAs to calculate allocations for transportation funding, and some planning agencies and development firms use UA boundaries to help ascertain current, and predict future, growth areas.

#### What Is an Urbanized Area (UA)?

The Bureau of the Census determines UAs by applying a detailed set of published UA criteria (see 55 *FR* 42592, October 22, 1990) to the latest decennial census data. Although the full UA definition is complex, the Bureau of the Census’ general definition of a UA, based on population and population density, is provided below.

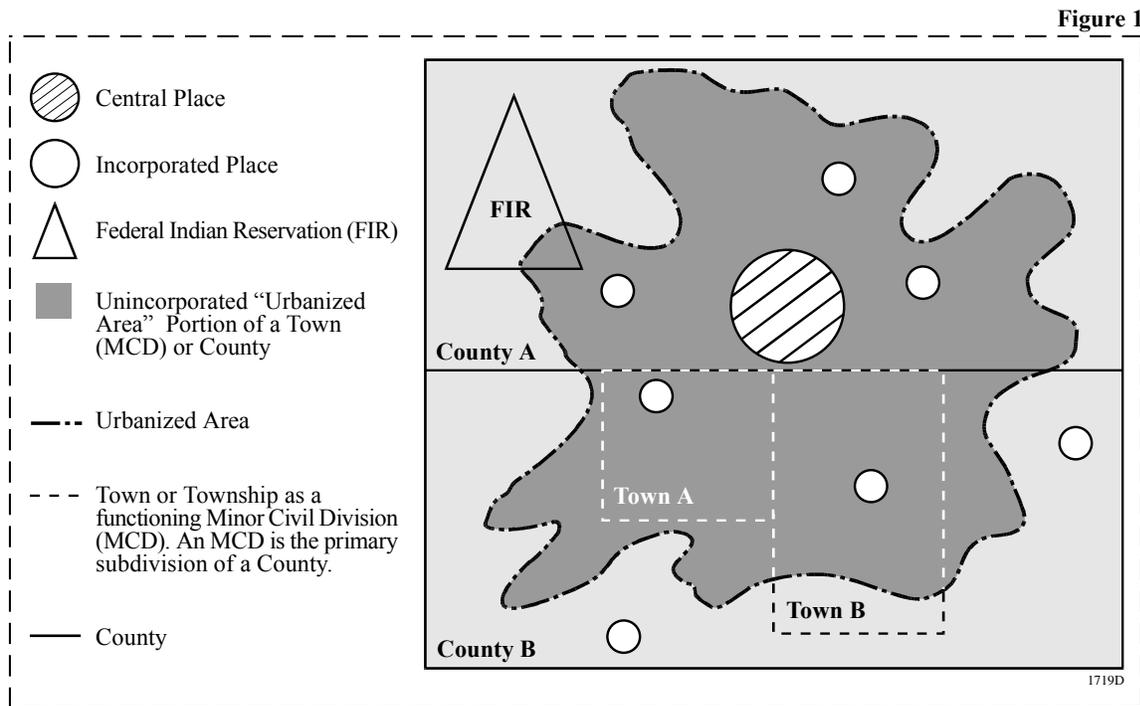
An **urbanized area** is a land area comprising one or more places — central place(s) — and the adjacent densely settled surrounding area — urban fringe — that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile.

The basic unit for delineating the UA boundary is the census block. Census blocks are based on visible physical boundaries, such as the city block, when possible, or on invisible political boundaries, when not. An urbanized area can comprise places, counties, Federal Indian Reservations, and minor civil divisions (MCDs - towns and townships).

#### How Can Status as a Regulated Small MS4 Be Determined?

The drawing below (see Figure 1) is a simplified UA illustration that demonstrates the concept of UAs in relation to the Phase II Final Rule. The “urbanized area” includes within its boundaries incorporated places, a portion of a Federal Indian reservation, an entire MCD, a portion of another MCD, and portions of two counties. Any and all operators of small MS4s located within the boundaries of the UA are covered under the Phase II Final Rule, regardless of political boundaries. Operators of small MS4s located outside of the UA are subject to potential designation into the Phase II MS4 program by the NPDES permitting authority.

# Appendix A: Definition of Urbanized Area - cont.



Operators of small MS4s can determine if they are located within a UA, and therefore covered by the Phase II storm water program, by contacting one or more of the institutions listed below for more detailed information on the location of the UA boundary. At this time, the States and EPA have compiled a list of municipalities to be covered under the Phase II Rule, but the urbanized area boundaries are important in some cases for determining the specific area within a municipality's boundaries that is covered (e.g., a county included in Phase II might only be required to implement their program for the urbanized area of the county).

**The State or NPDES Permitting Authority (may be the State or the U.S. EPA Region)**

**Storm Water Coordinators:** The NPDES permitting authority may be the State or the U.S. EPA Region. The Storm Water Coordinators for each U.S. EPA Region are listed in the *For Additional Information* section in Fact Sheet 2.9. These regional contacts can assist with UA information and provide the names of State storm water contacts. Regional and State contact information can also be obtained from OWM.

**State Data Centers:** Each State's Data Center receives listings of all entities that are located in UAs, as well as detailed maps and electronic files of UA boundaries. The Bureau of the Census web site includes a list of contact names and phone numbers for the data in each State at [www.census.gov/sdc/www](http://www.census.gov/sdc/www).

**State Planning/Economic/Transportation Agencies:**

These agencies typically use UAs to assess current development and forecast future growth trends and, therefore, should have detailed UA information readily available to help determine the UA boundaries in any given area.

**County or Regional Planning Commissions/Boards**

As with State agencies, these entities are likely to have detailed UA data and maps to help determine UA boundaries.

**U.S. EPA**

**NPDES Web Site:** EPA has developed a set of digitized maps for each urbanized area as defined by the 2000 U.S. Census. These maps are organized by state and are available at <http://www.epa.gov/npdes/stormwater/urbanmaps>.

**Enviromapper Web Site:** EPA modified a Web-based geographic program called *Enviromapper*. This allows MS4 operators to enter a location and see a detailed map of the UA boundary (called "city boundaries"). *Enviromapper* can be accessed at <http://www.epa.gov/enviro/html/em/index.html>.

# Appendix A: Definition of Urbanized Area - cont.

## ❑ The Bureau of the Census

*Urbanized Areas Staff:* 301-457-1099

**Web Site:** The site allows users to obtain free UA cartographic boundary files (Arc/Info export format) for Geographical Information System (GIS) use at <http://www.census.gov/geo/www/ua/uaucbndy.html>.

Also, detailed UA maps are available to download in PDF for printing in large format. Each map is intended to be printed on a 36- by 33-inch sheet. For a listing of UAs for download, visit

<http://www.census.gov/geo/www/maps/ua2kmaps.htm>.

## How Will Subsequent Censuses Affect the Determination of Status as a Regulated Small MS4?

Any additional automatic designations of small MS4s based on subsequent census years is governed by the Bureau of the Census' definition of a UA in effect for that year and the UA boundaries determined as a result of the definition.

Once a small MS4 is designated into the Phase II storm water program based on the UA boundaries, it can not be waived from the program if in a subsequent UA calculation the small MS4 is no longer within the UA boundaries. An automatically designated small MS4 will remain regulated unless, or until, it meets the criteria for a waiver (see Fact Sheet 2.1 for more information on the regulated small MS4 waiver option).

### For Additional Information

#### Contacts

☞ U.S. EPA Office of Wastewater Management  
<http://www.epa.gov/npdes/stormwater>  
Phone: 202-564-9545

☞ Your NPDES Permitting Authority. Most States and Territories are authorized to administer the NPDES Program, except the following, for which EPA is the permitting authority:

Alaska	Guam
District of Columbia	Johnston Atoll
Idaho	Midway and Wake Islands
Massachusetts	Northern Mariana Islands
New Hampshire	Puerto Rico
New Mexico	Trust Territories
American Samoa	

☞ A list of names and telephone numbers for each EPA Region and State is located at <http://www.epa.gov/npdes/stormwater> (click on "Contacts").

#### Reference Documents

- ☞ EPA's Stormwater Web Site  
<http://www.epa.gov/npdes/stormwater>
- Stormwater Phase II Final Rule Fact Sheet Series
  - Stormwater Phase II Final Rule (64 FR 68722)
  - National Menu of Best Management Practices for Stormwater Phase II
  - Measurable Goals Guidance for Phase II Small MS4s
  - Stormwater Case Studies
  - EPA Urbanized Area Maps: <http://www.epa.gov/npdes/stormwater/urbanmaps>
- ☞ Census 2000 Urbanized Area Information
- General Information: <http://www.census.gov/geo/www/ua/uaucbndy.html>
  - Maps: <http://www.census.gov/geo/www/maps/ua2kmaps.htm>

## **Appendix C: Dry Weather Screening Nomenclature**

# Appendix C: Dry Weather Screening Nomenclature

## Guidelines for FSWCD\_ID formatting for the "IDDE\_DATA" database

The naming convention for the FSWCD\_ID is as follows:

**[Type of Feature]-[Year Collected]-[Township]-[ORI\_ID]**

### [Type of Feature]

- [ **PI** ] for Pipe Flows and Pipe No Flows
- [ **CH** ] for Channel Flows and Channel No Flows
- [ **CB** ] for Catch Basins
- [ **PG** ] for Point Generics
- [ **MH** ] for Manholes
- [ **HS** ] for Household Sewer Treatment Systems
- [ **CO** ] for Drainage Cross Overs

### [Year Collected]

- |                    |                    |                    |
|--------------------|--------------------|--------------------|
| [ <b>06</b> ] 2006 | [ <b>08</b> ] 2008 | [ <b>10</b> ] 2010 |
| [ <b>07</b> ] 2007 | [ <b>09</b> ] 2009 | [ <b>11</b> ] 2011 |

### [Township Code]

<i>Township</i>	<i>Township Code</i>
Blendon	<b>BL</b>
Brown	<b>BR</b>
Clinton	<b>CL</b>
Franklin	<b>FR</b>
Hamilton	<b>HA</b>
Jackson	<b>JA</b>
Jefferson	<b>JE</b>
Madison	<b>MA</b>
Mifflin	<b>MI</b>
Montgomery	<b>MO</b>
Norwich	<b>NO</b>
Perry	<b>PE</b>
Plain	<b>PN</b>
Pleasant	<b>PT</b>
Prairie	<b>PR</b>
Sharon	<b>SH</b>
Truro	<b>TR</b>
Washington	<b>WA</b>

**[ORI\_ID]:** the ORI IDs are unique by year but not by feature i.e. in the year 2006, there will only be (1) instance of 100, but if you look at the years 2006, 2007 and 2008, the number 100 will also be represented. The ORI IDs are given by features in sequences of 2,000 as follows:

Pipe Flow	[ <b>1 - 1,999</b> ]
Pipe No Flow	[ <b>2,000 - 3,999</b> ]
Channel Flow	[ <b>4,000 - 5,999</b> ]
Channel No Flow	[ <b>6,000 - 7,999</b> ]
Catch Basin	[ <b>8,000 - 9,999</b> ]
Point Generic	[ <b>10,000 - 11,999</b> ]
Manholes	[ <b>12,000 - 13,999</b> ]
HSTS	[ <b>14,000 - 15,999</b> ]
Cross Overs	[ <b>16,000 - 17,999</b> ]

# **Appendix D: Dry Weather Screening Criteria by Feature**

# Appendix D: Dry Weather Screening Criteria by Feature: Catch Basins

## Dry Weather Screen for Catch Basins

### Background Data

Landuse *Predominant landuse where screening*

- 0 Other
- 1 Industrial
- 2 Ultra-Urban Residential
- 3 Suburban Residential
- 4 Commercial
- 5 Open Space
- 6 Institutional

Rainfall *Time elapsed since last rainfall*

- 1 <24 hours
- 2 <48 hours
- 3 >48 hours
- 4 >72 hours

Air Temperature Current air temperature

### Outfall Description

Catch\_Basin\_Type *Type of catch basin structure*

- 1 Square
- 2 Curb Inlet
- 3 Curb Inlet - Bicycle
- 4 Circular
- 5 Cone
- 6 Dome
- 7 Other

Outfall\_Damage *Predominant damage to outfall*

- 0 None
- 1 Cracked or Chipped
- 2 Peeling Paint
- 3 Corrosion
- 4 Other

Water\_Standing *Is water standing in the catch basin - yes or no*

- 0 No
- 1 Yes

Water\_Flowing *Is water flowing through the catch basin - yes or no*

- 0 No
- 1 Yes

Flow\_Direction *Direction of flow in catch basin*

- 0 Unknown
- 1 North
- 2 Northeast
- 3 East
- 4 Southeast
- 5 South
- 6 Southwest
- 7 West
- 8 Northwest

# Appendix D: Dry Weather Screening Criteria by Feature: Catch Basins - cont.

Flow\_Description      *Quantitative description of flow*  
0   None  
1   Trickle  
2   Moderate  
3   Substantial

Outfall\_Damage      *Predominant damage to outfall*  
0   None  
1   Cracked or Chipped  
2   Peeling Paint  
3   Corrosion  
4   Other

## Physical Indicators

Deposits\_and\_Stains      *Deposits or stains observed during screening*  
0   None  
1   Oily  
2   Flow Line  
3   Pain  
4   Other

Benthic\_Growth      *Color of benthic growth observed*  
0   None  
1   Brown  
2   Orange  
3   Green  
4   Gray  
5   Other

Poor\_Pool\_Quality      *Poor pool conditions observed*  
0   None  
1   Odors  
2   Colors  
3   Floatables  
4   Oil Sheen  
5   Suds  
6   Excessive Algae  
7   Other

Abnormal\_Vegetation      *Abnormal vegetation observed*  
0   None  
1   Excessive  
2   Inhibited

Odor      *Odor present during screening*  
0   None  
1   Sewage  
2   Sulfide  
3   Rancid/Sour  
4   Petroleum/Gas  
5   Other

Odor\_Index      *Extent of odor present during screening*  
0   None  
1   Faint  
2   Easily Detected  
3   Notice at a Distance

# Appendix D: Dry Weather Screening Criteria by Feature: Catch Basins - cont.

Color	<i>Color of water during screening</i> 0 Clear 1 Brown 2 Gray 3 Yellow 4 Green 5 Orange 6 Red 7 Other
Color_Index	<i>Extent of color observed during screening</i> 0 None 1 Faint in Bottle 2 Clearly Visible 3 Colored Flow
Floatables	<i>Floatables present during screening</i> 0 None 1 Sewage-Toilet Paper 2 Petroleum Sheen 3 Other
Floatables_Index	<i>Extent of floatables present during screening</i> 0 None 1 Few or Slight 2 Some 3 Clear Origin
Turbidity	<i>Turbidity of water during screening</i> 0 Clear 1 Slightly Cloudy 2 Cloudy 3 Opaque

## General Information

Investigator	Agency collecting the data
Notes	Relevant notes about observations
Photo	Photo of feature

# Appendix D: Dry Weather Screening Criteria by Feature: Flowing Pipes

## Dry Weather Screen for Flowing Pipes

### Background Data

Landuse	<i>Predominant landuse where screening</i>
	0 Other
	1 Industrial
	2 Ultra-Urban Residential
	3 Suburban Residential
	4 Commercial
	5 Open Space
	6 Institutional
Rainfall	<i>Time elapsed since last rainfall</i>
	1 <24 hours
	2 <48 hours
	3 >48 hours
	4 >72 hours
Air Temperature	Current air temperature

### Outfall Description

Pipe_Material	<i>Predominant material of flow structure</i>
	0 Unknown
	1 PVC (white)
	2 PVC (black)
	3 PVC (green)
	4 PVC (yellow)
	5 Corrugated Plastic
	6 Clay
	7 Concrete
	8 Concrete (headwall)
	9 N-12
	10 N-12 (headwall)
	11 Metal
	12 Corrugated Metal
Pipe_Shape	<i>Shape of flow structure</i>
	0 Other
	1 Round
	2 Elliptical
	3 Box
Pipe Diameter	Measured diameter of pipe in inches
Submerged_Water	<i>Percent of structure obscured by water</i>
	1 <25%
	2 <50%
	3 <75%
	4 >75%
	5 100%
Submerged_Sediment	<i>Percent of structure obscured by sediment</i>
	1 <25%
	2 <50%
	3 <75%
	4 >75%
	5 100%

# Appendix D: Dry Weather Screening Criteria by Feature: Flowing Pipes - cont.

Outfall_Damage	<i>Predominant damage to outfall</i>
0	None
1	Cracked or Chipped
2	Peeling Paint
3	Corrosion
4	Other

## Physical Indicators

Deposits_and_Stains	<i>Deposits or stains observed during screening</i>
0	None
1	Oily
2	Flow Line
3	Pain
4	Other

Benthic_Growth	<i>Color of benthic growth observed</i>
0	None
1	Brown
2	Orange
3	Green
4	Gray
5	Other

Poor_Pool_Quality	<i>Poor pool conditions observed</i>
0	None
1	Odors
2	Colors
3	Floatables
4	Oil Sheen
5	Suds
6	Excessive Algae
7	Other

Abnormal_Vegetation	<i>Abnormal vegetation observed</i>
0	None
1	Excessive
2	Inhibited

Odor	<i>Odor present during screening</i>
0	None
1	Sewage
2	Sulfide
3	Rancid/Sour
4	Petroleum/Gas
5	Other

Odor_Index	<i>Extent of odor present during screening</i>
0	None
1	Faint
2	Easily Detected
3	Notice at a Distance

# Appendix D: Dry Weather Screening Criteria by Feature: Flowing Pipes - cont.

Color	<i>Color of water during screening</i> 0 Clear 1 Brown 2 Gray 3 Yellow 4 Green 5 Orange 6 Red 7 Other
Color_Index	<i>Extent of color observed during screening</i> 0 None 1 Faint in Bottle 2 Clearly Visible 3 Colored Flow
Floatables	<i>Floatables present during screening</i> 0 None 1 Sewage-Toilet Paper 2 Petroleum Sheen 3 Other
Floatables_Index	<i>Extent of floatables present during screening</i> 0 None 1 Few or Slight 2 Some 3 Clear Origin
Turbidity	<i>Turbidity of water during screening</i> 0 Clear 1 Slightly Cloudy 2 Cloudy 3 Opaque
Pipe Flow	<i>Direction pipe flows from</i> 0 Unknown 1 North 2 Northeast 3 East 4 Southeast 5 South 6 Southwest 7 West 8 Northwest
Flow_Description	<i>Quantitative description of flow</i> 0 None 1 Trickle 2 Moderate 3 Substantial
In_Catch_Basin	<i>Is feature in catch basin - yes or no</i> 0 No 1 Yes

# Appendix D: Dry Weather Screening Criteria by Feature: Flowing Pipes - cont.

Catch Basin Flow	<i>Direction pipe flows from</i>
	0 Unknown
	1 North
	2 Northeast
	3 East
	4 Southeast
	5 South
	6 Southwest
	7 West
	8 Northwest

## **General Information**

Investigator	Agency collecting the data
Notes	Relevant notes about observations
Photo	Photo of feature

# Appendix D: Dry Weather Screening Criteria by Feature: Non-Flowing Pipes

## Dry Weather Screen for Non-Flowing Pipes

### Background Data

Landuse	<i>Predominant landuse where screening</i>
0	Other
1	Industrial
2	Ultra-Urban Residential
3	Suburban Residential
4	Commercial
5	Open Space
6	Institutional
Rainfall	<i>Time elapsed since last rainfall</i>
1	<24 hours
2	<48 hours
3	>48 hours
4	>72 hours
Air Temperature	Current air temperature

### Outfall Description

Pipe_Material	<i>Predominant material of flow structure</i>
0	Unknown
1	PVC (white)
2	PVC (black)
3	PVC (green)
4	PVC (yellow)
5	Corrugated Plastic
6	Clay
7	Concrete
8	Concrete (headwall)
9	N-12
10	N-12 (headwall)
11	Metal
12	Corrugated Metal
Pipe_Shape	<i>Shape of flow structure</i>
0	Other
1	Round
2	Elliptical
3	Box
Pipe Diameter	Measured diameter of pipe in inches
Submerged_Water	<i>Percent of structure obscured by water</i>
1	<25%
2	<50%
3	<75%
4	>75%
5	100%
Submerged_Sediment	<i>Percent of structure obscured by sediment</i>
1	<25%
2	<50%
3	<75%
4	>75%
5	100%

# Appendix D: Dry Weather Screening Criteria by Feature: Non- Flowing Pipes - cont.

Outfall_Damage	<i>Predominant damage to outfall</i>
0	None
1	Cracked or Chipped
2	Peeling Paint
3	Corrosion
4	Other

## Physical Indicators

Deposits_and_Stains	<i>Deposits or stains observed during screening</i>
0	None
1	Oily
2	Flow Line
3	Pain
4	Other

Benthic_Growth	<i>Color of benthic growth observed</i>
0	None
1	Brown
2	Orange
3	Green
4	Gray
5	Other

Poor_Pool_Quality	<i>Poor pool conditions observed</i>
0	None
1	Odors
2	Colors
3	Floatables
4	Oil Sheen
5	Suds
6	Excessive Algae
7	Other

Abnormal_Vegetation	<i>Abnormal vegetation observed</i>
0	None
1	Excessive
2	Inhibited

Pipe Flow	<i>Direction pipe flows from</i>
0	Unknown
1	North
2	Northeast
3	East
4	Southeast
5	South
6	Southwest
7	West
8	Northwest

In_Catch_Basin	<i>Is feature in catch basin - yes or no</i>
0	No
1	Yes

# Appendix D: Dry Weather Screening Criteria by Feature: Non- Flowing Pipes - cont.

Catch Basin Flow	<i>Direction pipe flows from</i>
	0 Unknown
	1 North
	2 Northeast
	3 East
	4 Southeast
	5 South
	6 Southwest
	7 West
	8 Northwest

## General Information

Investigator	Agency collecting the data
Notes	Relevant notes about observations
Photo	Photo of feature

# Appendix D: Dry Weather Screening Criteria by Feature: Flowing Channel

## Dry Weather Screen for Flowing Channels

### Background Data

Landuse	<i>Predominant landuse where screening</i>
0	Other
1	Industrial
2	Ultra-Urban Residential
3	Suburban Residential
4	Commercial
5	Open Space
6	Institutional
Rainfall	<i>Time elapsed since last rainfall</i>
1	<24 hours
2	<48 hours
3	>48 hours
4	>72 hours
Air Temperature	Current air temperature

### Outfall Description

Channel_Material	<i>Predominant open channel material</i>
1	Earthen
2	Rip-Rap
3	Concrete
4	Other
Channel_Shape	<i>Shape of open channel</i>
1	Trapezoid
2	Parabolic
3	Other
Channel Depth	Depth of channel in inches
Top Width	Width at top of channel in inches
Flow Width	Width of flow in inches
Flow Depth	Depth of flow in inches

### Physical Indicators

Deposits_and_Stains	<i>Deposits or stains observed during screening</i>
0	None
1	Oily
2	Flow Line
3	Pain
4	Other
Benthic_Growth	<i>Color of benthic growth observed</i>
0	None
1	Brown
2	Orange
3	Green
4	Gray
5	Other

## Appendix D: Dry Weather Screening Criteria by Feature: Flowing Channel - cont.

Poor_Pool_Quality	<i>Poor pool conditions observed</i>
	0 None
	1 Odors
	2 Colors
	3 Floatables
	4 Oil Sheen
	5 Suds
	6 Excessive Algae
	7 Other
Abnormal_Vegetation	<i>Abnormal vegetation observed</i>
	0 None
	1 Excessive
	2 Inhibited
Odor	<i>Odor present during screening</i>
	0 None
	1 Sewage
	2 Sulfide
	3 Rancid/Sour
	4 Petroleum/Gas
	5 Other
Odor_Index	<i>Extent of odor present during screening</i>
	0 None
	1 Faint
	2 Easily Detected
	3 Notice at a Distance
Color	<i>Color of water during screening</i>
	0 Clear
	1 Brown
	2 Gray
	3 Yellow
	4 Green
	5 Orange
	6 Red
	7 Other
Color_Index	<i>Extent of color observed during screening</i>
	0 None
	1 Faint in Bottle
	2 Clearly Visible
	3 Colored Flow
Floatables	<i>Floatables present during screening</i>
	0 None
	1 Sewage-Toilet Paper
	2 Petroleum Sheen
	3 Other
Floatables_Index	<i>Extent of floatables present during screening</i>
	0 None
	1 Few or Slight
	2 Some
	3 Clear Origin

## Appendix D: Dry Weather Screening Criteria by Feature: Flowing Channel - cont.

Turbidity	<i>Turbidity of water during screening</i>
	0 Clear
	1 Slightly Cloudy
	2 Cloudy
	3 Opaque

### General Information

Investigator	Agency collecting the data
Notes	Relevant notes about observations
Photo	Photo of feature

# Appendix D: Dry Weather Screening Criteria by Feature: Non-Flowing Channel

## Dry Weather Screen for Non-Flowing Channels

### Background Data

Landuse	<i>Predominant landuse where screening</i>
	0 Other
	1 Industrial
	2 Ultra-Urban Residential
	3 Suburban Residential
	4 Commercial
	5 Open Space
	6 Institutional
Rainfall	<i>Time elapsed since last rainfall</i>
	1 <24 hours
	2 <48 hours
	3 >48 hours
	4 >72 hours
Air Temperature	Current air temperature

### Outfall Description

Channel_Material	<i>Predominant open channel material</i>
	1 Earthen
	2 Rip-Rap
	3 Concrete
	4 Other
Channel_Shape	<i>Shape of open channel</i>
	1 Trapezoid
	2 Parabolic
	3 Other
Channel Depth	Depth of channel in inches
Top Width	Width at top of channel in inches
Flow Width	Width of flow in inches
Flow Depth	Depth of flow in inches

### Physical Indicators

Deposits_and_Stains	<i>Deposits or stains observed during screening</i>
	0 None
	1 Oily
	2 Flow Line
	3 Pain
	4 Other
Benthic_Growth	<i>Color of benthic growth observed</i>
	0 None
	1 Brown
	2 Orange
	3 Green
	4 Gray
	5 Other

# Appendix D: Dry Weather Screening Criteria by Feature: Non-Flowing Channel - cont.

Poor\_Pool\_Quality      *Poor pool conditions observed*  
0   None  
1   Odors  
2   Colors  
3   Floatables  
4   Oil Sheen  
5   Suds  
6   Excessive Algae  
7   Other

Abnormal\_Vegetation      *Abnormal vegetation observed*  
0   None  
1   Excessive  
2   Inhibited

## General Information

Investigator              Agency collecting the data  
Notes                      Relevant notes about observations  
Photo                      Photo of feature

# Appendix D: Dry Weather Screening Criteria by Feature: Point Generic

## Dry Weather Screen for Point Generics

### Background Data

Landuse	<i>Predominant landuse where screening</i>
	0 Other
	1 Industrial
	2 Ultra-Urban Residential
	3 Suburban Residential
	4 Commercial
	5 Open Space
	6 Institutional
Rainfall	<i>Time elapsed since last rainfall</i>
	1 <24 hours
	2 <48 hours
	3 >48 hours
	4 >72 hours
Air Temperature	Current air temperature

### General Information

Investigator	Agency collecting the data
Notes	Relevant notes about observations
Photo	Photo of feature



## **Appendix E: Criteria for Classifying Illicit Discharges**

# Appendix E: Criteria for Classifying Illicit Discharges

Features are classified by their potential to be a source of illicit discharge and whether or not they are an obvious (severe) source of an illicit discharge. The criteria used to identify potentially illicit discharges are considered stand-alone indicators. These are odor, color, floatables, poor pool quality, benthic growth, and deposits and stains. The presence of at least one of these criteria can designate the outfall as potentially illicit.

It is important to identify obvious (severe) sources of illicit discharge during dry weather screening, because the presence of obvious indicators (e.g. raw sewage) allows that feature to be prioritized for future follow-up investigation and resolution. For a location to be determined as an obvious (severe) source of an illicit discharge, it must have at least one of several specific, pre-defined stand-alone indicators.

## Indexed and non-indexed stand-alone indicators for identifying illicit discharge potential.

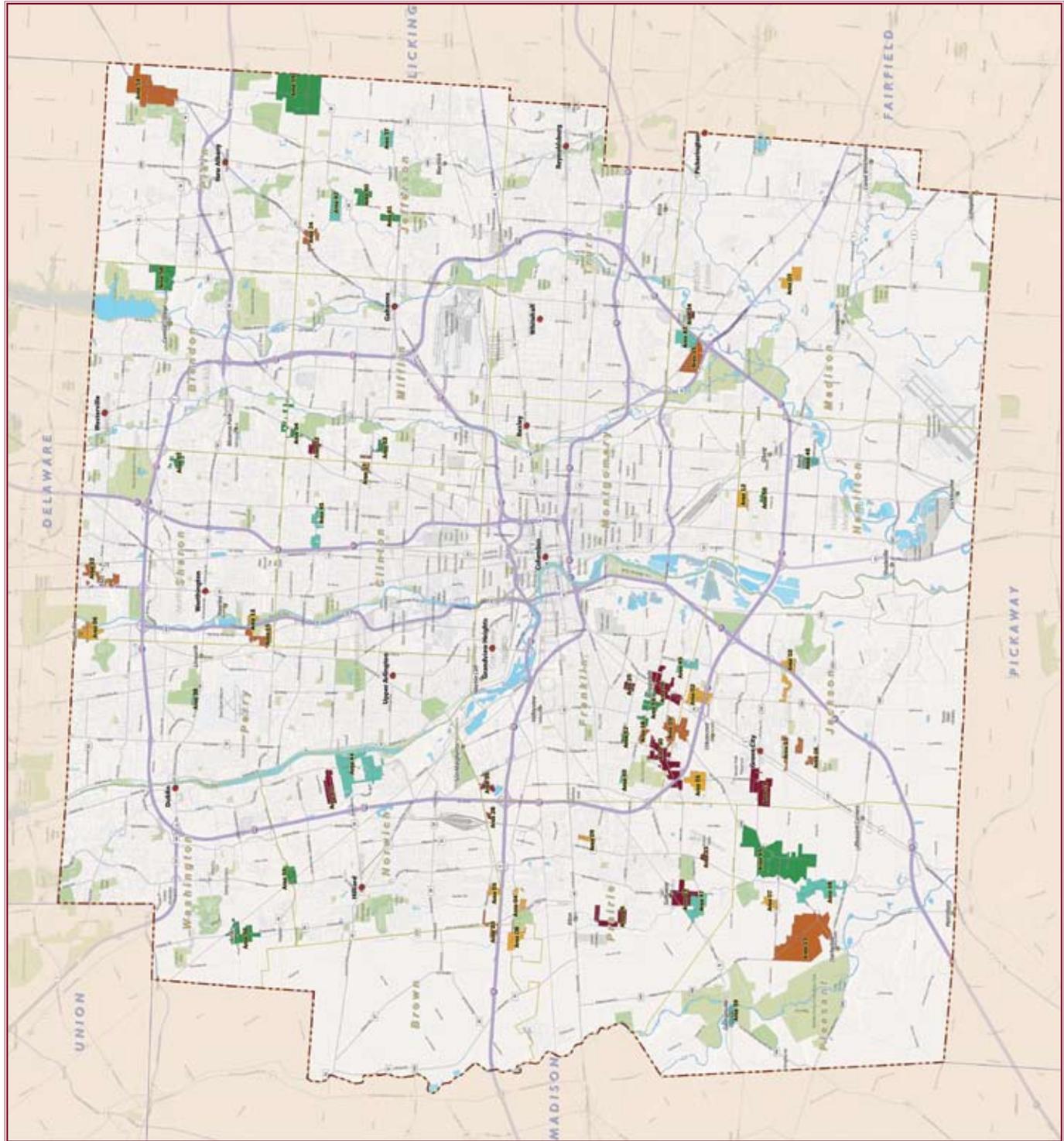
Stand-alone Indicators	Indicator quality / index score
Odor	None [0] Faint [1] Easily detected [2] Noticeable at distance [3]
Color	None [0] Faint in bottle [1] Clearly visible [2] Colored flow [3]
Floatables	None [0] Few or slight [1] Some [2] Some, clear origin [3]
*Benthic Growth Not indexed (Non-flowing indicator)	None Brown Orange Green Gray Other
*Deposits and stains Not indexed (Non-flowing indicator)	None Oily Flow line Paint Other
* Poor pool quality Not indexed (Non-flowing indicator)	None Odors Colors Floatables Oil sheen Suds Excessive algae Other

**Note:**

\* Flowing and non-flowing outfalls possess different criteria for illicit discharge detection. Non-flowing outfall data are not indexed and therefore cannot be determined to be obvious sources of illicit discharge unless otherwise noted by the field crew, with the exception of gray benthic growth (sewage fungus indicator). Also, sampling of non-flowing outfalls may not be possible if upon return to the site there is still no flow and no existing pool from which to collect sample.

# **Appendix F: Identified Areas of Concern for Storm Water Public Health Risks**

# Appendix G: Identified Areas of Concern for Storm Water Public Health Risks



## Identified Areas of Concern



- LEGEND**
- Franklin County Boundary
  - Historic Township Boundaries
  - Other County Boundaries

- Identified Areas of Concern**
- Group 1
  - Group 2
  - Group 3
  - Group 4
  - Group 5

**Note:**  
 Due to the dynamic nature of the conditions related to these data, the information shown is considered the best available data and is being used as such. As additional data is collected, regulatory documents are updated, and funding related to projects and personnel are allocated, the existence of and the location of the data represented is subject to change.

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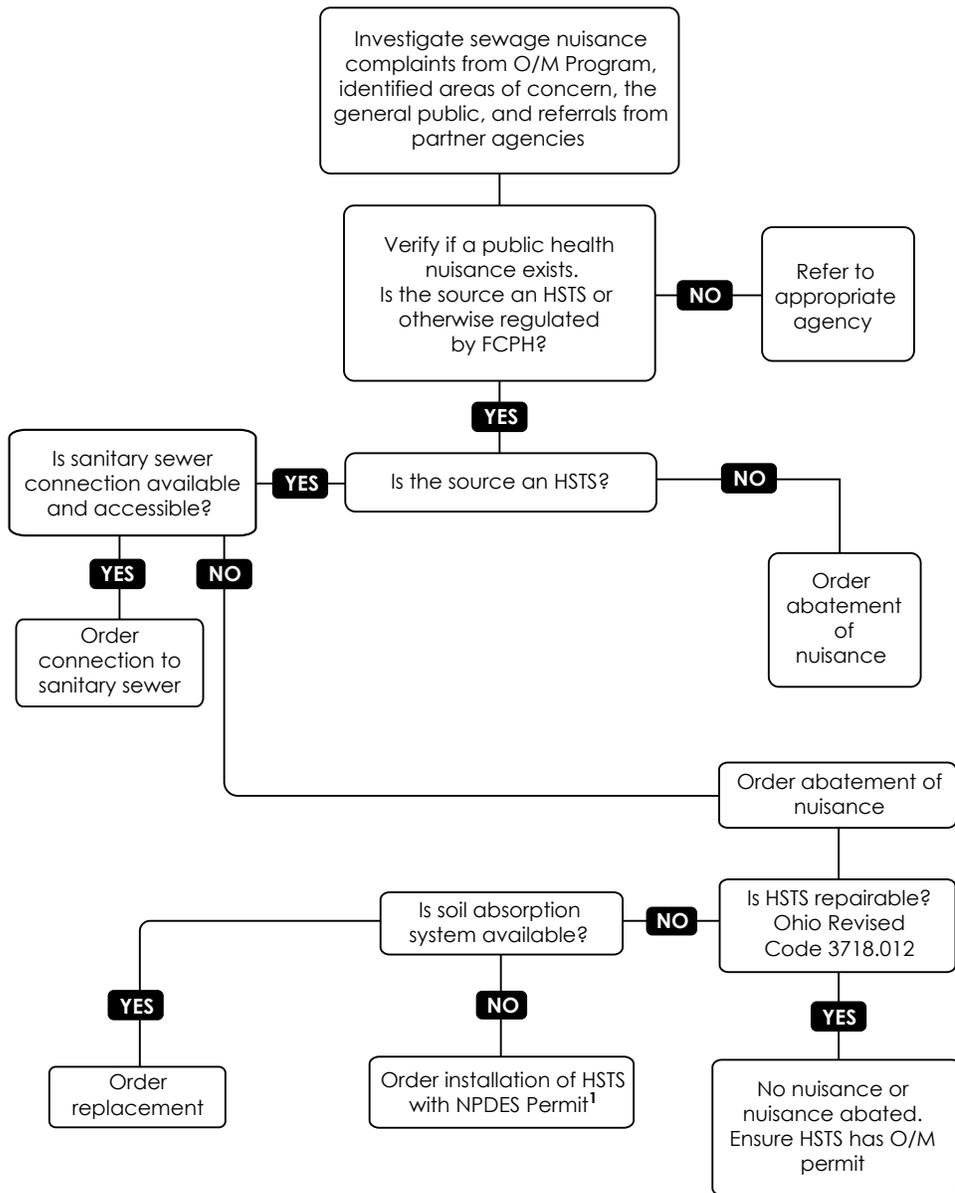
# **Appendix G: Flow Chart of Public Health Nuisance Abatement Process**

# Appendix H: Flow Chart of Public Health Nuisance Abatement Process



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**Household Sewage Treatment Systems (HSTS)  
 Public Health Nuisance Abatement**  
 November 2013



<sup>1</sup> NPDES: National Pollutant Discharge Elimination System